destea
department of
economic, small business development,
tourism and environmental affairs
FREE STATE PROVINCE

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report 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 report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

PROJECT TITLE

PROPOSED DEVELOPMENT OF A 12.54HA CEMETERY ON ERVEN 16667 TO 16702 AND 16704, HEIDEDAL, BLOEMFONTEIN IN THE FREE STATE PROVINCE.

DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

	Environmental Services EIA / SEA / EMP / ECO 082 697 7073 manievanwyk.ssi@gmail.com
Environmental Impact Assessment Practitioner ((EAP):	MVW ENVIRONMENTAL SERVICES (M VAN WYK)
Contact Person:	MANIE VAN WYK
Postal Address:	STOCK CRESCENT 9, FICHARDTPARK, BLOEMFONTEIN, 9301
Contact Number:	082 697 7073
Email:	MANIEVANWYK.SSI@GMAIL.COM
EAP Qualifications:	B.SC AND M.SC ENVIRONMENTAL MANAGEMENT AT FREE STATE UNIVERSITY
Years' Experience:	20 YEARS
EAP Registrations	EAPASA – REGISTRATION IN PROCESS

Details of the EAP's expertise to carry out Basic Assessment procedures:

Work Experience

MANIE VAN WYK

- JANUARY 1999 – DECEMBER 2012 – WORKED AS HEAD ENVIRONMENTAL SPECIALIST AT SPATIAL SOLUTIONS INC (TOWN & REGIONAL PLANNER AND ENVIRONMENTAL CONSULTANTS);
- JANUARY 2013 – OCTOBER 2019 – WORKED AS HEAD ENVIRONMENTAL SPECIALIST AT MVW ENVIRONMENTAL SERVICES WHERE HE IS ALSO THE DIRECTOR OF THE COMPANY.

Key Project Experience (Only Highlights)

Environmental Impact Assessment Experience:

- FULL ENVIRONMENTAL IMPACT ASSESSMENT AND EMP FOR THE PROPOSED TOWNSHIP ESTABLISHMENT (200HA) AT LOURIERPARK BLOEMFONTEIN FOR MANGAUNG METRO MUNICIPALITY.
- FULL ENVIRONMENTAL IMPACT ASSESSMENT AND EMP FOR THE PROPOSED TOWNSHIP ESTABLISHMENT (80HA) AT RODENBECK BLOEMFONTEIN FOR MANGAUNG METRO MUNICIPALITY.

- FULL EIA AND EMP FOR THE PROPOSED 60HA AMITOFO CARE CENTRE DEVELOPMENT AT MANDELA VIEW, BLOEMFONTEIN.
- FULL ENVIRONMENTAL IMPACT ASSESSMENT AND EMP FOR THE PROPOSED TOWNSHIP ESTABLISHMENT OF PLOT 29 LILEYVALE BLOEMFONTEIN.
- FULL ENVIRONMENTAL IMPACT ASSESSMENT AND EMP FOR THE PROPOSED TOWNSHIP ESTABLISHMENT FOR THE REDEVELOPMENT OF MASELSPOORT NEAR BLOEMFONTEIN.
- FULL ENVIRONMENTAL IMPACT ASSESSMENT AND EMP FOR THE PROPOSED TOWNSHIP ESTABLISHMENT FOR THE BLOEMFONTEIN RACE COURCE DEVELOPMENT NEAR BLOEMFONTEIN.

Basic Assessment Experience

- BASIC ASSESSMENT REPORTS AND EMP'S FOR VARIOUS CEMETERY SITES SITUATED IN BRANDFORT, THEUNISSEN, THABA NCHU, BLOEMFONTEIN AND NUMEROUS ONES FOR MAFUBE LOCAL MUNICIPALITY.
- BASIC ASSESSMENT REPORTS AND EMP'S FOR THE PROPOSED CHICKEN LAYER FACILITIES ON THE FARMS KROMDRAAI AND KLEINDONKERPOORT, SANNASPOS, BLOEMFONTEIN.
- BASIC ASSESSMENT REPORTS AND EMP'S FOR THE PROPOSED TELECOMMUNICATION MASTS SITUATED IN SENSITIVE AREAS IN BOTH PHUTHADITJHABA AND THABA NCHU IN THE FREE STATE PROVINCE.
- BASIC ASSESSMENT REPORT AND EMP AND AUDIT REPORTS FOR THE WATER PIPELINE UPGRADE FOR BLOEMWATER BETWEEN HOUTNEK AND MORAGO NEAR THABA NCHU.
- BASIC ASSESSMENT REPORT, EMP AND AUDIT REPORTS FOR THE WATER PIPELINE UPGRADE FOR BLOEMWATER BETWEEN HOUTNEK AND MORAGO NEAR THABA NCHU.
- BASIC ASSESSMENT REPORT AND EMP FOR THE PROPOSED EXPANSION OF THE BLOEMWATER WATER PURIFICATION WORKS AT RUSTFONTEIN DAM IN THE FREE STATE PROVINCE.
- BASIC ASSESSMENT REPORTS AND EMP'S FOR THE PROPOSED NEW PIVOTS ON FARMS IN COLESBERG DISTRICT.
- BASIC ASSESSMENT REPORTS AND EMP FOR THE PROPOSED NEW TOWNSHIP ESTABLISHMENT ON THE GRASSLAND SMALLHOLDING 17, BLOEMFONTEIN.
- BASIC ASSESSMENT REPORTS AND EMP FOR THE PROPOSED NEW TOWNSHIP ESTABLISHMENT ON SPITSKOP SMALLHOLDING 10 THAT INCLUDES NEW HOSPITAL, BLOEMFONTEIN.
- EIA AND EMP FOR A 15 HA INDUSTRIAL DEVELOPMENT SITUATED IN KATHU, NORTHERN CAPE PROVINCE
- 24G APPLICATION FOR THE UNLAWFUL CHICKEN LAYER FACILITY AT WITFONTEIN NEAR BLOEMFONTEIN.
- EIA AND EMP FOR THE PROPOSED FILING STATION ON ERF 26758 EASTEND BLOEMFONTEIN IN THE FREE STATE PROVINCE.
- EIA AND EMP FOR THE BLOEMFONTEIN ORGANIC COMPOST PLANT SITUATED NEXT TO THE N8 ROAD BETWEEN BLOEMFONTEIN AND PETRUSBURG IN THE FREE STATE PROVINCE;
- EIA AND EMP FOR THE BZM TRUCK STOP AND WAREHOUSE DEVELOPMENT OF THE FARM RIBBLESDALE 16, BLOEMFONTEIN THE FREE STATE PROVINCE;
- EIA EXEMPTION FOR THE CHICKEN ABATTOIR ON THE FARM HOLFONTEIN NEAR BULTFONTEIN IN THE FREE STATE PROVINCE.
- 24G ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND EMP FOR THE UNLAWFUL COMMENCEMENT OF THE BRICK MAKING FACILITY ON PLOT 151ESTOIRE, BLOEMFONTEIN IN THE FREE STATE PROVINCE;
- 24G ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND EMP FOR THE UNLAWFUL COMMENCEMENT OF THE FLY ASH PLANT ON ERVEN 24954 AND 24955 SASOLBURG IN THE FREE STATE PROVINCE.

Experience in Permits and Licensing

- WASTE LICENSE FOR THE UPGRADE OF THE RUSTFONTEIN WATER TREATMENT WORKS.
- VARIOUS ENVIRONMENTAL MANAGEMENT PLANS FOR BURROW PITS IN THE FREE STATE AND NORTHERN CAPE PROVINCE.

Environmental Control Officer (ECO)

- VARIOUS MTN SITE ACQUISITIONS, BUILDING PLANS AND REZONING AS WELL AS ENVIRONMENTAL IMPACT ASSESSMENTS, ENVIRONMENTAL MANAGEMENT PLANS; AUDITS AS WELL AS EIA INDEMNITY LETTERS.
- VARIOUS AUDIT REPORTS IN THE FREE STATE AND NORTHERN CAPE PROVINCE.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? Yes

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

IMBAZO TRADING 16 (PTY) LTD (THE APPLICANT) APPOINTED MVW ENVIRONMENTAL SERVICES, AN INDEPENDENT ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP), TO UNDERTAKE THE REQUIRED BASIC ASSESSMENT PROCESS FOR THE DEVELOPMENT OF A CEMETERY ON ERVEN 16667 TO 16702 AND 16704, HEIDEDAL, BLOEMFONTEIN IN THE FREE STATE PROVINCE.

IMBAZO TRADING 16 (PTY) LTD OWNS THIS LAND. THE CEMETERIES SERVING HEIDEDAL AND SURROUNDING AREAS HAVE RUN OUT OF CAPACITY AND THE MUNICIPALITY URGENTLY REQUIRES A NEW CEMETERY IN THE AREA.

THE STUDY AREA IS SITUATED WITHIN THE EASTERN DEVELOPMENT SECTION OF BLOEMFONTEIN, FREE STATE PROVINCE, SOUTH AFRICA AND FALLS UNDER THE MANGAUNG LOCAL MUNICIPALITY. THE COORDINATES TO THE CENTRE OF THE STUDY AREA ARE -29.08 07.30 S AND 26.15 51.33 E.

THE LOCATION OF THE INVESTIGATED SITE RELATIVE TO BLOEMFONTEIN IS SHOWN IN FIGURE 1 BELOW. THE ABOVE MENTIONED PROPERTY CAN BE SEEN ON THE PLANS BELOW AND ATTACHED APPENDIX A & C.

FIGURE 1 – REGIONAL LOCALITY OF THE PROPOSED HEIDEDAL CEMETERY SITE

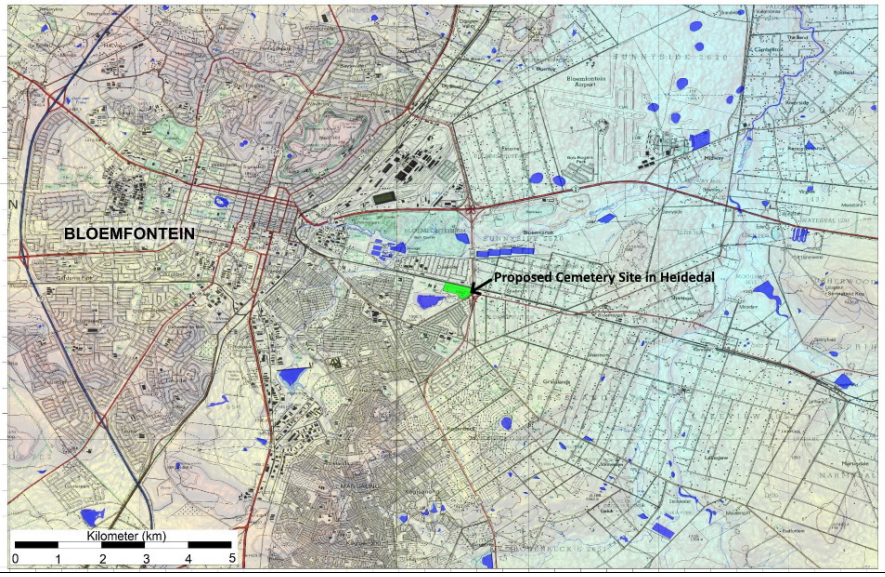


FIGURE 2 – AERIAL PHOTOGRAPH SHOWING THE LOCALITY OF THE PROPOSED HEIDEDAL CEMETERY SITE.

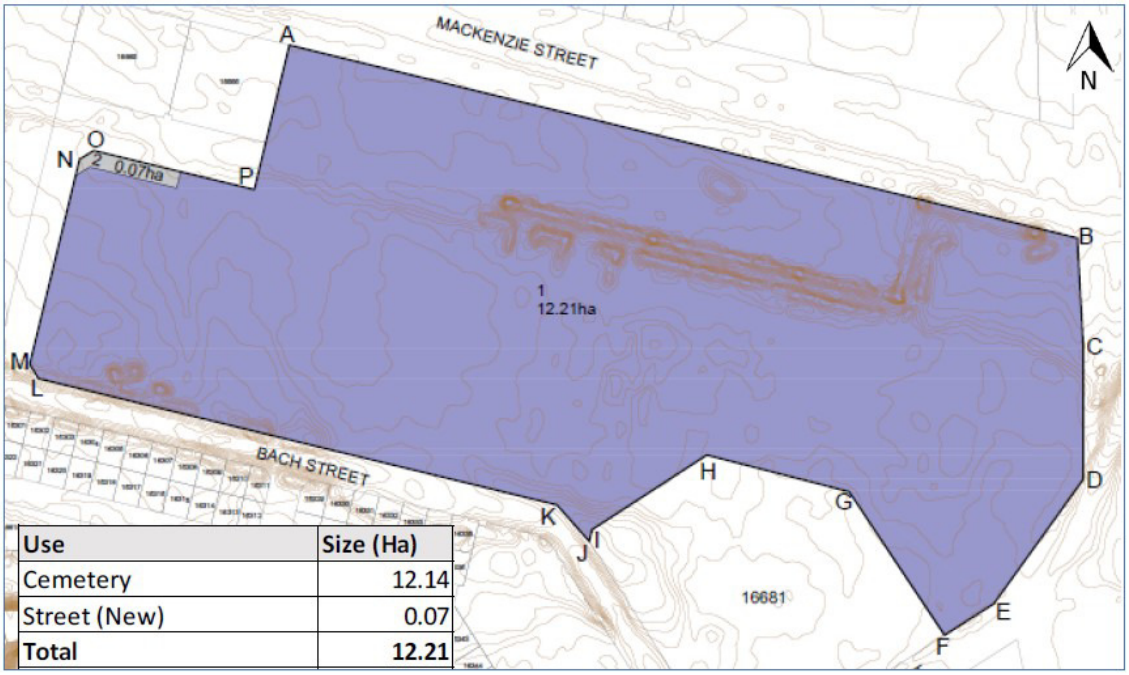
THE DEVELOPER (IMBAZO TRADING 16 (PTY) LTD) WISHES TO DO AN APPLICATION FOR REZONING IN ORDER TO ENABLE HIM TO ESTABLISH A CEMETERY ON THE PROPOSED SITE.

FIGURE 3 – LAYOUT MAP OF THE EXISTING INDUSTRIAL ERVEN TO BE REZONED TO CEMETERY.

THE ERVEN ON WHICH THE CEMETERY IS PLANNED ARE HEAVY DEGRADED WITH ALIEN AND INVASIVE SPECIES INFESTATION WITH LOTS OF ILLEGAL DUMPING TAKING PLACE THEREON SINCE THEY WERE FORMALIZED AS INDUSTRIAL SITES. ALL THE ERVEN FOR THE CEMETERY IS STILL UNDEVELOPED. THEY ARE HOWEVER FULLY SERVICED WITH TAR ROADS, SERVICES, STREETLIGHTS, STORMWATER ETC. THE PROPOSED CEMETERY WILL BE PRIVATELY OWNED AND THE OWNER WILL BE RESPONSIBLE FOR ROADS AND SERVICES WITHIN THE DEVELOPMENT. THE REZONING APPLICATION FOR THE ERVEN FROM INDUSTRIAL TO CEMETERY WILL BE SUBMITTED TO THE MANGAUNG METRO

MUNICIPALITY FOR REVIEW BY A PROFESSIONAL TOWN AND REGIONAL PLANNER NAMELY MR JANNIE HAMMER.
FIGURE 4 – PHOTOGRAPHS SHOWING THE STATE OF PROPOSED SITE.

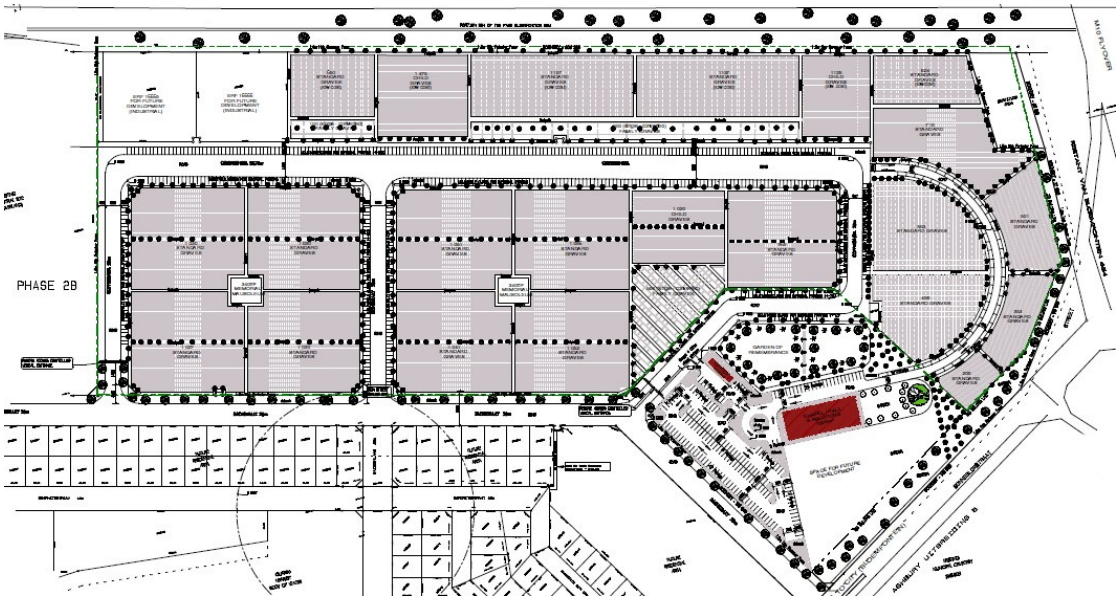
FIGURE 5 – RE LAYOUT OF THE GENERAL PLAN TO ALLOW FOR THE PROPOSED CEMETERY.



Use	Size (Ha)
Cemetery	12.14
Street (New)	0.07
Total	**12.21**

THE PROPOSED DEVELOPMENT WILL CONSIST OF 1 ERVEN AND A STREET AFTER THE RE LAYOUT OF THE GENERAL PLAN. ERF 16681 WILL NOT BE REZONED. IT WILL STAY GENERAL INDUSTRY AS THE BUILDINGS, PARKING'S ETC TO BE USED WITH CEMETERY WILL BE LOCATED THEREON.

FIGURE 6 – LAYOUT MAP OF THE PROPOSED CEMETERY.



THE PLANNED CEMETERY WILL CATER FOR THE FOLLOWING GRAVE SITES:

TABLE 1 – TYPES OF GRAVES AND THE AMOUNT PLANNED

GRAVE TYPE	NUMBER OF GRAVES
STANDARD (900 X 2500MM)	16638
CHILD (700 X 1500MM)	2524
TOTAL	**19162**

THE CEMETERY WILL ALSO HAVE THE FOLLOWING:

- A CHAPEL/HALL OF 1000M²;
- OFFICES & CARETAKER OF 100M²;
- MEMORIAL/MAUSOLEUMS OF 750M²;
- ROADS;
- FOOTPATHS;
- PARKING AREAS.

THE LAYOUT PLAN OF THE CEMETERY IS ALSO ATTACHED AS ANNEXURE "D".

THE DIMENSIONS OF A GRAVE ACCORDING THE MMM BY-LAWS RELATING TO CEMETERIES MUST BE AT LEAST THE FOLLOWING:

- THE EXCAVATION OF A GRAVE FOR AN ADULT SHALL BE AT LEAST 2 400MM DEEP, 2300 MM LONG AND 760 MM WIDE.
- THE EXCAVATION OF A GRAVE FOR A CHILD SHALL BE AT LEAST 1370 MM DEEP, 1520 MM LONG AND 610 MM WIDE.
- IN THE EVENT THAT A GRAVE OF A GREATER DEPTH, LENGTH OR WIDTH THAN THOSE SPECIFIED ABOVE IS REQUIRED, APPLICATION IN RESPECT THEREOF, TOGETHER WITH EXTRA PRESCRIBED FEES THAT ARE DUE, SHALL BE MADE TO THE CARETAKER TOGETHER WITH THE APPLICATION TO OBTAIN PERMISSION FOR A BURIAL.
- DEVIATIONS FROM MEASUREMENTS OF GRAVES SHALL BE AS FOLLOWS:

- EXTRA WIDE : 2300 MM LONG AND 840 MM WIDE;
- EXTRA LONG : 2530 MM LONG AND 760 MM WIDE;
- RECTANGULAR SMALL : 2300 MM LONG AND 810 MM WIDE;
- RECTANGULAR BIG : 2400 MM LONG AND 900 MM WIDE;
- BRICK-NOGGING : 2600 MM LONG AND 1050 MM WIDE.

- THE AREA OF A RECTANGULAR GRAVE FOR AN ADULT SHALL BE 1500 MM WIDE BY 2600 MM LONG.
- THE AREA OF A GRAVE FOR AN ADULT SHALL BE 1210 MM WIDE BY 2430 MM LONG.
- THE AREA OF A GRAVE FOR A CHILD SHALL BE 1210 MM WIDE BY 1520 MM LONG. IF A COFFIN IS TOO LARGE, AN ADULT GRAVE SHALL BE USED.

THE CEMETERY PLANNED MADE PROVISIONS FOR THE FOLLOWING GRAVE DIMENSIONS AND THEREFORE WILL COMPLY TO THE MMM BYLAWS.

- STANDARD GRAVES WILL BE 900 X 2500MM;
- CHILD GRAVES WILL BE 700 X 1500MM;
- ASH GRAVES WILL BE 1000 X 1000MM STACKED.

CONSIDERING THE ABOVE MENTIONED INFORMATION THE NEWLY PROPOSED CEMETERY WILL PROVIDE ENOUGH BURIAL SPACE FOR THE NEXT 15 – 25 YEARS.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN 327 Activity No(s):	Description of project activity
ITEM 23: THE DEVELOPMENT OF CEMETERIES OF 2500 SQUARE METERS OR MORE IN SIZE.	THE PROPOSED CEMETERY WILL HAVE A DEVELOPMENT FOOTPRINT OF 12.21HA
ITEM 27: THE CLEARANCE OF AN AREA OF 1 HA OR MORE, BUT LESS THAN 20HA OF INDIGENOUS VEGETATION EXCEPT 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.	THE PROPOSED DEVELOPMENT WILL HAVE A FOOTPRINT OF ± 12.21 HA.
Listed activity as described in GN 324 Activity No(s):	Description of project activity
ITEM 12: THE CLEARANCE OF AN AREA OF 300 SQUARE METERS OR MORE OF INDIGENOUS VEGETATION EXCEPT WHERE SUCH CLEARANCE OF INDIGENOUS VEGETATION IS REQUIRED FOR MAINTENANCE PURPOSES UNDERTAKEN IN ACCORDANCE WITH A MAINTENANCE MANAGEMENT PLAN. B. FREE STATE PROVINCE: IV. AREAS WITHIN A WATERCOURSE OR WETLAND; OR WITHIN 100 METRES FROM THE EDGE OF A WATERCOURSE OR WETLAND.	THE DEVELOPMENT IS SITUATED ABOUT 120M NORTH OF THE QUARRY DAM WHICH IS FURTHER THAN THE 100 REQUIREMENT. DWS WERE ALSO CONSULTED AND ACCORDING TO THEM THEY DO NOT SEE THE QUARRY DAM AS A WETLAND.
Listed activity as described in GN 325 Activity No(s):	Description of project activity
N/A	N/A
Waste Management Activities as described in GN 718 – Category A Activity No(s):	Description of project activity
N/A	N/A
Waste Management Activities as described in GN 718 – Category B Activity No(s):	Description of project activity
N/A	N/A
Atmospheric Emissions Activities as described in GN 248 Activity No(s):	Description of project activity
N/A	N/A

(c) Please provide details of all components of the proposed project and attach diagrams (e.g. architectural drawings or perspectives, engineering drawings, process flow charts etc.).

Buildings	YES	
Provide brief description:		

THE CEMETERY WILL INCLUDE THE FOLLOWING AS WELL:

- A CHAPEL/HALL & ABLUTIONS OF 1000M²;
- OFFICES & CARETAKER OF 100M²;
- MEMORIAL/MAUSOLEUMS OF 750M²;
- ROADS;
- FOOTPATHS;
- GARDEN OF REMEMBRANCE AND OTHER GARDEN AREAS;
- PARKING AREAS (270 FORMAL AND ABOUT 400 INFORMAL PARKING AREAS PROVIDED).

FIGURE 7 – SHOWING AMENITIES PLANNED AS PART OF CEMETERY ON ERF 16681.

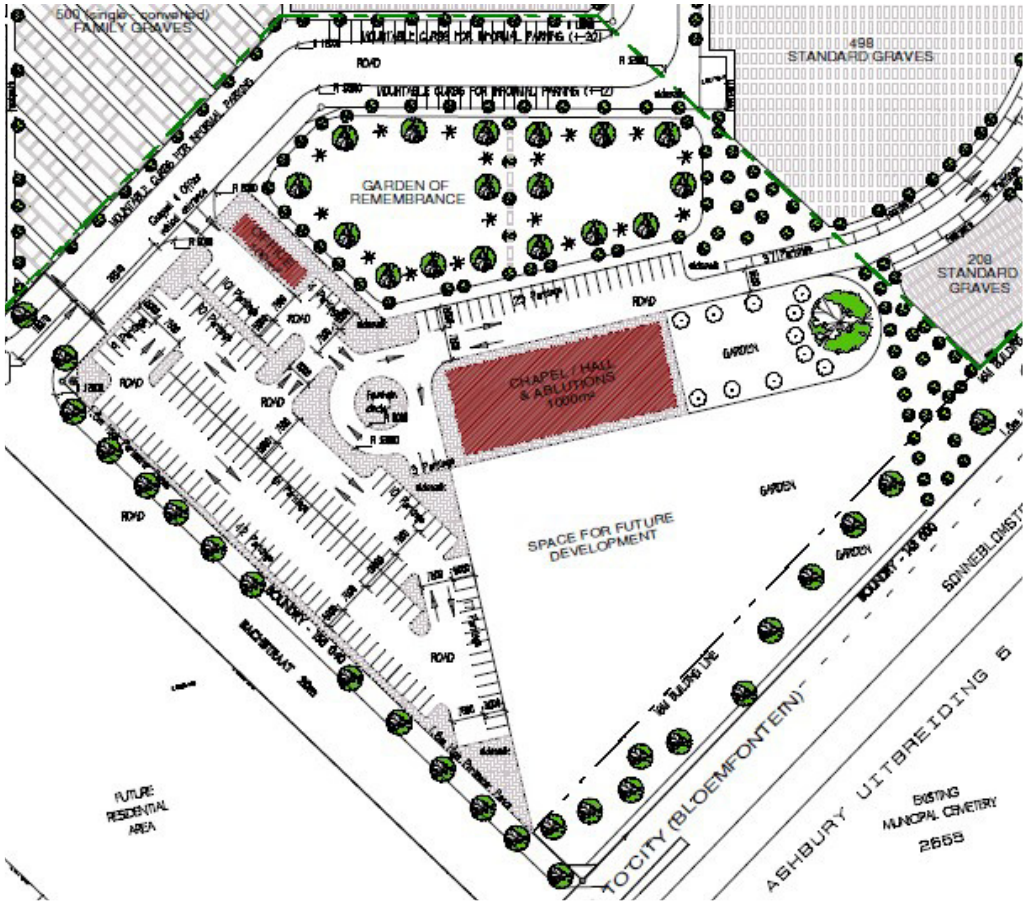
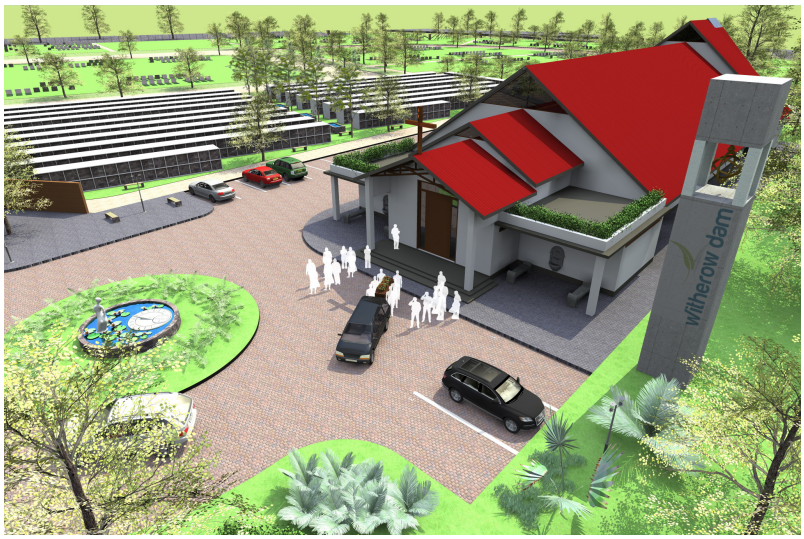


FIGURE 8 – ARCHITECTURAL PERSPECTIVES AND VIEWS OF PLANNED WITHEROW CEMETERY

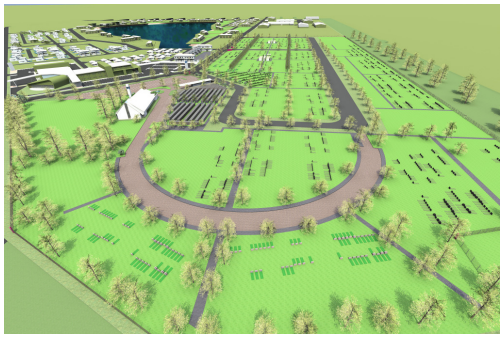
CHAPEL HALL AND ABLUTIONS



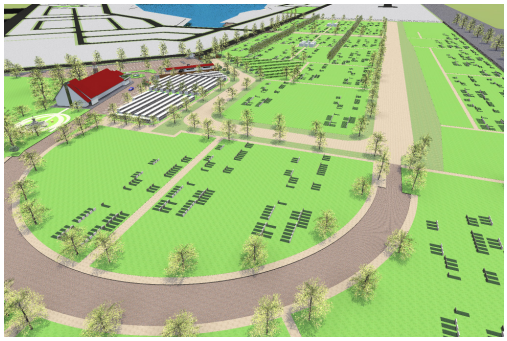
TOP VIEW OF PLANNED CEMETERY

OFFICES

AERIAL VIEW OF CEMETERY IN WESTERN DIRECTION



OVER VIEW EAST



Infrastructure (e.g. roads, power and water supply/ storage)	YES	
Provide brief description:		
THE SITE WAS PREVIOUSLY FULLY SERVICED AS SEPARATE INDUSTRIAL ERVEN. IF ANYTHING, THE EXISTING LEVEL OF		

SERVICES FAR EXCEEDS THE EXPECTED DEMANDS FOR A CEMETERY. THE FOLLOWING SERVICES WILL BE PROVIDED ON SITE: ➢ **POTABLE WATER**: POTABLE (MUNICIPAL) WATER WILL BE PROVIDED VIA A RETICULATION TO DRINKING FOUNTAINS AND ABLUTION FACILITIES. THIS RETICULATION HAS BEEN INSTALLED. ➢ **RAW WATER**: RAW WATER WILL BE PROVIDED VIA A SEPARATE RETICULATION FOR THE PURPOSES OF IRRIGATION AND MAINTENANCE. ➢ **ROADS AND STORMWATER**. THE EXISTING STREET AND STORMWATER INFRASTRUCTURE WOULD SUFFICE. SMALLER ACCESS STREETS WILL BE CONSTRUCTED. STORMWATER INFRASTRUCTURE HAS ALREADY BEEN CONSTRUCTED. ➢ **ELECTRICITY**: ELECTRICITY WILL BE PROVIDED TO ALL BUILT FACILITIES AND AREA LIGHTING. ➢ **SANITATION**. ABLUTION FACILITIES WILL BE SERVICED WITH SEWER CONNECTIONS.		
Processing activities (e.g. manufacturing, storage, distribution)		NO
Provide brief description:		
N/A		
Storage facilities for raw materials and products (e.g. volume and substances to be stored)		NO
Provide brief description:		
N/A		
Storage and treatment facilities for solid waste and effluent generated by the project		NO
Provide brief description:		
N/A		
Other activities (e.g. water abstraction activities, crop planting activities)	YES	
Provide brief description:		
THE FOLLOWING ACTIVITIES WILL BE ASSOCIATED WITH THE PROPOSED PROJECT: **BURIAL SPACE:** EXCAVATION AS PER THE MMM BY-LAWS FOR CEMETERIES AND CREMATORIUMS, BURIAL SPACES NEED TO ADHERE TO SPECIFIC DIMENSIONS. **MAINTENANCE OF THE CEMETERY:** MAINTENANCE WORK WILL NEED TO BE CONDUCTED TO ENSURE THAT THE CEMETERIES ARE CLEAN AND CLEAR OF WEEDS.		

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h) of GN 982, Regulation 2014. Alternatives should include a consideration of all possible means by which the

purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

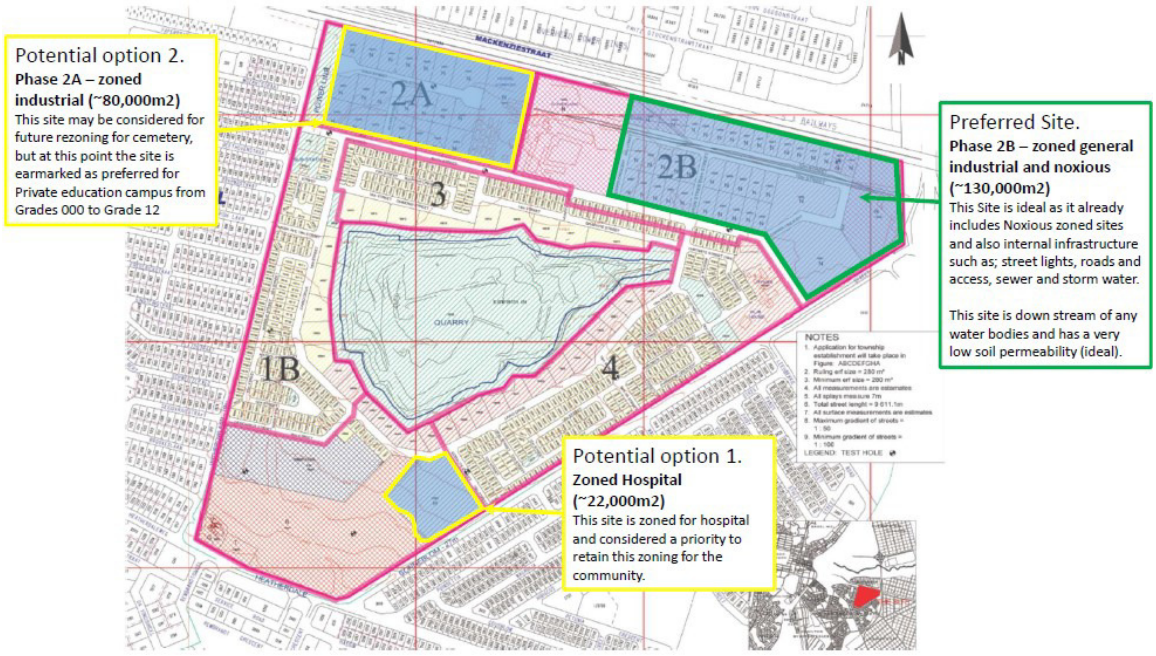
The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

THE MAP BELOW SHOWS THE APPROVED TOWNSHIP DEVELOPMENT OF OUR CLIENT AS WELL AS THREE IDENTIFIED POTENTIAL SITES EVALUATED FOR THE PROPOSED CEMETERY PLANNED. THE ONLY AREAS ALREADY DEVELOPED IS THE LIGHT INDUSTRIAL AREA TO THE LEFT OF THE PREFERRED SITE AS WELL AS THE SHOPPING MALL DEVELOPMENT ON THE MOST SOUTHERN SIDE OF THE SITE.

FIGURE 9 – MAP SHOWING THE APPROVED WITHEROW TOWNSHIP DEVELOPMENT AREA AS WELL AS THE THREE SITE ALTERNATIVES IDENTIFIED FOR THE PROPOSED CEMETERY.



Alternative 1 (preferred alternative site)		
Description	Lat (DDMMSS)	Long (DDMMSS)

FIGURE 10: SITE ALTERNATIVE 1 FOR PROPOSED CEMETERY. (ABCDEFG)

CO ORDINATES OF ALTERNATIVE 1 (APPROXIMATE CENTRE OF SITE).	29 08 07.30 S	26 15 51.33 E

POSITIVES AND NEGATIVES OF SITE ALTERNATIVE 1 FOR THE PROPOSED CEMETERY

POSITIVES:

- SITE IS EASILY ACCESSIBLE FROM MAJOR ROADS IN THE AREA.
- SITE IS SITUATED 130M DOWN GRADIENT FROM THE LARGE QUARRY DAM.
- SITE IS SITUATED ON AREA CURRENTLY ZONED GENERAL INDUSTRIAL AND NOXIOUS.
- SITE ALMOST OPPOSITE THE EXISTING HEIDEDAL CEMETERY.
- SITE ALREADY HAS TARRED ROADS WITH STREET LIGHTS.
- SITE ALREADY SERVICED WITH SEWER, STORMWATER AND ELECTRICITY.
- SITE IS SITUATED ABOUT 130M FROM CLOSEST RESIDENTIAL AREA.
- SITE IS ABOUT 12.54HA IN EXTENT THEREFORE ALLOWING FOR ENOUGH BURIAL SPACE FOR THE NEXT 15 - 25 YEARS.
- SITE IS CURRENTLY BEING USED AS ILLEGAL DUMPING AREA FOR HOUSEHOLD AND CONSTRUCTION WASTE. BY DEVELOPING THE SITE THE AREA WILL BE CLEANED UP WHICH WILL HAVE A POSITIVE IMPACT ON SURROUNDING ENVIRONMENTS.
- THE SITE IS SURROUNDED BY INDUSTRIAL FACTORIES TO THE NORTH (DOWNSTREAM) AND INFORMAL SETTLEMENTS TO THE SOUTH (UPSTREAM), THE MANGAUNG BLOEMSPRUIT WWTW TO THE NORTH WEST AND VACANT LAND TO THE NORTH EAST.

NEGATIVES:

- ACCORDING TO THE COUNCIL OF GEOSCIENCE, THE POSITIONING OF THE CEMETERY IN RESPECT OF THE DOMESTIC WATER SUPPLIES AND DRAINAGE FEATURES, MAY NOT BE SUITABLE. ADJUSTING THE BOUNDARIES OF THE PROPOSED AREA TO WITHIN THE SAFE MINIMUM DISTANCE AS DISCUSSED IMPROVE THE

PROPOSED SITE'S SUITABILITY. THIS WAS DONE FOR THE PREFERRED LAYOUT MAP.

- WORKABILITY OF THE MATERIAL IS POSSIBLE WITH PICK AND SHOVEL UP TO AN AVERAGE DEPTH OF 1.400M RANGING FROM 0.600M TO 1.600M. DEEPER EXCAVATIONS WILL REQUIRE MECHANICAL EXCAVATING EQUIPMENT.

Alternative 2 (Potential Option 2)		
Description	Lat (DDMMSS)	Long (DDMMSS)

FIGURE 11: SITE ALTERNATIVE 2 FOR PROPOSED CEMETERY.

CO ORDINATES OF ALTERNATIVE 2 (APPROXIMATE CENTRE OF SITE).	29 08 00.64 S	26 15 20.68 E

POSITIVES AND NEGATIVES OF SITE ALTERNATIVE 2 FOR THE PROPOSED CEMETERY

POSITIVES:

- SITE IS SITUATED 150M DOWN GRADIENT FROM THE LARGE QUARRY DAM.
- SITE IS SITUATED ON AREA CURRENTLY ZONED INDUSTRIAL. THE SITE IS CURRENTLY EARMARKED AS PREFERRED FOR PRIVATE EDUCATION CAMPUS FROM GRADES 000 TO GRADE 12 (WILL HAVE TO BE REZONED).
- SITE IS CURRENTLY BEING USED AS ILLEGAL DUMPING AREA FOR HOUSEHOLD AND CONSTRUCTION WASTE. BY DEVELOPING THE SITE THE AREA WILL BE CLEANED UP WHICH WILL HAVE A POSITIVE IMPACT ON SURROUNDING ENVIRONMENTS.

NEGATIVES:

- SITE IS NOT AS EASILY ACCESSIBLE FROM MAJOR ROADS IN THE AREA AS ALTERNATIVE 1 OR 3.

- LOSS OF PREFERRED EDUCATION SITE IF SITE IS TO BE USED FOR CEMETERY PURPOSES.
- SITE NOT YET DEVELOPED WITH ROADS AND STREET LIGHTS.
- SITE NOT YET SERVICED WITH SEWER, STORMWATER AND ELECTRICITY.
- THE SITE IS ABOUT 8HA IN EXTENT THEREFORE ONLY ALLOWING FOR BURIAL SPACE FOR THE NEXT 10 - 15 YEARS.
- SITE IS SITUATED ABOUT 40M FROM CLOSEST RESIDENTIAL AREA TO THE EAST OF THE SITE.
- DURING THE SITE VISIT, MULTIPLE MANHOLES WERE RECORDED (CS5 – SURFACE SITE 5 IN GEOHYDROLOGICAL REPORT) WEST OF THE STUDY AREA (FIGURE 20 OF ATTACHED GEOHYDROLOGICAL REPORT). THESE HOLES EXTEND FROM WEST TO EAST AND THEIR LINEAR EXTENT CAN BE SEEN REPRESENTED IN FIGURE 13 OF ATTACHED GEOHYDROLOGICAL REPORT. BECAUSE OF THIS INFRASTRUCTURE DOING A LAYOUT ON THIS SITE FOR THE CEMETERY WILL BE DIFFICULT. A LARGE AREA WILL BE UNUSABLE LEAVING THE REMAINING SITE SMALL.

Alternative 3 (Potential Option 3)		
Description	Lat (DDMMSS)	Long (DDMMSS)

FIGURE 12: SITE ALTERNATIVE 3 FOR PROPOSED CEMETERY.

CO ORDINATES OF ALTERNATIVE 3 (APPROXIMATE CENTRE OF SITE).	29 08 27.44 S	26 15 22.27 E

POSITIVES AND NEGATIVES OF SITE ALTERNATIVE 3 FOR THE PROPOSED CEMETERY

POSITIVES:

- SITE IS EASILY ACCESSIBLE FROM MAJOR ROADS IN THE AREA.

- Site is currently being used as illegal dumping area for household and construction waste. By developing the site the area will be cleaned up which will have a positive impact on surrounding environments.

Negatives:

- Site is situated 130m south (up gradient) from the large quarry dam. This can lead to possible pollution of the quarry dam.
- The site is situated on an area currently zoned for a hospital. The hospital is considered a priority. Loss of preferred hospital site if site is to be used for cemetery purposes.
- Site not yet developed with roads and street lights.
- Site not yet serviced with sewer, stormwater and electricity.
- The site is about 2.2Ha in extent therefore only allowing for burial space for the next 3 - 5 years.
- Site is situated about 20m from closest residential area to the southeast of the site.
- Site is situated about 20m from Twin Towers mall to the southwest of the site.

Conclusion on Site Alternatives Evaluation

From the above mentioned it is clear that Site Alternative 1 is the best option for the proposed cemetery site. It is located perfectly regarding access from major roads; it's already serviced; roads are already built and tarred and street lights already erected. The area is also large enough so to ensure that the cemetery will last for many years to come. The site is also situated directly opposite the existing cemetery that's at full capacity.

Site Alternative 1 was therefore selected as the Preferred Site option for the planned cemetery.

More detailed studies were then done on the Preferred Site in order to identify its suitability for the planned cemetery. These studies include Geohydrological and Geotechnical Studies. The following conclusions/recommendations was made in these studies attached in Appendix D.

1. Geohydrological Assessment

The risk of groundwater pollution is directly related to the nature of the activity. Through an in depth desktop and site investigation the following results could be drafted.

Conclusion:

- The investigated/preferred site was identified to be predominantly surrounded by industrial factories to the north (downstream) and informal settlements to the south (upstream), the Mangaung Bloemspruit WWTW to the north west and vacant land to the north east.
- The study area was mapped to be predominantly underlain by sandstone, shale and mudstone (K3l) of the Adeleide Supergroup belonging to the Beaufort Group. The local flat topography also suggest a horizontally uniform subsurface, undisturbed by shallow intrusive dolerite structures.
- A geophysical investigation revealed the study area to be underlain by a relatively uniform magnetic field accompanied with minor magnetic variations expected to be caused by poorly disposed general waste, iron materials and existing infrastructure. Mapped sedimentary structures do not show magnetic evidence of being underlain by magnetic associable intrusive geological structures at shallow depths.
- The study area is expected to be underlain by a Sandy Clay - Clay soil profile.

- THE LOCAL GROUNDWATER REGIME IS BELIEVED TO FORM PART OF AN UNCONFINED AQUIFER SYSTEM. THE LOCAL GROUNDWATER FLOW DIRECTION IS EXPECTED TO FOLLOW AN OVERALL TOPOGRAPHICAL DOWN SLOPE DIRECTION FROM THE WEST TO EAST, DRAINING WITHIN THE BLOEMSPRUIT RIVER CATCHMENT.
- THE GROUNDWATER TABLE BENEATH THE STUDY AREA IS EXPECTED TO BE RELATABLE TO THAT OF B4 (6,16 MBGL) AT A DEPTH OF 5-15 MBGL. THIS GROUNDWATER TABLE MAY HOWEVER BE PERCHED TO A SHALLOWER LEVEL DUE TO THE POSSIBILITY OF A CONTINUOUS WATER LEAK 200M SOUTH OF THE STUDY AREA. IT IS HIGHLY RECOMMENDED THAT THE WATER SOURCE BE IDENTIFIED AND MITIGATED.
- A TOTAL OF SIX SURFACE AND FOUR GROUNDWATER SITES WERE RECORDED DURING A HYDROCENSUS INVESTIGATION. THESE SITES REVEALED A LOCAL GROUNDWATER DEPENDENCY FOR RECREATIONAL AND ABLUTION PURPOSES WITHIN THE INDUSTRIAL AREA. DOMESTIC GROUNDWATER USE WAS REPORTEDLY RESTRICTED BY CROSS CONTAMINATION OF THE WWTW (NORTH WEST OF THE INVESTIGATED SITE) TO THE LOCAL WATERCOURSE.
- AN EXISTING CEMETERY EXCEEDING 6,6 HECTARES WAS RECORDED SOUTH EAST AND ADJACENT OF THE STUDY AREA.
- THE BLOEMSPRUIT RIVER CAN BE FOUND 2,5KM NORTH OF THE INVESTIGATED SITE FLOWING IN A WEST TO EAST DIRECTION. THIS RIVER REPRESENTS A CANALIZED STREAM AND WAS RECORDED TO BE HIGHLY DEGRADED BY GENERAL WASTE. THE CANALIZED BLOEMSPRUIT RIVER MAY BE CONSIDERED AS A PERENNIAL RIVER AS IT RECEIVES INCREASED SURFACE WATER RUNOFF FROM BLOEMFONTEIN'S URBAN AND CBD INDUSTRIAL SETTLEMENTS.
- ALTHOUGH HISTORIC WATER CHEMISTRIES AT (CS4) INDICATE THE SITE TO BE IN GOOD CONDITION, BACTERIOLOGICAL CHEMISTRIES COLLECTED DURING THE SITE VISIT SUGGEST THAT THE PROMINENT DAM (CS4) SOUTH OF THE INVESTIGATED SITE CONTAINS FAECAL COLIFORMS AND E.COLI OF FAECAL COLIFORM. THIS COULD BE CAUSED BY WONDERING LOCALS WITH UNRESTRICTED ACCESS TO THE AREA, WONDERING LIVESTOCK REPORTED TO GRACE THE AREA AND/OR FAULTY INFRASTRUCTURE CAUSING SEWAGE LEAKS INTO THE DAM (CS4).
- THE STUDY AREA IS SITUATED ON A MINOR AQUIFER REGION WHICH IS A MODERATELY-YIELDING AQUIFER SYSTEM OF VARIABLE WATER QUALITY.
- THE LOCAL AQUIFER HAS A LEAST GROUNDWATER VULNERABILITY RATING THAT IS VULNERABLE TO CONTINUOUSLY DISCHARGED OR LEACHED POLLUTANTS IN THE LONG TERM.
- DUE TO THE STUDY AREA'S AQUIFER SYSTEM HAVING A MINOR AQUIFER CLASSIFICATION AND LEAST AQUIFER VULNERABILITY RATING, IT CAN BE ASSUMED THAT THE AQUIFER HAS A LOW SUSCEPTIBILITY FOR CONTAMINATION.

CONSIDERING THE LOCAL AQUIFER'S CLASSIFICATION, VULNERABILITY RATING, SUSCEPTIBILITY FOR CONTAMINATION AND CALCULATED DRASTIC INDEX (DI) FOR THE REGIONAL AQUIFER, IT IS SUGGESTED THAT THE PROPOSED DEVELOPMENT AREA EXHIBIT A SUSCEPTIBILITY AND VULNERABILITY RATING OF VERY LOW.

RECOMMENDATIONS:

BASED ON HYDROGEOLOGICAL FINDINGS, THE PROPOSED CEMETERY DEVELOPMENT CAN ONLY BE CONSIDERED IF THE FOLLOWING RECOMMENDATIONS ARE STRICTLY ADHERED TO:

- SPECIAL ATTENTION SHOULD BE DIRECTED AT STORMWATER DIVERSION STRUCTURES TO RESTRICT POLLUTANTS SUCH AS HYDROCARBONS, SOAPS AND OTHER WASTE WATER CHEMICALS FROM SEEPING INTO THE SUBSURFACE AND UNDERLYING GROUNDWATER TABLE DURING CONSTRUCTION AND OPERATIONAL PHASE.
- WALLS OR FENCING SHOULD BE CONSTRUCTED AROUND THE PROPOSED CEMETERY DEVELOPMENT TO RESTRICT LOCALS FORM STROLLING THROUGH THE AREA AND CAUSING UNNECESSARY DAMAGE TO THE PROPERTY AND/OR LITTERING.
- TREES ON THE NORTHERN BORDER OF THE STUDY AREA SHOULD PREFERABLY BE KEPT IN PLACE WITH THEIR DEEP ROOT SYSTEMS INTACT TO ACT AS A CONTAMINANT BUFFER FOR GROUNDWATER FLOW TOWARDS THE NORTH.
- IT IS HIGHLY RECOMMENDED THAT THE WATER SOURCE TO SITE CS2 BE IDENTIFIED AND MITIGATED.
- SHOULD SITE CS1 BE USED FOR RECREATION IN THE FUTURE, APPROPRIATE LINING SHOULD BE INSTALLED TO RESTRICT WATER LEACHING

- PEOPLE RESPONSIBLE FOR MANAGEMENT PROCESSES IN A CEMETERY SHOULD:
  - DEVELOP A MODEL FOR STORING SPECIAL WASTE, I.E., HUMAN CORPSES,
  - PREVENT MIGRATION OF DECOMPOSITION PRODUCTS INTO THE SUBSTRATE,
  - EMPLOYEES OF FUNERAL HOMES SHOULD USE APPROPRIATE BOOTS, GLOVES AND FACE MASKS DURING WORK RELATED TO BURIALS OR EXHUMATIONS.
- ANY UN-MONITORED INCREASED ABSTRACTION OF GROUNDWATER BY THE POSSIBLE FUTURE DRILLING OF BOREHOLES WITHIN A 1KM RADIUS OF THE SITE CAN INCREASE FLOW GRADIENTS AND VELOCITIES AND WILL HAVE TO BE DISCOURAGED SHOULD IT BE CONSIDERED BY THE MUNICIPALITY OR LAND USERS.

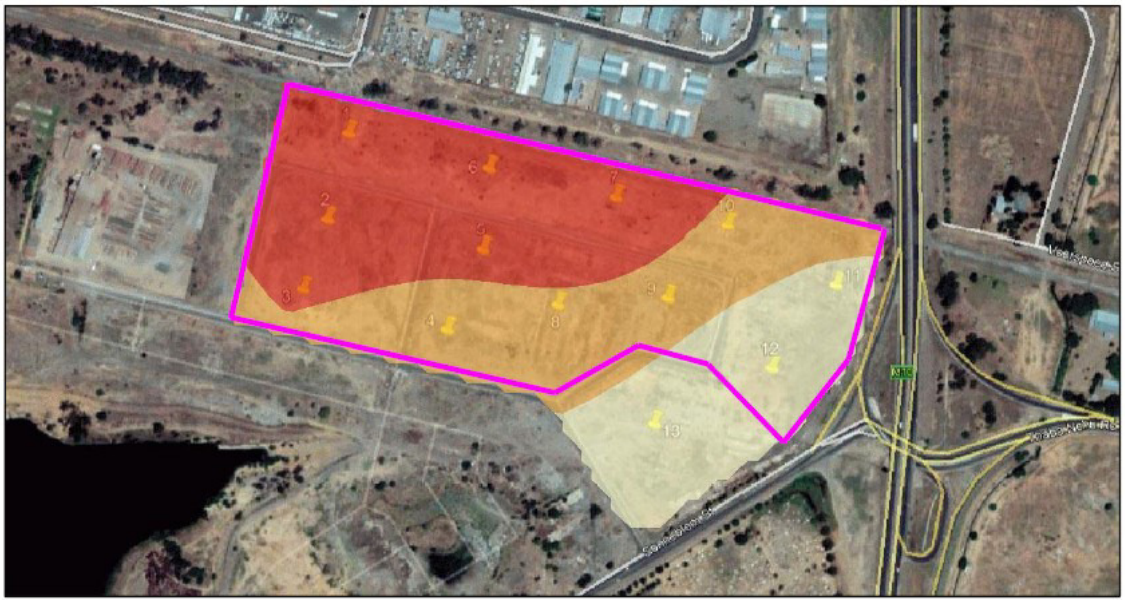
2. GEOTECHNICAL ASSESSMENT

SEE THE GEOTECHNICAL REPORT ATTACHED IN APPENDIX D

CONCLUSION MADE IN THIS REPORT INCLUDE:

- THE TOPOGRAPHY OF THE INVESTIGATED SITE IS RELATIVELY FLAT WITH AN ESTIMATED SLOPE OF LESS THAN 6°, TO BE DETERMINED BY A SURVEYOR. MOBILITY ON SITE IS INCREASED BY THE EXISTING ROADS.
- WORKABILITY OF THE MATERIAL IS POSSIBLE WITH PICK AND SHOVEL UP TO AN AVERAGE DEPTH OF 1.400M RANGING FROM 0.600M TO 1.600M. DEEPER EXCAVATIONS WILL REQUIRE MECHANICAL EXCAVATING EQUIPMENT.
- THE PROPOSED SITE IS SITUATED ON A RELATIVELY FLAT PLANE WITH FAIR TO POOR SURFACE COVER BY PLANTS. THIS MAY CAUSE PONDING AND EROSION ON AREAS WITH A SLIGHTLY STEEPER SLOPE. THE SITE DRAINAGE SHOULD BE WELL DESIGNED TO AVOID MARSHY CONDITIONS ESPECIALLY AROUND NEWLY EXCAVATED GRAVES.
- ACCORDING TO THE COUNCIL OF GEOSCIENCE, THE CALCULATED SOIL PERMEABILITY IS SUITABLE FOR A CEMETERY.
- ACCORDING TO THE COUNCIL OF GEOSCIENCE, THE POSITIONING OF THE CEMETERY IN RESPECT OF THE DOMESTIC WATER SUPPLIES AND DRAINAGE FEATURES, MAY NOT BE SUITABLE. ADJUSTING THE BOUNDARIES OF THE PROPOSED AREA TO WITHIN THE SAFE MINIMUM DISTANCE AS DISCUSSED IN GEOTECHNICAL REPORT IMPROVE THE PROPOSED SITE'S SUITABILITY.

FIGURE 13: MAP SHOWING THE SAFE MINIMUM DISTANCE WITH RESPECT TO POSITIONING IN RESPECT OF DRAINAGE FEATURES.



- AT THE TIME OF THE INVESTIGATION, NO WATER TABLE WAS ENCOUNTERED AT THE PROPOSED SITE. A HYDROLOGICAL STUDY WAS CONDUCTED TO DETERMINE THE DEPTH OF THE WATER TABLE AND ENSURED THE 2.500M BASAL BUFFER ZONE.
- THE MATERIALS ON SITE WERE FOUND TO BE STABLE AND WITHOUT ANY SIGNS OF SIDEWALL COLLAPSE DURING THE EXCAVATION OF THE TEST PITS.
- THE SIZE OF THE INVESTIGATED AREA IS APPROXIMATELY 13.0HA. THE AREA OF THE PROPOSED SITE DISCUSSED TO ADHERE TO THE SAFE MINIMUM DISTANCE WITH RESPECT TO DRAINAGE FEATURES IS APPROXIMATELY 10.1HA.

In the case of linear activities: NOT APPLICABLE

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)

SEE APPENDIX C FOR A A3 COPY OF THE PREFERRED LAYOUT MAP.

Chappel / Hall = 1 000m²
Offices & Caretaker = 100m²

Memorial / Mausoleums = 750m²
set aside as allocated.

Total Ground floor Area = 1 100m²

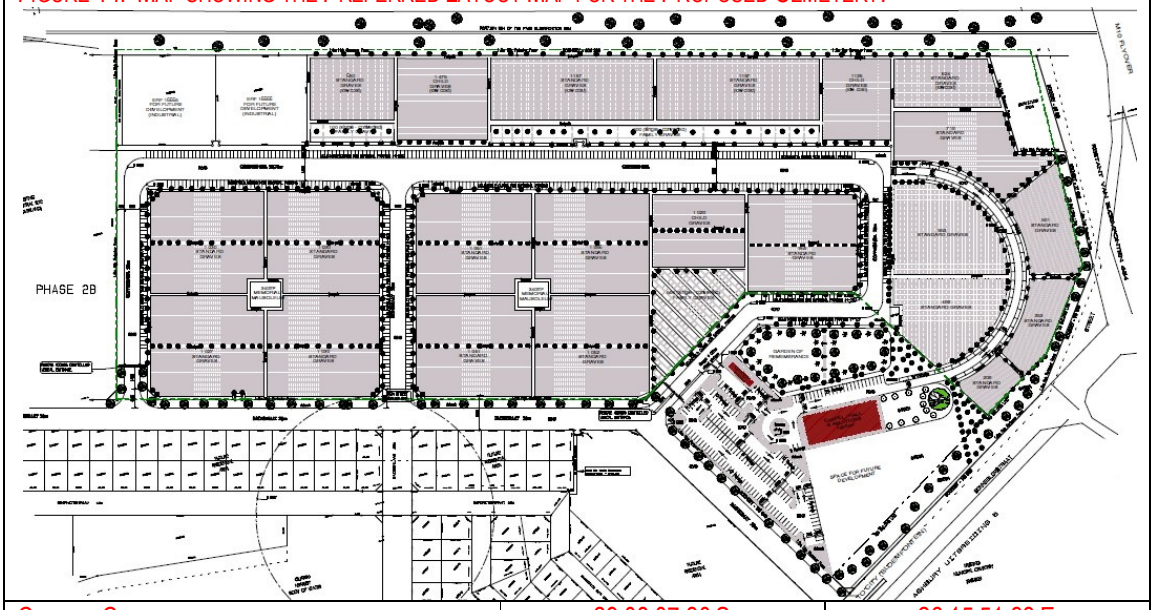
Erf Area = 125 405m²
Includes Roads, footpaths & parking
Main acces road (copper & Iron str.)

GRAVE SITES:
Standard graves = 16 638
(900 x 2500mm)

Child Graves = 2 524
(700 x 1500mm)

Total Graves sites = 19 162

FIGURE 14: MAP SHOWING THE PREFERRED LAYOUT MAP FOR THE PROPOSED CEMETERY.



CENTRE COORDINATES	29 08 07.30 S	26 15 51.33 E

POSITIVES AND NEGATIVES OF LAYOUT ALTERNATIVE 1 FOR THE PROPOSED CEMETERY

POSITIVES:

- THE CHAPEL AND OFFICES ARE LOCATED ON LAND THAT IS SITUATED WITHIN THE MINIMUM DISTANCE WITH RESPECT TO POSITIONING IN RESPECT OF DRAINAGE FEATURES AS PER GEOTECHNICAL REPORT.
- CHEAPER TO GET ALL THE REQUIRED ZONINGS IN PLACE BY LEAVING ERF 16681 GENERAL INDUSTRIAL.
- NO GRAVES PLANNED ON ERF 16681 AS IT WILL NOT BE REZONED TO CEMETERY.
- MORE GRAVES AND LONGER LIFE EXPECTANCY.

NEGATIVES:

- THE CHAPEL AND OFFICES ARE NOT AS CENTRALLY LOCATED.
- LOSS OF GENERAL INDUSTRIAL ERF DUE TO CEMETERIES CHAPEL, ABLUTIONS, OFFICES, PARKING AREAS ETC IS PLANNED THEREON.

Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)

SEE ALTERNATIVE LAYOUT MAP BELOW IN FIGURE 15.

Chappel / Hall = 1 000m²
Offices & Caretaker = 100m²

Memorial / Mausoleums = 750m²
set aside as allocated.

Total Ground floor Area = 1 100m²

Erf Area = 156 152m²
Includes Roads, footpaths & parking
Main acces road (copper & Iron str.)

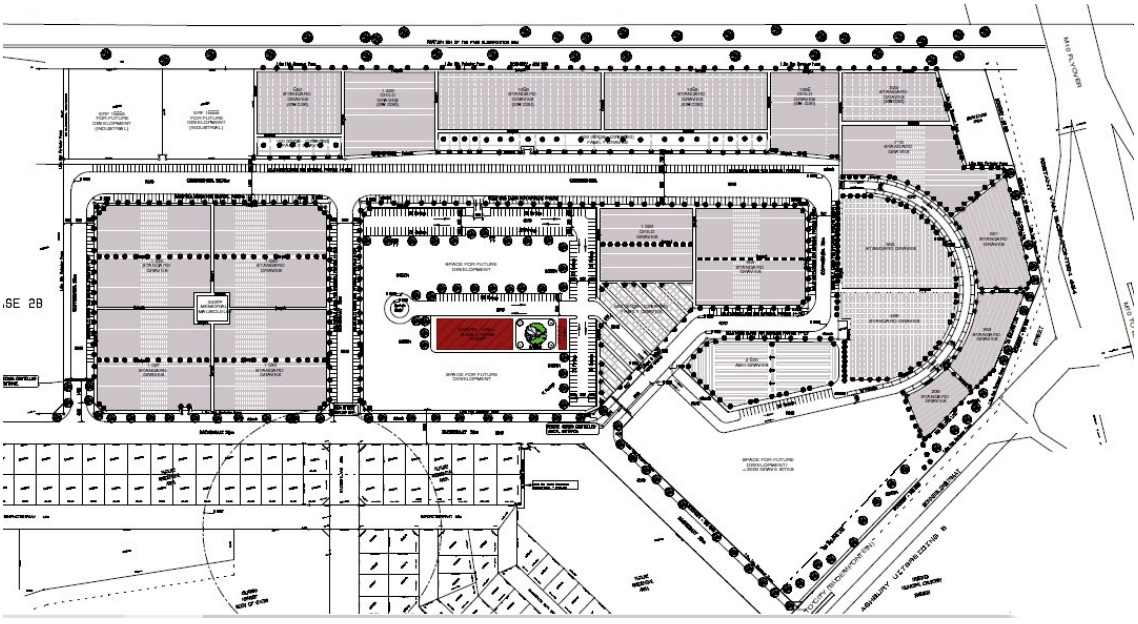
GRAVE SITES:
Standard graves = 12 306
(900 x 2500mm)

Child Graves = 2 453
(700 x 1500mm)

Ash Graves = 2 600
(1000 x 1000mm) Stacked.

Total Graves sites = 17 359

FIGURE 15: MAP SHOWING THE ALTERNATIVE LAYOUT MAP FOR THE PROPOSED CEMETERY.



CENTRE COORDINATES	29 08 06.17 S	26 15 47.44 E

POSITIVES AND NEGATIVES OF LAYOUT ALTERNATIVE 2 FOR THE PROPOSED CEMETERY

POSITIVES:

- ERF 16681 CAN BE USED FOR GENERAL INDUSTRIAL DEVELOPMENT.
- THE CHAPEL AND OFFICES ARE MORE CENTRALLY LOCATED.
- MORE EXPENSIVE TO GET ALL THE REQUIRED ZONING IN PLACE.

NEGATIVES:

- MUCH LESS SUITABLE LAND TO PLAN GRAVES ON AS A LARGE PORTION OF LAND FALLS WITHIN THE MINIMUM DISTANCE WITH RESPECT TO POSITIONING OF GRAVES IN RESPECT OF DRAINAGE FEATURES AS PER GEOTECHNICAL REPORT.
- GRAVES THAT'S PLANNED ON ERF 16681 IS NOT ALLOWED AS ERF 16681 WILL NOT BE REZONED TO CEMETERY.
- LESS GRAVES THAN LAYOUT ALTERNATIVE 1 AND THEREFORE SHORTER LIFE EXPECTANCY.
- THE CEMETERY PLANNED ON LAYOUT ALTERNATIVE 2 WILL NOT LAST AS LONG AS THE CEMETERY IN LAYOUT ALTERNATIVE 1.

CONCLUSION ON SITE LAYOUT ALTERNATIVES EVALUATION

FROM THE ABOVE MENTIONED IT IS CLEAR THAT SITE LAYOUT ALTERNATIVE 1 IS THE BEST OPTION FOR THE PROPOSED CEMETERY SITE. MORE GRAVE SITES CAN BE LAID OUT THERE ON MAKING IT MORE FEASIBLE TO OUR CLIENT. IT FURTHERMORE PREVENTS ANY POSSIBLE GRAVES TO BE LOCATED/PLANNED WITHIN THE MINIMUM DISTANCE WITH RESPECT TO POSITIONING OF GRAVES IN RESPECT OF DRAINAGE FEATURES AS PER GEOTECHNICAL REPORT.

Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
NO ALTERNATIVE 3		

c) Technology alternatives

Alternative 1 (preferred alternative)
NONE
Alternative 2
NONE
Alternative 3
NONE

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)
THE NO-GO ALTERNATIVE WILL ONLY COME INTO EFFECT SHOULD THIS STUDY FIND THAT THE PROPOSED PROJECT WILL HAVE MAJOR ENVIRONMENTAL IMPACTS ON THE RECEIVING ENVIRONMENT THAT CANNOT BE MITIGATED TO ACCEPTABLE LEVELS. THE NO GO ALTERNATIVE WILL LEAVE THE SITE IN ITS CURRENT UNUSED AND POLLUTED STATE.
Alternative 2
NONE

Alternative 3
NONE

e) No-go alternative

THE NO-GO ALTERNATIVE WILL ONLY COME INTO EFFECT SHOULD THIS STUDY FIND THAT THE PROPOSED PROJECT WILL HAVE MAJOR ENVIRONMENTAL IMPACTS ON THE RECEIVING ENVIRONMENT THAT CANNOT BE MITIGATED TO ACCEPTABLE LEVELS. THE NO GO ALTERNATIVE WILL LEAVE THE SITE IN ITS CURRENT UNUSED AND POLLUTED STATE.

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	± 12.54Ha
Alternative A2 (if any)	± 8.0Ha
Alternative A3 (if any)	± 2.2Ha

or, for linear activities: N/A

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	m
Alternative A2 (if any)	m
Alternative A3 (if any)	m

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur): N/A

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

4. SITE ACCESS

Does ready access to the site exist?	YES
If NO, what is the distance over which a new access road will be built	m

[1] "Alternative A.." refer to activity, process, technology or other alternatives.

Describe the type of access road planned:

EXISTING ACCESS TO THE CEMETERY THROUGH BACH STREET THAT'S ALREADY DEVELOPED WITH STREETLIGHTS FROM SONNEBLOM STREET. SONNEBLOM STREET TRAVELS THROUGH THE EASTERN REGIONS OF BLOEMFONTEIN. THIS ROAD IS SITUATED ADJACENT TO THE EAST OF THE SUBJECT SITE AND FOLLOWS A NORTH-SOUTH ALIGNMENT PAST THE STUDY AREA. ACCESS TO THE PROPOSED SITE IS PROPOSED DIRECTLY FROM THIS ROAD. THIS ROAD INTERSECTS WITH HEATHERDALE ROAD FURTHER TO THE SOUTH AND THE M10 FURTHER TO THE NORTH OF THE SUBJECT SITE.

FIGURE 16: MAP SHOWING THE EXISTING ACCESS ROAD AND INTERSECTION AT THE PLANNED CEMETERY.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities 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;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and

- locality GPS co-ordinates (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.

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

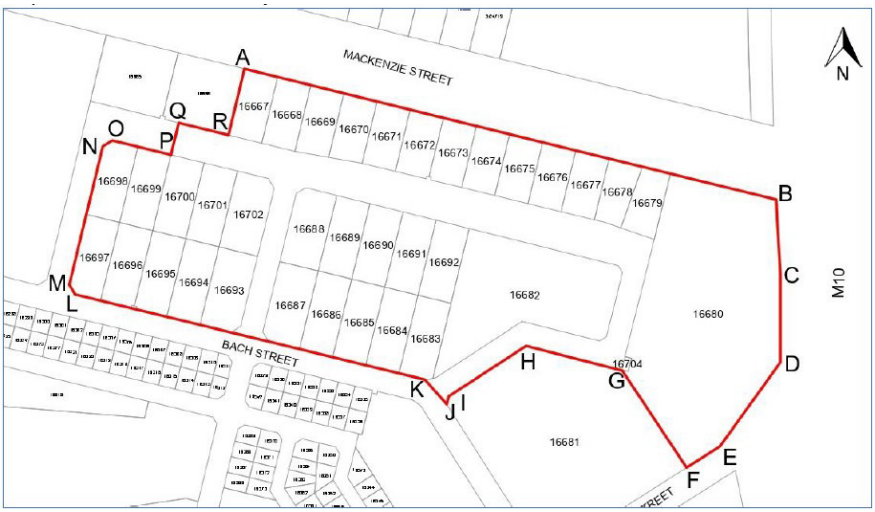
1. Is the activity permitted in terms of the property's existing land use rights?		NO	Please explain

THE APPLICANT IS IN THE PROCESS OF APPLYING FOR THE LAND USE RIGHT AS REQUIRED BY THE PROPOSED DEVELOPMENT FOR ERVEN 16667 TO 16702 AND 16704, HEIDEDAL THAT IS CURRENTLY ZONED INDUSTRIAL.

THE PROPOSED ZONING PARAMETERS AND THE LAND USE RESTRICTIONS FOR THE PROPERTIES IS GOVERNED BY THE BLOEMFONTEIN TOWN PLANNING SCHEME NO. 1 OF 1954 (AS AMENDED). ANY CHANGES IN EXISTING USAGE ARE FIRSTLY GOVERNED BY THE SPATIAL LAND USE MANAGEMENT ACT, ACT 16 OF 2013 (HEREAFTER SPLUMA) AND LOCALLY BY THE SUBSEQUENT MMM BY-LAW FOR MUNICIPAL LAND USE PLANNING, PUBLISHED IN THE FS PROVINCIAL GAZETTE 35 OF 3 JULY 2015 (HEREAFTER MMM 35/2015).

A) AN APPLICATION WILL BE MADE FOR THE PARTIAL CANCELLATION OF THE GENERAL PLAN CONSISTING OF ERVEN 16667- 16680, 16682 – 16702 AND 16704 WITH THE AIM OF REGISTERING A RE-LAYOUT FOR THE PURPOSES OF A CEMETERY IN TERMS OF SECTION –(-)(-)(--) OF THE MMM 35/2015. THE APPLICANT INTENDS TO CANCEL THE CURRENT GENERAL PLAN OF THE AREA MARKED IN RED, WHICH CONSISTS OF ERVEN 16667 - 16680, 19982 – 16702 AND 16704, AND A PORTION OF STREETS IN ORDER TO DO A RE-LAYOUT WHICH WILL ALLOW FOR A CEMETERY.

FIGURE 17: MAP SHOWING THE PARTIAL CANCELATION OF THE GENERAL PLAN.



A REZONING APPLICATION WILL BE SUBMITTED TO REZONE THESE ERVEN FROM INDUSTRIAL TO A SPECIAL USE ZONING. THIS WILL ALLOW FOR THE DEVELOPMENT OF A CEMETERY THEREON.

2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	N/A		Please explain

N/A. THE PROPERTY IS WITHIN THE TOWNSHIP ALREADY.

(b) Urban edge / Edge of Built environment for the area	YES		Please explain

THE PROPERTY IS SITUATED WITHIN THE TOWNSHIP ALREADY. PLANNED WITHIN THE URBAN EDGE.

(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) 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?).		NO	Please explain
THE PROPOSED DEVELOPMENT APPLICATION WAS PRESENTED TO THE STANDING COMMITTEE DEALING WITH THIS MATTER AT MMM. THE PROPOSED DEVELOPMENT DOES NOT REQUIRE THE AMENDMENT OF THE SDF OR ANY OTHER PARTICULAR AMENDMENTS TO POLICY. INSTEAD, IT REPRESENTS A NORMAL DEVELOPMENT APPLICATION.			
(d) Approved Structure Plan of the Municipality	N/A		Please explain
NO LOCAL STRUCTURE PLAN FOR THE AREA.			
(e) An Environmental Management Framework (EMF) adopted by the 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	Please explain
NO IMPACT ON THE EMF.			

(f) Any other Plans (e.g. Guide Plan)		No	Please explain

As per the Development Parameters as published by the Department of Environmental Affairs and Development Planning (DEA&DP) Cemeteries should comply with the following:

Table 2: Requirements for Cemetery Development

Description	A cemetery is defined as land set aside for burial purposes, which can include a chapel (or equivalent), a memorial garden, crematorium and mausoleums, sometimes also referred to as a graveyard or burial ground.
Locational Criteria	Cemeteries are ideally clustered with related facilities such as adjacent to places of worship, police stations, or nature conservation areas. It should be noted that as a cemetery is generally quite space intensive, that it not be placed within settlement cores, but rather upon its peripheries or in lower density areas. A cemetery may be the ideal activity to place on the urban edge or in the urban-rural transition area, as long as it is not placed in the path of future development.
Site Criteria	Site size considerations are the following: • The site size must be determined by the identified need for burial, including future forecasting; • 2000 grave sites can be provided per hectare, or alternatively 5m² can be provided per grave, including an additional 10% for circulation.
Accessibility Distance and Site Spacing Criteria	A cemetery is a high-order facility and, as such, generally should only be provided at 1 per 100 000 people. Cemeteries should be accessible by public transport. There are cases where smaller cemeteries can be provided in smaller settlements. The size of such a site should be determined based on the following factors: • The mortality rate of the settlement; • The demographics of the settlements; • Current cemetery capacity; • The availability of appropriately located space; and • Cultural/religious requirements.
Population Threshold Criteria	The following sets out the number of people/dwelling units that will justify the need for a cemetery: • 100 000 people. Smaller cemeteries are provided in smaller settlements that do not meet this threshold.
Other Criteria for Consideration	• It is critical that a cemetery is not placed in an area prone to experiencing a high water table at any time of the year, and therefore the drainage, geological features and hydrological features of the site are critical to determining its ideal location; • Low-lying areas, or areas within the floodplain, are generally not suitable for cemeteries. • Religious practices will be a factor in determining the spatial requirements, for example a Muslim burial ground needs to be separate from other religious burial grounds.

The proposed development is in line with the above mentioned criteria.

3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	N/A		Please explain
IT IS A PRIVATE DEVELOPMENT NOT LISTED IN THE IDP. IT DOES NOT HAVE TO BE LISTED IN THE IDP TO BE CONSIDERED. IT WILL BE CONSIDERED IN TERMS OF SPLUMA APPLICATION.			

4. Does the community/area need the activity 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		Please explain

SOCIAL

THERE IS A LOOMING PROBLEM AS PRESSURE ON AVAILABLE BURIAL SPACE INTENSIFIES. PREVIOUSLY, MOST PEOPLE HAD LIVED IN RURAL LOCATIONS AND WOULD BE BURIED IN THE LOCAL CHURCH'S GRAVEYARD, BUT WITH A GROWING URBAN POPULATION, LARGE CEMETERIES ARE OFTEN BUILT ON THE OUTSKIRTS OF CITIES. THESE CEMETERIES ARE NOW LARGELY FULL WHICH ENHANCES THE PROBLEM AS LOCAL AUTHORITIES HAVE TO TRY TO FIND LAND FOR NEW CEMETERIES, WHICH ARE EXPENSIVE, WHILE STILL COVERING THE MAINTENANCE COSTS OF OLDER CEMETERIES.

THIS IS VERY MUCH THE CASE IN BLOEMFONTEIN AS WELL. THERE IS A PRESSING NEED DUE TO A LACK OF SPACE OR CAPACITY AS EXISTING CEMETERIES ARE FILLED TO THE BRIM. ALSO PRESSING NEED FOR DIVERSIFICATION WHERE FAMILIES CAN STILL ELECT TO BE BURIED WITH LOVED ONES IN A SERENE ENVIRONMENT. IN OTHER WORDS, A PRESSING NEED FOR CHOICE.

IT CAN THEREFORE BE ARGUED THAT THERE IS A SOCIAL NEED FOR A CEMETERY THAT PROMOTES THE VERY CHARACTERISTICS THAT ONE IS FAMILIAR WITH. THE LACK OF CHOICE IN TERMS OF LOCATION AND QUALITY IS SOCIALLY UNACCEPTABLE.

ECONOMIC

THE BURIAL INDUSTRY MAY SEEM MACABRE TO SOME, BUT IT IS AN ESSENTIAL SERVICE THAT NEEDS TO BE RENDERED. THE PROPOSED DEVELOPMENT SEEKS TO PROMOTE ECONOMIC DIVERSITY IN THIS SECTOR ALLOCATING GRAVE BLOCKS TO A NUMBER OF LOCAL UNDERTAKERS, THUS OPENING UP A PREVIOUSLY RESTRICTED ECONOMIC SECTOR.

ENVIRONMENT

THE CURRENT STATUS OF MUNICIPAL CEMETERIES POINTS TO A POTENTIAL ENVIRONMENTAL CRISIS. IT IS UNTHINKABLE THAT A MODERN METROPOLITAN AREA DOES NOT HAVE ALTERNATIVES, OR A BACKUP PLAN FOR A CRITICAL SERVICE, SUCH AS A WELL-MANAGED CEMETERY.

SPATIAL

THE DISTRIBUTION OF FACILITIES THROUGHOUT THE METROPOLITAN AREA IS A HEALTHY PRINCIPLE, AS IT INTEGRATES USES AND ENSURES THAT FACILITIES ARE SITUATED WITHIN IN ACCESSIBLE DISTANCE FROM RESIDENTS. THE SPATIAL BALANCE IS BOUND TO BE DISTURBED BY THE CHANNELLING OF MOST BURIALS TO PARADYS ALONE. NOT ONLY DOES A CEMETERY FULFIL ITS INTENDED FUNCTION, BUT IT ALSO ACTS AS A PARK, LEADING TO THE GREENING OF THE CITY. IN THE SPECIFIC INSTANCE IT ALSO CREATES A WONDERFUL BUFFER, DIVIDING INDUSTRIAL FROM RESIDENTIAL USES.

HEIDEDAL AND BLOEMSPRUIT CEMETERIES CURRENTLY HAS NO BURIAL CAPACITY, AS THE EXISTING CEMETERY IS AT FULL CAPACITY. ACCORDING TO AN ARTICLE PUBLISHED ON SABREAKINGNEWS.CO.ZA ON 17 OCTOBER 2013, SOUTH AFRICA IS RUNNING OUT OF BURIAL SPACE FAST, AND MORE CEMETERIES NEED TO BE DEVELOPED. THE PROPOSED DEVELOPMENT WILL ADDRESS A LOCAL AND NATIONAL CONCERN.

5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES		Please explain
IT WAS MENTIONED THAT THE PROPOSED DEVELOPMENT IS SITUATED ON PROPERTIES THAT WERE PREVIOUSLY DEVELOPED AS INDUSTRIAL ERVEN. DUE TO CONDITIONS EXPLAINED THIS AREA WILL NOW BE REDEVELOPED AS A CEMETERY. THE SERVICES HAVE ALREADY BEEN INSTALLED FOR THE PURPOSES OF INDUSTRIAL USE; HENCE IT IS A COMPLETE OVER PROVISION FOR THE NEW DEMAND.			
6. Is this development 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 final Basic Assessment Report as Appendix I.)	N/a		Please explain
NO IMPLICATION ON MUNICIPAL INFRASTRUCTURE. ALL INFRASTRUCTURE WAS SUPPLIED BY THE DEVELOPER.			
7. Is this project part of a national programme to address an issue of national concern or importance?		No	Please explain
IT IS A PRIVATE INITIATIVE, ON PRIVATE LAND.			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES		Please explain
THE DISTRIBUTION OF FACILITIES THROUGHOUT THE METROPOLITAN AREA IS A HEALTHY PRINCIPLE, AS IT INTEGRATES USES AND ENSURES THAT FACILITIES ARE SITUATED WITHIN IN ACCESSIBLE DISTANCE FROM RESIDENTS. THE SPATIAL BALANCE IS BOUND TO BE DISTURBED BY THE CHANNELLING OF MOST BURIALS TO PARADYS ALONE. NOT ONLY DOES A CEMETERY FULFIL ITS INTENDED FUNCTION, BUT IT ALSO ACTS AS A PARK, LEADING TO THE GREENING OF THE CITY. IN THE SPECIFIC INSTANCE IT ALSO CREATES A WONDERFUL BUFFER, DIVIDING INDUSTRIAL FROM RESIDENTIAL USES. THE PROPOSED SITE IS FURTHERMORE HEAVILY DEGRADED DUE TO INVASIVE PLANT SPECIES AS WELL AS ILLEGAL REFUSE AND BUILDING RUBBLE DUMPING TAKING PLACE ON THE SITE. AS PER THE GEO-TECHNICAL AND GEOHYDROLOGICAL STUDIES THE UNDERLYING GEOMORPHOLOGY AND HYDROLOGY IS SUITED FOR THE PURPOSE OF A CEMETERY. THE SITE IS FURTHERMORE SITUATED WITHIN EASY ACCESS OF THE COMMUNITY.			
9. Is the development the best practicable environmental option for this land/site?	YES		Please explain
THE PROPOSED DEVELOPMENT IS A NEED WITHIN THE HEIDEDAL AND SURROUNDING AREAS AS THE CURRENT CEMETERIES IN HEIDEDAL AND BLOEMSPRUIT IS AT FULL CAPACITY. THE PROPOSED SITE IS HEAVILY DEGRADED DUE TO INVASIVE PLANT SPECIES AS WELL AS ILLEGAL DUMPING TAKING PLACE ON THE SITE. THE PROPOSED DEVELOPMENT WILL NOT NEGATIVELY IMPACT ON ANY SURROUNDING SENSITIVE AREAS.			

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES		Please explain
NO MAJOR IMPACTS WERE IDENTIFIED AS PART OF THIS REPORT. THE SITE IS CURRENTLY IN A VERY POLLUTED STATE DUE TO ILLEGAL DUMPING OF REFUSE AND BUILDING RUBBLE. THE EXISTING CEMETERIES WITHIN THE HEIDEDAL AND BLOEMSPRUIT AREAS ARE CURRENTLY AT FULL CAPACITY. THE PROPOSED DEVELOPMENT WILL CREATE ADEQUATE CAPACITY FOR BURIALS OF THE SURROUNDING AREAS FOR MANY YEARS TO COME.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?		NO	Please explain
12. Will any person's rights be negatively affected by the proposed activity/ies?		NO	Please explain
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		NO	Please explain
THE PROPOSED SITE IS SITUATED WITHIN THE URBAN EDGE OF BLOEMFONTEIN.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?		NO	Please explain

15. What will the benefits be to society in general and to the local communities?	Please explain

SOCIAL

MANY PEOPLE SEE CEMETERIES AS GLOOMY PLACES THAT HAVE LITTLE IMPACT ON THEIR LOCAL AREA. BUT THIS COULDN'T BE FURTHER FROM THE TRUTH. CEMETERIES BRING FAMILIES TOGETHER AND OFFER US AN INSIGHT INTO LOCAL HISTORY.

CEMETERIES ARE A PLACE OF SERENE REMEMBRANCE; THEY ALLOW US TO ENJOY TIME WITH LOVED ONES WITHOUT CONSIDERING THE DAILY RESPONSIBILITIES WE'RE FACING OR THE ACTIVITIES WE WANT TO TAKE ON LATER IN THE DAY. IT'S A QUIET PLACE IN WHICH WE CAN SIT WITH LOVED ONES IN PEACE AND DISCUSS OUR LIVES OR TO SIMPLY SIT QUIETLY AND REMEMBER THOSE THAT HAVE PASSED. A CEMETERY IS A SEPARATION FROM MODERN SOCIETY, AND ACTS AS A CALMING INFLUENCE ON RESIDENTS. UNFORTUNATELY, THIS IMAGE IS NOT PORTRAYED BY THE LARGE MUNICIPAL CEMETERIES.

CEMETERIES CAN ALSO HOLD DEEP SIGNIFICANCE FOR FAMILIES WITH LOVED ONES BURIED IN THE AREA. LOCAL CEMETERIES CAN HELP OFFER A SPACE THAT BRINGS COMFORT TO FAMILIES AS THEY STRUGGLE WITH THEIR GRIEF WHILE REMEMBERING LOVED ONES. IT CAN PROVIDE A SERENE ENVIRONMENT IN WHICH TO PLACE FLOWERS ON IMPORTANT OCCASIONS AND TO SPEND TIME SPEAKING ON A SPIRITUAL LEVEL WITH THE PERSON THAT HAS PASSED. IT'S A DEEPLY PERSONAL PROCESS THAT CAN HAVE MANY PSYCHOLOGICAL BENEFITS FOR THOSE WHO HAVE SUFFERED A RECENT DEATH IN THEIR FAMILY.

BEYOND THEIR FUNCTIONAL VALUE AS AN AREA IN WHICH TO PLACE PEOPLE AFTER THEY'VE PASSED, CEMETERIES CAN ACT AS A PLACE OF MEMORIAL. THEY CAN BECOME THE HOST OF RITUAL EVENTS FOR FAMILIES AND POST-FUNERAL EVENTS, ALLOWING THE FAMILY TO GIVE THEIR LOVED ONE A RESPECTFUL AND DIGNIFIED BURIAL PROCESS AT THE END OF THEIR LIFE.
CEMETERIES HOLD GREAT SIGNIFICANCE TO COMMUNITIES ACROSS THE COUNTRY, AND IT'S IMPORTANT TO REMEMBER THEIR VALUE THROUGHOUT OUR LIVES.

ECONOMIC

THE PROPOSED CEMETERY WILL CREATE ANOTHER OPTION TO THE OFFERING OF MMM. IT ASSISTS WITH THE CREATION OF AN OPEN MARKET FOR A DESIRED SERVICE/PRODUCT. BY DOING THIS IT IS FORESEEABLE THAT MORE COMPETITIVE RATES CAN BE OBTAINED FOR FUNERALS IN GENERAL, AS THE UNDERTAKERS WOULD BE SITUATED CLOSE BY.

SURROUNDING LAND USES AND URBAN STRUCTURE

CEMETERIES HAVE LONG BEEN A NORMAL URBAN FUNCTION COMPLETELY RECONCILABLE WITH RESIDENTIAL FUNCTIONS. FOR THOUSANDS OF YEARS BURIALS TOOK PLACE IN TOWN CENTRES AT CHURCHES AND OTHER RELIGIOUS BUILDINGS. HEIDEDAL ITSELF HAS A CEMETERY, WHICH IS WELL LOVED.

THE SPECIFIC URBAN STRUCTURE CAN ONLY BE ENHANCED BY THE CREATION OF A SOCIAL FACILITY ACTING AS A GREEN BUFFER BETWEEN EAST END AND HEIDEDAL.

PROPOSED DEVELOPMENT IS A NEED WITHIN THE HEIDEDAL AND SURROUNDING AREAS AS THE CURRENT CEMETERIES IN HEIDEDAL AND BLOEMSPRUIT IS AT FULL CAPACITY. THE PROPOSED DEVELOPMENT WILL CREATE ADEQUATE CAPACITY FOR BURIALS OF THE SURROUNDING AREAS.

16. Any other need and desirability considerations related to the proposed activity?	Please explain
-	
17. How does the project fit into the National Development Plan for 2030?	Please explain
-	
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.	
THROUGH THE UNDERTAKING OF A BASIC ASSESSMENT PROCESS BY A COMPETENT EAP, INFORMED BY GUIDELINES, THE CONSIDERATION OF IMPACTS AND ALTERNATIVES (ADVANTAGES AND DISADVANTAGES COUPLED THERETO) HAS BEEN MADE. MOREOVER, THE CONDUCTING OF PUBLIC PARTICIPATION AND SPECIALIST INVESTIGATIONS FORM PART OF THE PROCESS, WHILST MITIGATION MEASURES AND THE NEED AND DESIRABILITY OF THE PROPOSED PROJECT WERE INTERROGATED. THIS ENSURED THAT ALL PROVISIONS OF THE ACT WERE CONSIDERED AND AS SUCH INTEGRATED ENVIRONMENTAL MANAGEMENT WERE ACCOUNTED FOR. THE GENERAL OBJECTIVE OF INTEGRATED ENVIRONMENTAL MANAGEMENT IS TO: (A) PROMOTE THE INTEGRATION OF THE PRINCIPLES OF ENVIRONMENTAL MANAGEMENT AS SET OUT IN SECTION 2 OF NEMA INTO THE MAKING OF ALL DECISIONS WHICH MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT WAS COMPLIED WITH; (B) POTENTIAL IMPACTS ON THE ENVIRONMENT WAS IDENTIFIED, PREDICTED AND EVALUATED. 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 WAS TAKEN INTO ACCOUNT AND PROVIDED; (C) THE EFFECTS OF ACTIVITIES ON THE ENVIRONMENT RECEIVED ADEQUATE CONSIDERATION BEFORE ACTIONS WILL BE TAKEN IN CONNECTION WITH THEM; (D) ADEQUATE AND APPROPRIATE OPPORTUNITY FOR PUBLIC PARTICIPATION IN DECISIONS THAT MAY AFFECT THE ENVIRONMENT WERE PROVIDED; (E) CONSIDERATION WAS PROVIDED FOR THE ENVIRONMENTAL ATTRIBUTES IN MANAGEMENT AND DECISION-MAKING WHICH MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT; AND (F) 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 WAS IDENTIFIED AND EMPLOYED.	

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

THROUGH THE UNDERTAKING OF A BASIC ASSESSMENT PROCESS BY A COMPETENT EAP, INFORMED BY GUIDELINES, THE CONSIDERATION OF IMPACTS AND ALTERNATIVES (ADVANTAGES AND DISADVANTAGES COUPLED THERETO) HAS BEEN MADE. MOREOVER, THE CONDUCTING OF A PUBLIC PARTICIPATION PROCESS AND SPECIALIST INVESTIGATIONS FORMED PART OF THIS BASIC ASSESSMENT PROCESS, WHILST MITIGATION MEASURES AND THE NEEDS AND DESIRABILITY OF THE PROPOSED PROJECT WERE INTERROGATED. THIS ENSURED THAT ALL PROVISIONS OF THE ACT WERE CONSIDERED AND AS SUCH INTEGRATED ENVIRONMENTAL MANAGEMENT WERE ACCOUNTED FOR AS FOLLOW:

1. ENVIRONMENTAL MANAGEMENT MUST PLACE PEOPLE AND THEIR NEEDS AT THE FOREFRONT OF ITS CONCERN, AND SERVE THEIR PHYSICAL, PSYCHOLOGICAL, DEVELOPMENTAL, CULTURAL HERITAGE AND SOCIAL INTERESTS EQUITABLY.

THE GOAL OF THIS BA IS TO IDENTIFY AND MITIGATE POTENTIAL SOCIO-ECONOMIC IMPACTS IN ORDER TO MEET THE TERMS OF SECTION 24 OF THE CONSTITUTION.

2. DEVELOPMENT MUST BE SOCIALLY, ENVIRONMENTALLY AND ECONOMICALLY SUSTAINABLE.

THE OVERALL GOAL OF THIS BA IS TO PREDICT, IDENTIFY AND MANAGE POTENTIAL POSITIVE AND NEGATIVE IMPACTS IN THE SOCIO-ECONOMIC, CULTURAL-HERITAGE AND BIOPHYSICAL ENVIRONMENTS IN ORDER TO MEET THE NEEDS OF PRESENT GENERATIONS WITHOUT COMPROMISING THE NEEDS OF FUTURE GENERATIONS WHICH WILL GIVE EFFECT TO SUSTAINABLE DEVELOPMENT.

3. (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 REUSED 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.

AN ENVIRONMENTAL MANAGEMENT PROGRAM REPORT (EMP-R) WAS COMPILED TO MITIGATE AND MANAGE ALL ACTIVITIES DURING THE PLANNING, CONSTRUCTION AND OPERATIONAL PHASES.

(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.

ALL ASPECTS, INCLUDING SOCIO-ECONOMIC, CULTURAL-HERITAGE AND BIOPHYSICAL WAS EVALUATED AND ASSESSED IN ORDER TO MINIMIZE POTENTIAL NEGATIVE IMPACTS WHICH WILL GIVE EFFECT TO INTEGRATED ENVIRONMENTAL MANAGEMENT, AS SET OUT IN CHAPTER 5 OF NEMA, 1998.

(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.

A PUBLIC PARTICIPATION PROCESS WILL BE UNDERTAKEN IN TERMS OF SECTION 41 OF THE NEMA EIA REGULATIONS (GN R. 982), WHICH CAME INTO EFFECT ON 4 DECEMBER 2014, IN ORDER TO GIVE EFFECT TO SECTION 32 OF THE CONSTITUTION IN SUCH A WAY THAT ADHERENCE IS GIVEN TO SECTION 24 OF THE CONSTITUTION.

(D) EQUITABLE ACCESS TO ENVIRONMENTAL RESOURCES, BENEFITS AND SERVICES TO MEET BASIC HUMAN NEEDS AND ENSURE HUMAN WELLBEING MUST BE PURSUED AND SPECIAL MEASURES MAY BE TAKEN TO ENSURE ACCESS THERETO BY CATEGORIES OF PERSONS DISADVANTAGED BY UNFAIR DISCRIMINATION.

THIS WILL BE TAKEN INTO ACCOUNT DURING THE OPERATIONAL PHASE OF THE ACTIVITY.

(E) RESPONSIBILITY FOR THE ENVIRONMENTAL HEALTH AND SAFETY CONSEQUENCES OF A POLICY, PROGRAMME, PROJECT, PRODUCT, PROCESS, SERVICE OR ACTIVITY EXISTS THROUGHOUT ITS LIFE CYCLE.

THE EMPR WILL BE APPLICABLE THROUGHOUT THE LIFECYCLE OF THE PROJECT.

(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.

A PUBLIC PARTICIPATION PROCESS WILL BE UNDERTAKEN IN TERMS OF SECTION 41 OF THE NEMA EIA REGULATIONS (GN R. 982), WHICH CAME INTO EFFECT ON 4 DECEMBER 2014, IN ORDER TO GIVE EFFECT TO SECTION 32 OF THE CONSTITUTION IN SUCH A WAY THAT ADHERENCE IS GIVEN TO SECTION 24 OF THE CONSTITUTION.

(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.

DESTEA'S DECISION MAKING PROCESS HAS TO BE IN ACCORDANCE WITH THE ABOVE.

(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.

WHERE FEASIBLE EFFORTS SHOULD BE MADE TO EMPLOY LOCAL CONTRACTORS THAT ARE COMPLIANT WITH BROAD BASED BLACK ECONOMIC.

EMPOWERMENT (BBBEE) CRITERIA;

(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.

THIS BAR DOES GIVE EFFECT TO SECTION 5 OF NEMA WHEREBY ALL SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS OF ACTIVITIES WERE CONSIDERED, ASSESSED AND EVALUATED.

(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.

HUMAN RIGHTS WILL BE TAKEN INTO ACCOUNT DURING ALL PHASES OF THE PROPOSED PROJECT. THE PROPOSED PROJECT WILL CONTRIBUTE TO SERVICE DELIVERY.

(K) DECISIONS MUST BE TAKEN IN AN OPEN AND TRANSPARENT MANNER, AND ACCESS TO INFORMATION MUST BE PROVIDED IN ACCORDANCE WITH THE LAW.

THE DECISION WILL TAKE PLACE IN AN OPEN AND FAIR MANNER AND GIVE EFFECT TO SECTION 32 OF THE CONSTITUTION. I&AP'S WILL BE NOTIFIED OF THE DECISION IN TERMS OF THE REQUIREMENTS AS SET OUT IN SECTION 41 OF THE NEMA EIA REGULATIONS (GN R. 982), 2014.

(L) THERE MUST BE INTERGOVERNMENTAL COORDINATION AND HARMONISATION OF POLICIES, LEGISLATION AND ACTIONS RELATING TO THE ENVIRONMENT.

ALL GOVERNMENTAL AUTHORITIES WILL BE CONSIDERED DURING THE BA PROCESS TO GIVE THEIR INPUTS ON THE PROJECT.

(M) ACTUAL OR POTENTIAL CONFLICTS OF INTEREST BETWEEN ORGANS OF STATE SHOULD BE RESOLVED THROUGH CONFLICT RESOLUTION PROCEDURES.

ACTUAL OR POTENTIAL CONFLICTS OF INTEREST BETWEEN ORGANS OF STATE SHOULD/WILL BE RESOLVED THROUGH DEPARTMENTAL CONFLICT RESOLUTION PROCEDURES.

(N) GLOBAL AND INTERNATIONAL RESPONSIBILITIES RELATING TO THE ENVIRONMENT MUST BE DISCHARGED IN THE NATIONAL INTEREST.

SOUTH AFRICA IS CURRENTLY EXPERIENCING A SHORTFALL IN BURIAL SPACE, THUS THE PROPOSED PROJECT WILL ADDRESS A NATIONAL CONCERN AND CONTRIBUTE TO SERVICE INFRASTRUCTURE. ACCORDINGLY, GLOBAL AND INTERNATIONAL RESPONSIBILITIES RELATING TO THE ENVIRONMENT WILL BE DISCHARGED IN THE NATIONAL INTEREST.

(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.

THROUGH THE APPOINTMENT OF VARIOUS SPECIALISTS, MITIGATION MEASURES HAVE BEEN DRAWN UP TO ENSURE THAT THE PROPOSED PROJECT DOES NOT HARM THE ENVIRONMENT.

(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.

AN EMPR WAS COMPILED IN ORDER TO PREVENT OR MINIMIZE ANY POTENTIAL NEGATIVE IMPACTS TO THE ENVIRONMENT. IT WILL BE THE RESPONSIBILITY OF THE APPLICANT AND CONTRACTOR TO ADHERE TO ALL MEASURES SET OUT IN THE EMPR, IN ORDER TO GIVE EFFECT TO SECTION 28 (1) OF NEMA.

(Q) THE VITAL ROLE OF WOMEN AND YOUTH IN ENVIRONMENTAL MANAGEMENT AND DEVELOPMENT MUST BE RECOGNISED AND THEIR FULL PARTICIPATION THEREIN MUST BE PROMOTED.

THE RECRUITMENT SELECTION PROCESS SHOULD SEEK TO PROMOTE GENDER EQUALITY AND THE EMPLOYMENT OF WOMAN WHEREVER POSSIBLE, PARTICULARLY FOR LESS LABOUR INTENSIVE WORK.

(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.

A SENSITIVITY MAP CONTAINING ALL VULNERABLE VEGETATION, WATER COURSES AND ECOSYSTEMS WERE PREPARED IN ORDER TO DETERMINE THAT THE PROPOSED PROJECT WILL HAVE NO NEGATIVE IMPACT THEREON.

FROM THE ABOVE MENTIONED IT IS EVIDENT THAT THE PRINCIPLES OF NEMA HAVE BEEN CONSIDERED DURING THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)	THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REGULATIONS, 2017 PROMULGATED IN TERMS OF CHAPTER 5 OF THE NEMA PROVIDE FOR THE CONTROL OF CERTAIN ACTIVITIES THAT ARE LISTED IN GOVERNMENT NOTICE REGULATIONS NO. (GN R) NO. R327, R325 AND R324. ACTIVITIES LISTED IN THESE NOTICES MUST COMPLY WITH THE REGULATORY REQUIREMENTS LISTED IN GN R NO. R326, WHICH PROHIBITS SUCH ACTIVITIES UNTIL WRITTEN AUTHORISATION IS OBTAINED FROM THE COMPETENT AUTHORITY. SUCH ENVIRONMENTAL AUTHORISATION, WHICH MAY BE GRANTED SUBJECT TO CONDITIONS, WILL ONLY BE	DEPARTMENT OF ENVIRONMENTAL AFFAIRS	2017

	CONSIDERED ONCE THERE HAS BEEN COMPLIANCE WITH THE EIA REGULATIONS, 2017. GN R NO. 326 THAT SETS OUT THE PROCEDURE AND DOCUMENTATION THAT NEED TO BE COMPILED WITH UNDERTAKING A BASIC ASSESSMENT REPORT. NEMA PRINCIPLES AND OBJECTIVES HAVE BEEN TAKEN INTO CONSIDERATION IN RESPECT OF: THE IDENTIFICATION OF ENVIRONMENTAL IMPACTS, THE ASSESSMENT OF THEIR SIGNIFICANCE AND NEED TO MITIGATE; PUBLIC CONSULTATION PROCESSES FOLLOWED AS PART OF THE BASIC ASSESSMENT.		
ENVIRONMENT CONSERVATION ACT 1989 (ACT NO. 73 OF 1989)	CONSERVATION OF THE ENVIRONMENT WHERE THE CEMETERY IS PLANNED.	DEPARTMENT OF ENVIRONMENTAL AFFAIRS	1989
EIA REGULATIONS AS AMENDED IN 2017 GN R 327	ACTIVITY 23: THE DEVELOPMENT OF CEMETERIES OF 2500 SQUARE METRES OR MORE IN SIZE. ACTIVITY 27: THE CLEARANCE OF AN AREA OF 1 HECTARES OR MORE, BUT LESS THAN 20 HECTARES OF INDIGENOUS VEGETATION, EXCEPT WHERE SUCH CLEARANCE OF INDIGENOUS VEGETATION IS REQUIRED FOR – (1) THE UNDERTAKING OF A LINEAR ACTIVITY; OR (II) MAINTENANCE PURPOSES UNDERTAKEN IN ACCORDANCE WITH A MAINTENANCE MANAGEMENT PLAN.	DEPARTMENT OF ENVIRONMENTAL AFFAIRS	2017
NATIONAL WATER ACT (ACT 36 OF 1998)	GENERAL AUTHORISATION "REGULATED AREA OF A WATERCOURSE" FOR SECTION 21(C) OR (I) OF THE ACT WATER USES IN TERMS OF THIS NOTICE MEANS: (A) THE OUTER EDGE OF THE 1 IN 100 YEAR FLOOD LINE AND /OR DELINEATED RIPARIAN HABITAT, WHICHEVER IS THE GREATEST DISTANCE, MEASURED FROM THE MIDDLE OF THE WATERCOURSE OF A RIVER, SPRING, NATURAL CHANNEL, LAKE	DEPARTMENT OF WATER AFFAIRS	1998

	OR DAM; (B) IN THE ABSENCE OF A DETERMINED 1 IN 100 YEAR FLOOD LINE OR RIPARIAN AREA THE AREA WITHIN 100M FROM THE EDGE OF A WATERCOURSE WHERE THE EDGE OF THE WATERCOURSE IS THE FIRST IDENTIFIABLE ANNUAL BANK FILL FLOOD BENCH (SUBJECT TO COMPLIANCE TO SECTION 144 OF THE ACT); OR (C) A 500 M RADIUS FROM THE DELINEATED BOUNDARY (EXTENT) OF ANY WETLAND OR PAN.		
NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (ACT 10 OF 2004)	LISTED INVASIVE ALIEN SPECIES IN THE REGULATIONS (GNR 506, 507, 508, 509 OF 2013) PROMULGATED IN TERMS OF THIS ACT THAT MAY OCCUR ON THE PROPERTY MUST BE CONTROLLED / ERADICATED AS SPECIFIED.	SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE (SANBI)	2004
NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)	LISTS DEVELOPMENT ACTIVITIES THAT REQUIRE AUTHORISATION FROM RELEVANT HERITAGE AUTHORITIES.	SAHRA	1999
HEALTH ACT, 2003 (ACT NO. 61 OF 2003)	REGULATIONS RELATING TO THE MANAGEMENT OF HUMAN REMAINS.	DEPARTMENT OF HEALTH	2003

MORE DETAILED DESCRIPTION OF APPLICABLE LEGISLATION:

NEMA AND ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS

THE PROPOSED PROJECT IS A LISTED ACTIVITY IN TERMS OF SECTIONS 24(2) AND 24(D) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) (NEMA) (AS AMENDED). THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REGULATIONS, 2017 PROMULGATED IN TERMS OF CHAPTER 5 OF THE NEMA PROVIDE FOR THE CONTROL OF CERTAIN ACTIVITIES THAT ARE LISTED IN GOVERNMENT NOTICE REGULATIONS NO. (GN R) NO. R327, R325 AND R324. ACTIVITIES LISTED IN THESE NOTICES MUST COMPLY WITH THE REGULATORY REQUIREMENTS LISTED IN GN R NO. R326, WHICH PROHIBITS SUCH ACTIVITIES UNTIL WRITTEN AUTHORISATION IS OBTAINED FROM THE COMPETENT AUTHORITY. SUCH ENVIRONMENTAL AUTHORISATION, WHICH MAY BE GRANTED SUBJECT TO CONDITIONS, WILL ONLY BE CONSIDERED ONCE THERE HAS BEEN COMPLIANCE WITH THE EIA REGULATIONS, 2017. GN R NO. 326 SETS OUT THE PROCEDURE AND DOCUMENTATION THAT NEED TO BE COMPILED WITH UNDERTAKING A BASIC ASSESSMENT REPORT.

GOVERNMENT NOTICE R.327 OF 2017: LISTING NOTICE 1 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998)

ACTIVITY 23: THE DEVELOPMENT OF CEMETERIES OF 2500 SQUARE METRES OR MORE IN SIZE.
ACTIVITY 27: THE CLEARANCE OF AN AREA OF 1 HECTARES OR MORE, BUT LESS THAN 20 HECTARES OF INDIGENOUS VEGETATION, EXCEPT 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.

CONSTITUTION OF SOUTH AFRICA (ACT 108 OF 1996)

IN THE SIMPLEST TERMS, THE REGULATIONS AIM TO MEET THE REQUIREMENTS OF THE CONSTITUTION (ACT NO. 108 OF 1996), MOST SPECIFICALLY SECTION 24, WHICH INDICATE THAT ALL CITIZENS OF SOUTH AFRICA HAVE THE RIGHT:

a) TO AN ENVIRONMENT THAT IS NOT HARMFUL TO THEIR HEALTH OR WELL-BEING; AND;
b) TO HAVE THE ENVIRONMENT PROTECTED, FOR THE BENEFIT OF PRESENT AND FUTURE GENERATIONS, THROUGH REASONABLE LEGISLATIVE AND OTHER MEASURES THAT:

   i. PREVENT POLLUTION AND ECOLOGICAL DEGRADATION;
   ii. PROMOTE CONSERVATION; AND;
   iii. SECURE ECOLOGICALLY SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES WHILE PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT."

ENVIRONMENTAL CONSERVATION ACT (ECA), 1989 (ACT 73 OF 1989)

THE CONSTITUTION AS AN OVER-ARCHING LAW WAS BOLSTERED BY THE PREVIOUS ENVIRONMENT CONSERVATION ACT (ACT NO. 73 OF 1989) AND ITS RELATED ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REGULATIONS (GOVERNMENT NOTICE NO. R. 1182 & 1183 OF 5TH SEPTEMBER 1997; AMENDMENT: GN NO. R. 670 & 672 OF 10TH MAY 2002). THE AIM OF THE ECA WAS:

"TO PROVIDE FOR THE EFFECTIVE PROTECTION AND CONTROLLED UTILISATION OF THE ENVIRONMENT AND FOR MATTERS INCIDENTAL THERETO."

THE ECA AND ITS RELATED REGULATIONS, THEREFORE, PROVIDED SPECIFIC MEASURES BY WHICH THE ABOVE AIM OF THE ECA COULD BE MET, INCLUDING PROVISION OF THE SO-CALLED "LISTED ACTIVITIES" LINKED TO AN ADMINISTRATIVE PROCESS TO ENSURE THAT DEVELOPMENT WAS CONTROLLED IN A SUSTAINABLE MANNER.
NOTE THAT WITH THE COMMENCEMENT OF THE NEW NEMA REGULATIONS THE PREVIOUS ECA REGULATIONS HAVE BEEN REPEALED.

NATIONAL WATER ACT, 1998 (ACT 36 OF 1998)

THE NATIONAL WATER ACT AIMS TO PROVIDE MANAGEMENT OF THE NATIONAL WATER RESOURCES TO ACHIEVE SUSTAINABLE USE OF WATER FOR THE BENEFIT OF ALL WATER USERS. THIS REQUIRES THAT THE QUALITY OF WATER RESOURCES IS PROTECTED AS WELL AS INTEGRATED MANAGEMENT OF WATER RESOURCES WITH THE DELEGATION OF POWERS TO INSTITUTIONS AT THE REGIONAL OR CATCHMENT LEVEL. THE PURPOSE OF THE ACT IS TO ENSURE THAT THE NATION'S WATER RESOURCES ARE PROTECTED, USED, DEVELOPED, CONSERVED, MANAGED AND CONTROLLED IN WAYS, WHICH TAKE INTO ACCOUNT:

- MEETING THE BASIC HUMAN NEEDS OF PRESENT AND FUTURE GENERATION;
- PROMOTING THE EFFICIENT, SUSTAINABLE AND BENEFICIAL USE OF WATER IN THE PUBLIC INTEREST;
- FACILITATING SOCIAL AND ECONOMIC DEVELOPMENT;
- PROTECTING AQUATIC AND ASSOCIATED ECOSYSTEMS AND THEIR BIOLOGICAL DIVERSITY;
- REDUCING AND PREVENTING POLLUTION AND DEGRADATION OF WATER RESOURCES; AND
- MEETING INTERNATIONAL OBLIGATIONS.

THE APPLICANT SHOULD, AT ALL TIMES TAKE NOTE OF THE POLLUTION CONTROL PROVISIONS OF SECTION 19(1) OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998), WHICH STATES THAT; 19(1) AN OWNER OF LAND, A PERSON IN CONTROL OF LAND OR A PERSON WHO OCCUPIES OR USES THE LAND ON WHICH – (A) ANY ACTIVITY OR PROCESS IS OR PERFORMED OR UNDERTAKEN; OR (B) ANY OTHER SITUATION EXISTS WHICH CAUSES, HAS CAUSED OR IS LIKELY TO

CAUSE POLLUTION OF A WATER RESOURCE, MUST TAKE ALL REASONABLE MEASURES TO PREVENT ANY SUCH POLLUTION OF A WATER RESOURCE, FROM OCCURRING, CONTINUING OR RECURRING.

THE ACT FURTHER DESCRIBES A NUMBER OF WATER USES AND REQUIRES THAT A WATER USE LICENSE HAVE TO BE OBTAINED FOR THE SPECIFIED WATER USES.

THE PURPOSES OF ENSURING THAT ALL PERSONS WHO MIGHT BE AFFECTED HAVE ACCESS TO INFORMATION REGARDING POTENTIAL FLOOD HAZARDS, NO PERSON MAY ESTABLISH A TOWNSHIP UNLESS THE LAYOUT PLAN SHOWS, IN A FORM ACCEPTABLE TO THE LOCAL AUTHORITY CONCERNED, LINES INDICATING THE MAXIMUM LEVEL LIKELY TO BE REACHED BY FLOODWATER ON AVERAGE ONCE IN EVERY 100 YEARS. A STUDY MUST BE CONDUCTED TO ENSURE THAT FLOOD LINES ARE INDICATED.

IT MUST BE NOTED THAT THE NATIONAL WATER ACT (ACT 36 OF 1998) STATES THE FOLLOWING REGARDING DEVELOPMENT WITHIN THE 1:100 YEAR-FLOOD LINE OF ANY STREAM OR RIVER (THOMPSON, 2006):

- SECTION 21(C): IMPEDING OR DIVERTING THE FLOW OF WATER IN WATERCOURSES (INCLUDING ALTERATION OF THE HYDRAULIC CHARACTERISTICS OF FLOOD EVENTS) REQUIRES LICENSING ACCORDING TO THE ACT.
- SECTION 21(I): ANY ACTION THAT MAY ALTER THE BED, BANKS, COURSES OR CHARACTERISTICS OF WATERCOURSES (INCLUDING FLOOD EVENTS) REQUIRES LICENSING ACCORDING TO THE ACT, INCLUDING:
    - WIDENING OR STRAIGHTENING OF THE BED OR BANKS OF A RIVER TO ALLOW FOR THE CONSTRUCTION OF A BRIDGE, SPORTS GROUND OR HOUSING DEVELOPMENT.
    - ALTERING THE COURSE OF A RIVER PARTIALLY OR COMPLETELY (I.E.: RIVER DIVERSION) TO BE ABLE TO USE OR DEVELOP THE AREA WHERE THE WATERCOURSE ORIGINALLY WAS.

GENERAL AUTHORISATION

"REGULATED AREA OF A WATERCOURSE" FOR SECTION 21(C) OR (I) OF THE ACT WATER USES IN TERMS OF THIS NOTICE MEANS:

(A) THE OUTER EDGE OF THE 1 IN 100 YEAR FLOOD LINE AND /OR DELINEATED RIPARIAN HABITAT, WHICHEVER IS THE GREATEST DISTANCE, MEASURED FROM THE MIDDLE OF THE WATERCOURSE OF A RIVER, SPRING, NATURAL CHANNEL, LAKE OR DAM;

(B) IN THE ABSENCE OF A DETERMINED 1 IN 100 YEAR FLOOD LINE OR RIPARIAN AREA THE AREA WITHIN 100M FROM THE EDGE OF A WATERCOURSE WHERE THE EDGE OF THE WATERCOURSE IS THE FIRST IDENTIFIABLE ANNUAL BANK FILL FLOOD BENCH (SUBJECT TO COMPLIANCE TO SECTION 144 OF THE ACT); OR (C) A 500 M RADIUS FROM THE DELINEATED BOUNDARY (EXTENT) OF ANY WETLAND OR PAN.

DWS WAS CONSULTED REGARDING THE QUARRY DAM SITUATED TO THE SOUTH OF THE PROPOSED CEMETERY. DWS INDICATED THAT NO AUTHORIZATION IS REQUIRED AS THEY DO NOT SEE THE DAM AS A WETLAND.

NATIONAL ENVIRONMENTAL BIODIVERSITY ACT (ACT 10 OF 2004)

THE NATIONAL ENVIRONMENTAL MANAGEMENT BIODIVERSITY ACT (ACT NO. 10 OF 2004), AIMS TO PROVIDE FOR THE MANAGEMENT AND CONSERVATION OF SOUTH AFRICA'S BIODIVERSITY WITHIN THE FRAMEWORK OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998; THE PROTECTION OF SPECIES AND ECOSYSTEMS THAT WARRANT NATIONAL PROTECTION; THE SUSTAINABLE USE OF INDIGENOUS BIOLOGICAL RESOURCES; THE FAIR AND EQUITABLE SHARING OF BENEFITS ARISING FROM BIO PROSPECTING INVOLVING INDIGENOUS BIOLOGICAL RESOURCES; THE ESTABLISHMENT AND FUNCTIONS OF A SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE; AND FOR MATTERS CONNECTED THEREWITH.

ACCORDING TO THE NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (10/2004): ALIEN AND INVASIVE SPECIES REGULATIONS, 2014, ALL DECLARED ALIENS MUST BE EFFECTIVELY CONTROLLED. IN TERMS OF THIS ACT 198 ALIEN SPECIES WERE LISTED AS DECLARED WEEDS AND INVADERS.

THE DIVERSITY OF ECOLOGICAL PROCESSES FOR THE PROPOSED SITE IS TO BE DETERMINED THROUGH THE SPECIALIST STUDIES TO BE CONDUCTED. THE OUTCOME/RECOMMENDATIONS OF THE SPECIALIST STUDIES WILL DETERMINE THE MANNER IN WHICH THE BIODIVERSITY ON SITE IS TO BE MANAGED, AND WHETHER THE ECOLOGICAL ELEMENTS ON SITE NEED TO FORM PART OF A GREATER ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE REGION.

NATIONAL HERITAGE RESOURCES ACT 1999 (ACT 25 OF 1999)

THE NATIONAL HERITAGE RESOURCES ACT LEGISLATES THE NECESSITY FOR CULTURAL AND HERITAGE IMPACT ASSESSMENT IN AREAS EARMARKED FOR DEVELOPMENT, WHICH EXCEED 0.5 HA. THE ACT MAKES PROVISION FOR THE POTENTIAL DESTRUCTION TO EXISTING SITES, PENDING THE ARCHAEOLOGIST'S RECOMMENDATIONS THROUGH PERMITTING PROCEDURES. SECTION 38 OF THE NHRA MAKES PROVISION FOR DEVELOPERS TO APPLY FOR A PERMIT BEFORE ANY HERITAGE RESOURCE MAY BE DAMAGED OR DESTROYED. PERMITS ARE ADMINISTERED BY THE SOUTH AFRICAN HERITAGE RESOURCES AGENCY (SAHRA).

THE ACT DEFINES CULTURAL SIGNIFICANCE, ARCHAEOLOGICAL AND PALEONTOLOGICAL SITES AND MATERIAL (SECTION 35), HISTORICAL SITES AND STRUCTURES (SECTION 34), GRAVES AND BURIAL SITES (SECTION 36) THAT FALLS UNDER ITS JURISDICTION. ARCHAEOLOGICAL SITES AND MATERIAL ARE GENERALLY THOSE RESOURCES OLDER THAN A HUNDRED YEARS, WHILE SECTION 34 ALSO PROTECTS STRUCTURES AND CULTURAL LANDSCAPES OLDER THAN 60 YEARS, INCLUDING GRAVESTONES. PROCEDURES FOR MANAGING GRAVE AND BURIAL GROUNDS ARE CLEARLY SET OUT IN SECTION 36 OF THE NHRA. GRAVES OLDER THAN 100 YEARS ARE LEGISLATED AS ARCHAEOLOGICAL SITES AND MUST BE DEALT WITH ACCORDINGLY.

THE SIZE OF THE APPLICATION SITE WARRANTS THAT A SPECIALIST HERITAGE ASSESSMENT BE CONDUCTED. DR L ROSSOUW WAS APPOINTED BY THE CLIENT TO CONDUCT THE HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED SITE. THIS REPORT WILL FORM PART OF THE EIA REPORT, AND THE FINDINGS OF THE SPECIALIST INPUT WILL BE REPORTED UPON IN DETAIL.

NATIONAL ENVIRONMENTAL MANAGEMENT PROTECTED AREAS ACT, 2003 (ACT NO. 57 OF 2003)

THE PURPOSE OF THIS ACT IS TO PROVIDE FOR THE PROTECTION, CONSERVATION AND MANAGEMENT OF ECOLOGICALLY VIABLE AREAS REPRESENTATIVE OF SOUTH AFRICA'S BIOLOGICAL DIVERSITY AND ITS NATURAL LANDSCAPES.

THE DIVERSITY OF ECOLOGICAL PROCESSES FOR THE APPLICATION SITES IS TO BE DETERMINED THROUGH THE SPECIALIST STUDIES TO BE CONDUCTED. THE OUTCOME/RECOMMENDATIONS OF THE SPECIALIST STUDIES WILL DETERMINE THE MANNER IN WHICH THE BIODIVERSITY ON SITE IS TO BE MANAGED, AND WHETHER THE ECOLOGICAL ELEMENTS ON SITE NEED TO FORM PART OF A GREATER ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE REGION.

NO PROTECTED AREA OCCURS ON OR CLOSE TO THE PROPOSED SITE.

ATMOSPHERIC POLLUTION PREVENTION ACT, 1965 (ACT NO. 45 OF 1965)

THE PURPOSE OF THIS ACT IS TO PROVIDE FOR THE PREVENTION OF THE POLLUTION OF THE ATMOSPHERE, FOR THE ESTABLISHMENT OF A NATIONAL AIR POLLUTION ADVISORY COMMITTEE, AND FOR MATTERS INCIDENTAL THERETO.

NATIONAL BUILDING REGULATIONS AND BUILDING STANDARDS ACT 103 OF 1997

PROVIDES TO THE PROMOTION OF UNIFORMITY IN THE LAW RELATING TO THE ERECTION OF BUILDINGS IN THE AREAS OF LOCAL AUTHORITIES AND PRESCRIBES BUILDING STANDARDS. ALSO PROVIDES THAT THE OWNER OF LAND ON WHICH ANY EXCAVATION WORK IS IN PROGRESS MUST TAKE PRECAUTIONS TO LIMIT THE AMOUNT OF DUST GENERATED IN THE AREA. ALSO PROHIBITS THE GENERATION OF NOISE ON CERTAIN DAYS THAT WOULD UNREASONABLY DISTURB THE NEIGHBOURHOOD.

NATIONAL HEALTH ACT, 2003 (ACT NO 63 OF 2003)

- REGULATIONS RELATING TO THE MANAGEMENT OF HUMAN REMAINS MUST BE ADHERED TO.
    - BURIAL SITES AND BURIALS
        - ALL BURIALS MUST COMPLY WITH THE FOLLOWING ENVIRONMENTAL REQUIREMENTS:
            - BE LOCATED OUTSIDE THE 1:100 YEAR FLOODLINE;
            - BE LOCATED AT LEAST 350M FROM GROUND WATER RESOURCES FOR DRINKING PURPOSES AND AT LEAST 500M FROM THE NEAREST HABITABLE BUILDING.
            - FOR A PREFERRED BURIAL SITE WITH SOIL OF SANDY-CLAY MIX OF LOW POROSITY AND A SMALL AND FINE GRAIN TEXTURE, THE WATER TABLE SHOULD BE AT LEAST 2.5M DEEP IN ORDER TO ALLOW FOR TRADITIONAL GRAVE DEPTH OF SIX FEET (1.8M)
            - FOR AREAS WITH HIGHER WATER TABLES, THE LOCAL GOVERNMENT MAY DETERMINE A REASONABLE DEPTH WITH ADDITIONAL WALLING RECOMMENDATIONS TO PROTECT UNDERGROUND WATER; AND
            - THE COVERING SOIL SHALL NOT BE LESS THAN 1M, SHOULD 2 BODIES BE BURIED IN THE SAME GRAVE, 300MM OF SOIL SHALL BE MAINTAINED BETWEEN THE COFFINS.

THE PLANNED CEMETERY IS NOT 500M FROM NEAREST HABITABLE BUILDING. THE CLIENT WILL APPLY FOR THE RELAXATION OF DISTANCES FROM RESIDENTIAL AREAS AND WATER BODIES AS CONTEMPLATED IN SECTION 2 (2) (A) OF THE NATIONAL HEALTH ACT REGULATIONS, NO 61 OF 2003.

HAZARDOUS SUBSTANCES ACT 15 OF 1973

THE HAZARDOUS SUBSTANCES ACT 15 OF 1973 PROVIDES FOR THE CONTROL OF SUBSTANCES WHICH MAY CAUSE INJURY OR ILL-HEALTH TO OR DEATH OF HUMAN BEINGS BY REASON OF THEIR TOXIC, CORROSIVE, IRRITANT, STRONGLY SENSITISING OR FLAMMABLE NATURE OR THE GENERATION OF PRESSURE THEREBY IN CERTAIN CIRCUMSTANCES, AND FOR THE CONTROL OF CERTAIN ELECTRONIC PRODUCTS; TO PROVIDE FOR THE DIVISION OF SUCH SUBSTANCES OR PRODUCTS INTO GROUPS IN RELATION TO THE DEGREE OF DANGER; TO PROVIDE FOR THE PROHIBITION AND CONTROL OF THE IMPORTATION, MANUFACTURE, SALE, USE, OPERATION, APPLICATION, MODIFICATION, DISPOSAL OR DUMPING OF SUCH SUBSTANCES AND PRODUCTS; AND TO PROVIDE FOR MATTERS CONNECTED THEREWITH (HENDERSON, 1996).

WHERE HAZARDOUS SUBSTANCES ARE USED DURING CONSTRUCTION AND OPERATION, THE HAZARDOUS SUBSTANCES ACT MUST BE STRICTLY APPLIED. INCIDENT MANAGEMENT PLANS MUST INCLUDE MEASURES OF LIMITING DANGERS OF HAZARDOUS SUBSTANCES IN THE EVENT OF TRANSPORT VEHICLE SPILLAGES ALONG THE ROUTE.

OTHER IMPORTANT LEGISLATION, POLICIES, GUIDELINES, FRAMEWORK PLANS, REGULATIONS

THIS INCLUDES THE FOLLOWING:

- MMM CEMETERY BY-LAWS 2016.

- SALGA – GOOD PRACTISES IN CEMETERIES MANAGEMENT 2016.
- NATIONAL NORMS AND STANDARDS FOR DOMESTIC WATER AND SANITATION SERVICES OF 8 SEPTEMBER 2017 NOTICE NO. 982 OF THE NATIONAL WATER ACT (36/1998).
- GUIDELINE INVOLVING A SPECIALIST IN THE EIA PROCESS, 2005 - ALL SPECIALIST STUDIES WILL BE CONDUCTED IN ACCORDANCE WITH THE GUIDELINE AS COMPILED BY THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING.
- GUIDELINE ENVIRONMENTAL MANAGEMENT PLAN, 2005 - THE ENVIRONMENTAL MANAGEMENT PLAN HAS BEEN COMPILED IN ACCORDANCE WITH APPENDIX 4 OF GOVERNMENT NOTICE 326 AND THE GUIDELINE AS COMPILED BY THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING. ALL LEGISLATIVE REQUIREMENTS HAVE BEEN MET.
- GUIDELINE INVOLVING A HYDROLOGIST IN AN EIA PROCESS, 2005 - THE SPECIALIST STUDY HAS BEEN CONDUCTED IN ACCORDANCE WITH THE GUIDELINE AS COMPILED BY THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING.
- GUIDELINE INVOLVING A HERITAGE SPECIALIST IN AN EIA PROCESS, 2005 - THE SPECIALIST STUDY HAS BEEN CONDUCTED IN ACCORDANCE WITH THE GUIDELINE AS COMPILED BY THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING.
- INTEGRATED DEVELOPMENT PLAN - IT WAS ENSURED THAT THE PROPOSED DEVELOPMENT IS IN LINE WITH THE INTEGRATED DEVELOPMENT OF THE LOCAL MUNICIPALITY IN WHO'S JURISDICTION THE DEVELOPMENT IS SITUATED.
- SPATIAL PLANNING AND LAND USE MANAGEMENT ACT OF 2013;
- MMM SPATIAL DEVELOPMENT FRAMEWORK - THIS IS TO ENSURE THAT ALL DEVELOPMENTS ARE IN LINE WITH MMM SPATIAL DEVELOPMENT FRAMEWORK. THE PROPOSED DEVELOPMENT WILL NOT HAVE A NEGATIVE IMPACT ON THE SPATIAL PLANNING STRATEGIES AS SET OUT BY THE MMM.
- OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO. 85 OF 1993);
- SOUTH AFRICAN MANUAL FOR OUTDOOR ADVERTISING CONTROL (SAMOAC);
- ADVERTISING ON ROADS AND RIBBON DEVELOPMENT ACT, 1940 (ACT 21 OF 1940);
- LOCAL GOVERNMENT: MUNICIPAL SYSTEMS ACT 32 OF 2000;
- COMMON LAW PRINCIPLES FORM THE BASIS OF CURRENT NEIGHBOUR LAW AND THE LAW OF NUISANCE DELICT, NUISANCE & NEIGHBOUR LAW;
- THE DESIGN, CONSTRUCTION, INSPECTION AND TESTING OF THE ELECTRICAL INSTALLATIONS MUST COMPLY WITH ALL RELEVANT STATUTORY REGULATIONS AND DIRECTIVES INCLUDING:
    - OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) INCLUDING THE WIRING OF PREMISES, SANS 10142-1:2003;
    - CONSTRUCTION REGULATIONS 2003 ISSUED IN TERMS OF SECTION 43 OF THE ACT;
    - LOCAL FIRE REGULATIONS; AND
    - REGULATIONS OF THE LOCAL SUPPLY AUTHORITY; AND
    - THE LATEST EDITIONS (CURRENT AT THE TIME OF TENDER) OF ALL RELEVANT SANS, BRITISH STANDARDS AND INTERNATIONAL STANDARDS.
- THE PLANNING AND DESIGN OF THE ELECTRICAL INSTALLATIONS MUST COMPLY WITH NATIONAL BUILDING REGULATIONS IN PURSUIT OF ENERGY EFFICIENT POWER CONSUMPTION. EQUIPMENT AND MATERIAL MUST BE SELECTED AND THE INSTALLATION DESIGNED FOR OPTIMUM ENERGY EFFICIENCY.

APART FROM THE ABOVE, COGNISANCE MUST ALSO BE TAKEN OF LOCAL AND PROVINCIAL GOVERNMENT ORDINANCES, WHICH MAY BE APPLICABLE TO THE PROPOSED DEVELOPMENT. FOR EXAMPLE:

PROTECTED SPECIES – PROVINCIAL ORDINANCES

PROVINCIAL ORDINANCES WERE DEVELOPED TO PROTECTED PARTICULAR PLANT SPECIES WITHIN SPECIFIC PROVINCES. THE PROTECTION OF THESE SPECIES IS ENFORCED THROUGH PERMITTING REQUIREMENTS ASSOCIATED WITH PROVINCIAL LISTS OF PROTECTED SPECIES. PERMITS ARE ADMINISTERED BY THE PROVINCIAL DEPARTMENTS OF ENVIRONMENTAL AFFAIRS.

NO PROTECTED OR VULNERABLE SPECIES EXISTS ON OR CLOSE TO THE SITE.

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES
If YES, what estimated quantity will be produced per month?	20m³

How will the construction solid waste be disposed of (describe)?

CONSTRUCTION WASTE MATERIAL AND CLEARED VEGETATION. WASTE WILL BE REDUCED, RE-USED AND RECYCLED ON SITE AS FAR AS POSSIBLE. WASTE THAT CANNOT BE REUSED OR RECYCLED WILL BE DISPOSED OF AT AN APPROPRIATELY REGISTERED / LICENSED WASTE DISPOSAL FACILITY.

WASTE BINS WILL BE PROVIDED AT STRATEGIC POSITIONS ON SITE FOCUSING ON THE SEGREGATION OF WASTE AS SOURCE (I.E, PLASTIC, GLASS, FOOD, PAPER) AND WHEN THEY ARE FULL THEY WILL BE DISPOSED- OFF AT A LICENSED LANDFILL SITE.

TOPSOIL GENERATED BY CUT AND FILL ACTIVITIES WILL BE UTILIZED BY SPREADING THE SOIL ONTO THE AREAS THAT ARE TO BE GRASSED OR REHABILITATED ON SITE. DETAILED ENVIRONMENTAL MANAGEMENT REQUIREMENTS DURING CONSTRUCTION HAVE BEEN COVERED IN THE EMPR ATTACHED AS APPENDIX G.

Where will the construction solid waste be disposed of (describe)?

WASTE THAT CANNOT BE REUSED OR RECYCLED WILL BE DISPOSED OF AT AN APPROPRIATELY REGISTERED / LICENSED WASTE DISPOSAL FACILITY.

Will the activity produce solid waste during its operational phase?	YES
If YES, what estimated quantity will be produced per month?	

How will the solid waste be disposed of (describe)?

NORMAL HOUSEHOLD AND GARDEN TYPE OF WASTE. THE REFUSE GENERATED BY THE DEVELOPMENT MAY NOT BE DUMPED OR TREATED ON THE SITE. THE OWNER SHOULD MAKE ARRANGEMENTS WITH THE MANGAUNG METRO MUNICIPALITY TO HAVE THE REFUSE REMOVED TO A REGISTERED DUMP SITE AS THE AREA IS CURRENTLY SERVICED BY MMM. GARDEN TYPE WASTE SHOULD BE REMOVED BY THE CLIENT OR PRIVATE CONTRACTOR ON A WEEKLY BASIS TO A REGISTERED LANDFILL SITE. NO WASTE MUST BE BURIED OR BURNED ON THE SITE.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

BLOEMFONTEIN'S SOUTHERN OR NORTHERN LANDFILL SITE.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

BLOEMFONTEIN'S SOUTHERN OR NORTHERN LANDFILL SITE.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	NO

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?	NO

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

ACCORDING TO THE NATIONAL NORMS AND STANDARDS FOR DOMESTIC WATER AND SANITATION SERVICES OF 8 SEPTEMBER 2017 NOTICE NO. 982 OF THE NATIONAL WATER ACT (36/1998) THE FOLLOWING:

SECTION 10.3

NO LIBRARY, OLD-AGE HOME, CHURCH, CEMETERY, SPORTING FACILITY, POLICE STATION, OR CORRECTIONAL FACILITY IS ALLOWED TO FUNCTION WITHOUT ADEQUATE SANITATION FACILITIES.

GOAL: PEOPLE ACCESS PLEASANT, SAFE, RELIABLE AND ADEQUATELY MAINTAINED IMPROVED TOILETS AND HANDWASHING FACILITIES IN CLOSE PROXIMITY TO THE MAIN BUILDING. MAINTENANCE IS THE RESPONSIBILITY OF THE PUBLIC INSTITUTION.

1. IN LIBRARIES, OLD-AGE HOMES, CHURCHES, CEMETERIES, SPORTING FACILITIES, POLICE STATIONS AND CORRECTIONAL FACILITIES, TOILETS SHALL BE PROVIDED WITH ESTABLISHED SYSTEMS FOR PROPER AND REGULAR CLEANING AND MAINTENANCE. DISAGGREGATED POPULATION DATA SHALL BE USED TO PLAN THE NUMBER OF WOMEN'S CUBICLES TO MEN'S USING AN APPROXIMATE RATION OF 3:1. WHERE POSSIBLE, URINALS SHALL BE PROVIDED.

TYPE	TOILET SEATS	UIRINAL UNITS	HAND WASHING FACILITY
TOILET MOSTLY USED ALL THE TIME.	1 SEAT PER 50 USERS	1 UNIT PER 200 USERS	1 BASIN PER 10 TOILET SEATS
TOILETS USED MOSTLY DURING WORKING HOURS	1 SEAT PER 100 USERS	1 UNIT PER 300 USERS	1 BASIN PER 15 TOILET SEATS

2. SANITATION SERVICES SHALL ENSURE THAT SUFFICIENT TOILETS ARE AVAILABLE: THE NUMBER OF TOILETS AND URINALS REQUIRED FOR EACH LIBRARY, OLD-AGE HOME, CHURCH, CEMETERY, SPORTING FACILITY, POLICE STATION OR CORRECTIONAL FACILITY DEPENDS ON THE NUMBERS OF PEOPLE IN THE INSTITUTION ON A DAILY BASIS. THE MAXIMUM NUMBER OF TOILETS SHALL BE PROVIDED WITHIN THE BUDGET CONSTRAINTS.
   (A) MALE AND FEMALE FACILITIES SHALL BE IN SEPARATE TOILET BLOCKS, OR TOILET AREAS SEPARATED BY SOLID WALLS (NOT LIGHTWEIGHT PARTITIONS) AND SHALL HAVE SEPARATE ENTRANCES.
   (B) PROVISION SHALL BE MADE FOR TOILETS FOR PEOPLE AND EDUCATORS LIVING WITH DISABILITIES. AT LEAST ONE TOILET CUBICLE SHALL BE ACCESSIBLE PEOPLE LIVING WITH DISABILITIES, ONE FOR FEMALES AND ONE FOR MALES. THIS INCLUDES LEVEL OR RAMPED ACCESS, A WIDE DOOR AND SUFFICIENT SPACE INSIDE

FOR A WHEELCHAIR USER OR HELPER TO MANOEUVRE, AND THE PROVISION OF SUPPORT STRUCTURES SUCH AS A HANDRAIL AND A TOILET SEAT.

3. SANITATION SERVICES SHALL ENSURE THAT TOILETS ARE EASILY ACCESSIBLE TO ALL: TOILETS MUST BE AS CLOSE AS POSSIBLE TO ENSURE THAT THEY CAN BE USED CONVENIENTLY AND SAFELY.
   (A) ENTRANCES SHALL BE POSITIONED TO PROVIDE MAXIMUM PRIVACY IN ENTERING AND LEAVING A TOILET BLOCK.
   (B) THE LOCATION OF TOILETS MUST CONSIDER THE NEED TO MINIMISE ODOURS (TAKING ACCOUNT OF PREVAILING WINDS) AND AVOID CONTAMINATION OF WATER SUPPLIES AND FOOD.
4. SANITATION SERVICES SHALL ENSURE THAT TOILETS PROVIDE PRIVACY AND SECURITY: TO MINIMISE THE RISK OF VIOLENCE, INCLUDING SEXUAL VIOLENCE, AND TO ENSURE SUFFICIENT PRIVACY, TOILETS MUST BE
   (A) CAREFULLY LOCATED,
   (B) THE TOILETS AND ACCESS ROUTES SHOULD BE LIT IF THEY ARE USED AT NIGHT
   (C) LOCKABLE FROM THE INSIDE (TO PROTECT PEOPLE WHILE USING THEM) BUT SHOULD BE LEFT UNLOCKED WHEN NOT IN USE, TO ENSURE ACCESSIBLE AT ALL TIMES.
5. SANITATION SERVICES SHALL ENSURE THAT TOILETS ARE APPROPRIATE TO LOCAL CULTURAL AND SOCIAL CONDITIONS, AND TO USERS: DIFFERENT CULTURES MAY REQUIRE TOILETS OF DIFFERENT DIMENSIONS (SITTING VS SQUATTING), AND SPECIFIC FEATURES NEED TO BE TAKEN INTO ACCOUNT TO MAKE THE TOILETS EASY AND COMFORTABLE TO USE. TOILETS MUST BE SAFE AND SECURE FOR USE BY ALL CULTURES, AGES AND ABILITIES.
6. SANITATION SERVICES SHALL ENSURE THAT TOILETS ARE HYGIENIC TO USE AND EASY TO CLEAN: TOILETS MUST BE DESIGNED AND BUILT SO THAT THEY ARE HYGIENIC TO USE AND DO NOT BECOME CENTRES FOR DISEASE TRANSMISSION. SURFACES THAT MAY BE SOILED MUST BE OF SMOOTH, WATERPROOF AND HARDWEARING MATERIAL THAT CAN BE CLEANED WITH WATER AND IS RESISTANT TO CLEANING PRODUCTS. THE DESIGN OF THE TOILET MUST INCLUDE MEASURES TO MINIMISE ODOURS, AND CONTROL THE BREEDING OF FLIES AND MOSQUITOES.
7. SANITATION SERVICES SHALL ENSURE THAT TOILETS HAVE CONVENIENT HANDWASHING FACILITIES CLOSE BY: A TOILET IS NOT COMPLETE WITHOUT A HANDWASHING POINT WITH SOAP, WATER AND ADEQUATE DRAINAGE. ALL TOILET DESIGNS MUST INCLUDE CONVENIENT HANDWASHING FACILITIES SO THAT HANDWASHING AFTER USING THE TOILET BECOMES A ROUTINE ACTIVITY.
8. SANITATION SERVICES SHALL ENSURE THAT WATER AND ANAL CLEANSING MATERIAL IS AVAILABLE: WATER SHOULD BE PROVIDED FOR TOILETS WITH WATER FLUSH AND/OR HYGIENIC SEAL MECHANISMS. FOR A CONVENTIONAL PIT TOILET, IT MAY BE NECESSARY TO PROVIDE TOILET PAPER OR OTHER MATERIAL FOR ANAL CLEANSING. USERS SHOULD BE CONSULTED ON THE MOST CULTURALLY APPROPRIATE CLEANSING MATERIALS AND THEIR SAFE DISPOSAL.
9. SANITATION SERVICES SHALL ENSURE THAT MENSTRUATION IS CONSIDERED: WOMEN AND GIRLS OF MENSTRUATING AGE SHOULD HAVE ACCESS TO SUITABLE MATERIALS FOR THE ABSORPTION AND DISPOSAL OF MENSTRUAL BLOOD. WOMEN AND GIRLS SHOULD BE CONSULTED ON WHAT IS CULTURALLY APPROPRIATE. TOILETS MUST INCLUDE PROVISION FOR APPROPRIATE DISPOSAL OF MENSTRUAL MATERIAL OR PRIVATE WASHING FACILITIES.
10. SANITATION SERVICES SHALL ENSURE THAT A CLEANING AND MAINTENANCE ROUTINE IS IN OPERATION: TOILETS MUST BE CLEANED, WHENEVER THEY ARE DIRTY AND AT LEAST ONCE PER DAY, WITH A DISINFECTANT BEING USED ON ALL EXPOSED SURFACES. STRONG DISINFECTANTS SHOULD NOT BE USED IN LARGE QUANTITIES, BECAUSE THIS IS UNNECESSARY, EXPENSIVE, POTENTIALLY DANGEROUS, AND MAY DAMAGE THE SANITATION SYSTEM. IF NO DISINFECTANT IS AVAILABLE, PLAIN COLD WATER MUST BE USED WITH A BRUSH TO REMOVE VISIBLE SOILING.
11. SANITATION SERVICES SHALL ENSURE APPROPRIATE WASTEWATER DISPOSAL: LIBRARIES, OLD-AGE HOMES, CHURCHES, CEMETERIES, SPORTING FACILITIES, POLICE STATIONS, OR CORRECTIONAL FACILITIES MAY PRODUCE WASTEWATER FROM HANDWASHING POINTS, FLUSHING TOILETS, SHOWERS, KITCHENS, LAUNDRIES AND LABORATORIES.
   (A) A PROPERLY BUILT AND FUNCTIONING SEWER SYSTEM IS THE MOST APPROPRIATE WASTEWATER DISPOSAL OPTION FOR PUBLIC PLACES IN URBAN AREAS.
   (B) IN OTHER SITUATIONS, SOAKAWAY PITS OR INFILTRATION TRENCHES MUST BE USED. THESE MUST BE EQUIPPED WITH GREASE TRAPS, WHICH MUST BE CHECKED WEEKLY, AND CLEANED (IF NECESSARY) TO ENSURE THAT THE SYSTEMS OPERATE CORRECTLY.

(C) ALL SYSTEMS THAT INFILTRATE WASTEWATER INTO THE GROUND MUST BE SITED TO AVOID CONTAMINATING GROUNDWATER. A DISTANCE OF AT LEAST 1.5 M BETWEEN THE BOTTOM OF THE INFILTRATION SYSTEM AND THE GROUNDWATER TABLE IS NECESSARY, AND THE SYSTEM MUST BE AT LEAST 30 M FROM ANY GROUNDWATER SOURCE.

(D) ALL WASTEWATER DRAINAGE SYSTEMS MUST BE COVERED TO AVOID THE RISKS OF DISEASE-VECTOR BREEDING AND DIRECT CONTAMINATION.

(E) WASTEWATER (EXCLUDING WASTEWATER FROM TOILETS) MAY BE USED TO WATER A GARDEN, PROVIDED IT IS DONE IN A WAY THAT DOES NOT CREATE HEALTH RISKS. LOCAL ENVIRONMENTAL HEALTH STAFF SHOULD BE ASKED TO ADVISE ON USE OF WASTEWATER.

12. SANITATION SERVICES SHALL ENSURE APPROPRIATE SLUDGE DISPOSAL:

    (A) A PROPERLY BUILT AND FUNCTIONING SEWER SYSTEM IS THE MOST APPROPRIATE WASTEWATER AND SLUDGE DISPOSAL OPTION IN URBAN AREAS.

    (B) IN OTHER SITUATIONS, SOAKAWAY PITS OR INFILTRATION TRENCHES MUST BE USED. ALL SYSTEMS THAT INFILTRATE WASTEWATER INTO THE GROUND MUST BE SITED TO AVOID CONTAMINATING GROUNDWATER. A DISTANCE OF AT LEAST 1.5 M BETWEEN THE BOTTOM OF THE INFILTRATION SYSTEM AND THE GROUNDWATER TABLE IS NECESSARY, AND THE SYSTEM MUST BE AT LEAST 30 M FROM ANY GROUNDWATER SOURCE.

    (C) ALL SLUDGE DRAINAGE SYSTEMS MUST BE COVERED TO AVOID THE RISKS OF DISEASE-VECTOR BREEDING AND DIRECT CONTAMINATION.

    (D) PARTICULAR ATTENTION MUST BE PAID TO THE DISPOSAL OF CHILDREN'S FAECES, AS THEY ARE COMMONLY MORE DANGEROUS THAN THOSE OF ADULTS (EXCRETA-RELATED INFECTION AMONG CHILDREN IS FREQUENTLY HIGHER AND CHILDREN MAY NOT HAVE DEVELOPED ANTIBODIES TO INFECTIONS).

13. SANITATION SERVICES SHALL ENSURE APPROPRIATE SOLID WASTE DISPOSAL: EFFECTIVE MANAGEMENT OF SOLID WASTE AND RE-USE/RECYCLING, ADHERING TO THE REQUIREMENTS OF THE WASTE MANAGEMENT ACT (2008B) AND THE RELEVANT STRATEGIES AND GUIDELINES. WASTE BINS WITH LIDS IN FEMALE TOILETS MUST BE SUPPLIED.
14. HYGIENE PROMOTION: A MUNICIPALITY AS PART OF LOCAL GOVERNMENT, THROUGH ITS ENVIRONMENTAL HEALTH PRACTITIONERS (EHPS) IS RESPONSIBLE FOR PROMOTING HEALTH AND HYGIENE AWARENESS, FOR ENSURING AN ENVIRONMENTALLY SAFE APPROACH TO SANITATION, AND FOR MONITORING THE IMPACT OF SANITATION PROCESSES ON THE ENVIRONMENT.
15. OPERATION AND MAINTENANCE: OPERATIONS AND MAINTENANCE ARE THE ACTIVITIES RELATED TO THE PERFORMANCE OF ROUTINE, PREVENTATIVE, PREDICTIVE, SCHEDULED, AND UNSCHEDULED ACTIONS AIMED AT PREVENTING EQUIPMENT FAILURE OR DECLINE WITH THE GOAL OF INCREASING EFFICIENCY, RELIABILITY, AND SAFETY. THE LIBRARY, OLD-AGE HOME, CHURCH, CEMETERY, SPORTING FACILITY, POLICE STATION, OR CORRECTIONAL FACILITY IS FULLY RESPONSIBLE FOR THE CAPITAL, OPERATION, MAINTENANCE AND REFURBISHMENT ACTIONS AND COSTS PERTAINING TO SANITATION SERVICES, UNLESS IT IS PROVIDED AS A BASIC SERVICE WHERE THE SERVICES PROVIDER IS RESPONSIBLE FOR THE MAINTENANCE COSTS.
16. ASSET MANAGEMENT: THE LIBRARY, OLD-AGE HOME, CHURCH, CEMETERY, SPORTING FACILITY, POLICE STATION, OR CORRECTIONAL FACILITY MUST ACCOUNT FOR ALL SANITATION SERVICES ASSETS IN A WAY THAT ENSURES FINANCIAL SUSTAINABILITY. ALL ASSETS MUST BE TAKEN INTO ACCOUNT WHEN CALCULATING THE CURRENT AND FUTURE FINANCIAL REQUIREMENTS FOR THE REPLACEMENT AND REFURBISHMENT.
17. TYPES OF SANITATION INFRASTRUCTURE/FACILITIES: THE TYPE OF SANITATION INFRASTRUCTURE OR FACILITY ADOPTED AND INSTALLED MUST BE AN IMPROVED FACILITY AND DEPENDS ON THE PREFERENCES AND CULTURAL HABITS OF THE INTENDED USERS, THE CAPACITY OF THE SERVICES PROVIDER (FINANCIAL AND SKILLS), THE EXISTING INFRASTRUCTURE, THE AVAILABILITY OF WATER (FOR FLUSHING AND WATER SEALS), THE SOIL FORMATION (FOR GROUNDWATER AND SURFACE WATER PROTECTION) AND THE CAPACITY OF THE APPLICABLE WASTEWATER TREATMENT METHODS.

IN ORDER TO JUSTIFY THE PROPOSED DEVELOPMENT, IT IS IMPORTANT TO INVESTIGATE THE AVAILABILITY OF CIVIL SERVICES AND TO THIS EFFECT, A SERVICES REPORT DATED SEPT 2010 WAS DONE BY AURECON FOR THE DEVELOPMENT OF THE FORMER CORONATION BRICK SITE NEXT TO THE HEIDEDAL SUBURB. SEE APPENDIX D FOR THIS REPORT. ALSO SEE THE APPENDICES OF THE SERVICES REPORT FOR THE SERVICES AGREEMENT THAT ALREADY EXISTS BETWEEN MMM AND THE CLIENT FOR THE PROPOSED SITE.

THE READER IS REMINDED THAT THE SITE WAS PREVIOUSLY FULLY SERVICED AS SEPARATE INDUSTRIAL ERVEN. IF ANYTHING, THE EXISTING LEVEL OF SERVICES FAR EXCEEDS THE EXPECTED DEMANDS. THE FOLLOWING SERVICES WILL BE PROVIDED ON SITE:

- POTABLE WATER: POTABLE (MUNICIPAL) WATER WILL BE PROVIDED VIA A RETICULATION TO DRINKING FOUNTAINS AND ABLUTION FACILITIES. THIS RETICULATION HAS BEEN INSTALLED.
- RAW WATER: RAW WATER WILL BE PROVIDED VIA A SEPARATE RETICULATION FOR THE PURPOSES OF IRRIGATION AND MAINTENANCE.
- ROADS AND STORMWATER. THE EXISTING STREET AND STORMWATER INFRASTRUCTURE WOULD SUFFICE. SMALLER ACCESS STREETS WILL BE CONSTRUCTED. STORMWATER INFRASTRUCTURE HAS ALREADY BEEN CONSTRUCTED.
- ELECTRICITY: ELECTRICITY WILL BE PROVIDED TO ALL BUILT FACILITIES AND AREA LIGHTING.
- *SANITATION:* ABLUTION FACILITIES WILL BE SERVICED WITH SEWER CONNECTIONS.

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?		NO
If YES, what estimated quantity will be produced per month?		m^3
Will the activity produce any effluent that will be treated and/or disposed of on site?		NO

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	YES	

If YES, provide the particulars of the facility:

Facility name:	BLOEMSPRUIT WASTE WATER TREATMENT WORKS - MMM		
Contact person:	MR WAGENAAR		
Postal address:	P O BOX 3704, BLOEMFONTEIN		
Postal code:	9300		
Telephone:	051 - 410 6605	**Cell:**	-
E-mail:	GERHARD.FRITZ@MANGAUNG.CO.ZA	**Fax:**	-

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

WASTEWATER EXCLUDING TOILET WATER CAN BE CAPTURED AND USED FOR THE IRRIGATION OF THE CEMETERY GROUNDS (GRASSED AREAS AND TREES).

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?		NO
	YES	NO

If YES, is it controlled by any legislation of any sphere of government? N/A

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. N/A

If NO, describe the emissions in terms of type and concentration:

CONSTRUCTION PHASE:

CONSTRUCTION ACTIVITIES OF BUILDINGS ETC WILL RESULT IN EMISSIONS IN THE FORM OF DUST AND FUEL EMISSIONS. HOWEVER THE IMPACT(S) ASSOCIATED WITH SUCH EMISSIONS WILL BE LIMITED TO THE SURROUNDING AREA. FURTHER SUCH IMPACTS ARE CONSIDERED TO BE OF SHORT TERM AND WILL BE LIMITED TO ONLY THE CONSTRUCTION PHASE.

APPROPRIATE MITIGATION OF THE ANTICIPATED IMPACTS HAS BEEN INCLUDED IN THE ENVIRONMENTAL MANAGEMENT PLAN.

OPERATIONAL PHASE:

DUST: THE ONLY INCREASE IN DUST DURING THE OPERATIONAL PHASE WILL BE FROM DIGGING OF GRAVES AS REQUIRED FOR BURIALS.

EMISSIONS: VEHICLE EMISSIONS WILL INCREASE DURING THE OPERATIONAL PHASE AS A RESULT OF INCREASED TRAFFIC TO THE DEVELOPMENT AS WELL AS BY EMISSION'S FROM TLB'S DIGGING THE GRAVES.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	NO

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?	YES
If YES, is it controlled by any legislation of any sphere of government?	YES

Describe the noise in terms of type and level:

CONSTRUCTION ACTIVITIES MAY LEAD TO NOISE POLLUTION IN THE AREA. USE OF HEAVY VEHICLES AND MACHINERY MAY GENERATE NOISE FOR THE DURATION OF THE CONSTRUCTION PERIOD OF THE CEMETERY.

NOISE DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT WILL BE LIMITED TO NOISE GENERATED BY TLB'S DIGGING GRAVES REQUIRED FOR BURIALS.

THE NOISE TO BE GENERATED DURING BOTH THE CONSTRUCTION AND OPERATIONAL PHASES WILL BE WITHIN ACCEPTABLE LIMITS AND SIMILAR TO THAT FOUND IN THE SURROUNDING AREAS.

13. WATER USE

ACCORDING TO THE NATIONAL NORMS AND STANDARDS FOR DOMESTIC WATER AND SANITATION SERVICES OF 8 SEPTEMBER 2017 NOTICE NO. 982 OF THE NATIONAL WATER ACT (36/1998) THE FOLLOWING:

SECTION 5.9.3

APART FROM EDUCATIONAL AND HEALTH CARE FACILITIES, PUBLIC FACILITIES ALSO INCLUDE PLACES WHERE PEOPLE GATHER AND WHERE A WATER SERVICES PROVIDER IS RESPONSIBLE FOR PROVISION OF WATER, SUCH AS CEMETERIES,

FUNERAL PARLOURS AND CREMATORIA, LOCAL FACILITIES (PUBLIC AMENITIES, COMMUNITY HALLS, TAXI RANKS, CHURCHES, POLICE STATIONS, ETC), LOCAL SPORTS FACILITIES, AND PUBLIC PLACES (PARKS, BEACHES AND PLACES OF LEISURE).

NO PUBLIC FACILITY IS ALLOWED TO BE USED WITHOUT ACCESS TO POTABLE WATER.

GOAL: MEETING PEOPLE'S NEED FOR POTABLE WATER FOR DRINKING AND WASHING HANDS WHEN THEY ARE IN PUBLIC SPACES AWAY FROM THEIR HOME OR WORK PLACES.

THEREFORE:

1. A MINIMUM VOLUME OF 15 TO 20 LITRES OF POTABLE WATER PER PERSON PER DAY SHALL BE MADE AVAILABLE TO A PUBLIC FACILITY.
2. THE MINISTER RESPONSIBLE FOR WATER RESERVES THE RIGHT TO IMPOSE WATER RESTRICTIONS WHEN NECESSARY, BUT NEVER LESS THAN 25 LITRES PER PERSON PER DAY.
3. THE WATER PROVIDED SHALL COMPLY WITH THE SANS 241 QUALITY STANDARDS.
4. THE ACCESS/DELIVERY POINT SHALL BE ONE HYGIENIC WATER TERMINAL ON THE PREMISES FOR EVERY 130 USERS AND WITHIN 100M OF THE MAIN BUILDING.
5. THE WATER SHALL BE MADE AVAILABLE FOR 350 DAYS PER YEAR, AND NOT INTERRUPTED FOR LONGER THAN 48 CONSECUTIVE HOURS.
6. ALL WATER USE AND/OR SUPPLY SHALL BE METERED AND TARIFFED.
7. WATER LOSS AND LEAK DETECTION SHALL BE IMPLEMENTED TO REDUCE WATER DEMAND.
8. GREYWATER RE-USE AND MANAGEMENT SHALL BE ADVOCATED.
9. EFFORTS SHALL BE MADE TO ENSURE USER ACCEPTANCE AND UNDERSTANDING FOR THIS LEVEL OF SERVICE.
10. USERS - THE PUBLIC - SHALL BE EDUCATED IN EFFECTIVE WATER USE, WATER CONSERVATION AND HYGIENE THROUGH AT LEAST PRINTED MATERIAL AT THE FACILITY.

IN ORDER TO JUSTIFY THE PROPOSED DEVELOPMENT, IT IS IMPORTANT TO INVESTIGATE THE AVAILABILITY OF CIVIL SERVICES AND TO THIS EFFECT, A SERVICES REPORT DATED SEPT 2010 WAS DONE BY AURECON FOR THE DEVELOPMENT OF THE FORMER CORONATION BRICK SITE NEXT TO THE HEIDEDAL SUBURB. SEE APPENDIX D FOR THE SERVICES REPORT. ALSO SEE THE APPENDICES OF THE SERVICES REPORT FOR THE SERVICES AGREEMENT THAT ALREADY EXISTS BETWEEN MMM AND THE CLIENT FOR THE PROPOSED SITE.

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

MUNICIPAL	~~Water board~~	~~Groundwater~~	~~River, stream, dam or lake~~	~~Other~~	~~The activity will not use water~~

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	-
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs? SPOKE TO MR CARLO SCHRADER FROM DWS ABOUT THIS AND WHETHER OR NOT DWS SEES THE HUGE QUARRY DAM JUST SOUTH (130M) OF THE CEMETERY SITE TO BE A WETLAND OR NOT. IF IT'S A WETLAND A GENERAL AUTHORIZATION REQUIREMENT WILL BE TRIGGERED. HE HOWEVER INFORMED US THAT THEY DO NOT SEE THE QUARRY DAM AS A WETLAND AND THAT NO WATER AUTHORIZATION OR LICENCE IS THEREFORE REQUIRED FOR THE PROPOSED CEMETERY DEVELOPMENT. MR SCHRADER HOWEVER INFORMED US THAT A SAFE DISTANCE SHOULD BE	NO

MAINTAINED FROM THE DAM SHOULD IT POSSIBLY OVERFLOW IN FUTURE, WHICH IS VERY UNLIKELY. [redacted]

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

ELECTRICITY: ELECTRICITY WILL BE PROVIDED TO ALL BUILT FACILITIES AND AREA LIGHTING. THE PROPOSED AREA WAS DEVELOPED AND SERVICED, BUT UNFORTUNATELY THIS AREA WAS VANDALIZED, AND ELECTRICAL SERVICES HAVE BEEN REMOVED.

APPROPRIATE STRUCTURAL DESIGNS, ENERGY EFFECTIVE BUILDING CONSTRUCTION AND ORIENTATION, HAVE NOT BEEN CONSIDERED TO DATE DUE TO THE SMALL SCALE OF CONSTRUCTION THAT IS NEEDED. A COMPREHENSIVE ENVIRONMENTAL MANAGEMENT PLAN (EMP) IS INCLUDED (PLEASE REFER TO APPENDIX G) AND WILL FORM PART OF THE PRE-CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT. THE FOLLOWING RECOMMENDATIONS REGARDING STRUCTURAL DESIGNS ARE HOWEVER MADE:

THE BUILDING STRUCTURE SHOULD BE NORTH-FACING TO OPTIMIZE THE USE OF SOLAR ENERGY.

BUILDING MATERIAL SHOULD BE LEGALLY OBTAINED BY THE SUPPLIER, E.G. WOOD MUST HAVE BEEN LEGALLY HARVESTED, AND SAND SHOULD BE OBTAINED ONLY FROM LEGAL BORROW PITS AND FROM COMMERCIAL SOURCES. BUILDING MATERIAL THAT CAN BE RECYCLED / REUSED SHOULD BE USED RATHER THAN BUILDING MATERIAL THAT CANNOT.

USE HIGHLY DURABLE BUILDING MATERIAL FOR PARTS OF THE BUILDING THAT ARE UNLIKELY TO BE CHANGED DURING THE LIFE OF THE BUILDING (UNLIKELY TO CHANGE DUE TO E.G. RENOVATION, FASHION, CHANGES IN FAMILY LIFE CYCLE) IS HIGHLY RECOMMENDED. LOCALLY-AVAILABLE BUILDING MATERIAL INSTEAD OF IMPORTED BUILDING MATERIAL SHOULD BE USED AS MUCH AS POSSIBLE (THIS WILL REDUCE TRANSPORTATION IMPACTS AND ENHANCE LOCAL JOB CREATION).

SOLAR GEYSERS AND ENERGY SAVING LIGHTS WILL BE USED. LIGHTS MUST BE SWITCHED OFF IF THEY ARE NOT BEING USED.

THE PROPOSED DEVELOPMENT MUST COMPLY WITH THE ENERGY RESTRICTIONS IMPOSED BY ESKOM AND SANS 204. IN ADDITION THE DESIGNS AND ELECTRICAL WORK MUST COMPLY WITH SANS 204. WHERE NECESSARY, MAXIMUM ENERGY DEMAND AND MAXIMUM ENERGY CONSUMPTION WILL BE MANAGED.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

WHERE POSSIBLE, THE USE OF ALTERNATIVE ENERGY SUPPLY WILL BE PROMOTED AND USED. THIS COULD INCLUDE:

- SOLAR LIGHTING.
- SOLAR WATER HEATING.
- THE USE OF LIGHT EMITTING DIODE (LED) BULBS.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete 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, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A): [ ]

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? YES

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	FREE STATE
District Municipality	-
Local Municipality	MANGAUNG METRO MUNICIPALITY
Ward Number(s)	HEIDEDAL WARD
Erf Numbers	16667 TO 16702 AND 16704 HEIDEDAL, BLOEMFONTEIN
Portion number	-
SG Code	F00300040001666700000 F00300040001666800000 F00300040001666900000 F00300040001667000000 F00300040001667100000 F00300040001667200000 F00300040001667300000 F00300040001667400000 F00300040001667500000 F00300040001667600000 F00300040001667700000 F00300040001667800000 F00300040001667900000 F00300040001668000000 F00300040001668100000 F00300040001668200000 F00300040001668300000 F00300040001668400000 F00300040001668500000 F00300040001668600000 F00300040001668700000 F00300040001668800000 F00300040001668900000 F00300040001669000000 F00300040001669100000 F00300040001669200000 F00300040001669300000 F00300040001669400000 F00300040001669500000 F00300040001669600000 F00300040001669700000 F00300040001669800000 F00300040001669900000 F00300040001670000000 F00300040001670100000 F00300040001670200000 F00300040001670400000

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:	GENERAL INDUSTRY AND NOXIOUS INDUSTRY. SITES ARE STILL UNDEVELOPED BUT SERVICED ALREADY.

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? YES

THE APPLICANT IS IN THE PROCESS OF APPLYING FOR THE LAND USE RIGHT AS REQUIRED BY THE PROPOSED DEVELOPMENT.

AN APPLICATION WILL BE MADE MADE FOR THE PARTIAL CANCELLATION OF THE GENERAL PLAN CONSISTING OF ERVEN 16667- 16680, 16682 – 16702 AND 16704 WITH THE AIM OF REGISTERING A RE-LAYOUT FOR THE PURPOSES OF A CEMETERY IN TERMS OF SECTION --(-)(-)(--) OF THE MMM 35/2015. THE APPLICANT INTENDS TO CANCEL THE CURRENT GENERAL PLAN OF THE AREA WHICH CONSISTS OF ERVEN 16667 - 16680, 19982 – 16702 AND 16704, AND A PORTION OF STREETS IN ORDER TO DO A RE-LAYOUT WHICH WILL ALLOW FOR A CEMETERY. A REZONING APPLICATION WILL BE SUBMITTED BY A MR J HAMER A REGISTERED TOWN AND REGIONAL PLANNER TO MMM FOR THE REZONING OF THE ERVEN APPLICABLE FROM GENERAL INDUSTRY AND NOXIOUS INDUSTRY TO A SPECIAL USE THAT WILL ALLOW THE CEMETERY TO BE DEVELOPED.

ERF 16681 WILL NOT BE REZONED. NO GRAVES WILL BE ALLOWED THEREON BUT THE CHAPEL, ABLUTION FACILITIES, OFFICES AND PARKING AREAS WILL BE PLANNED THEREON.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

THE PROPOSED SITE IS SITUATED ON THE PLOT OF LAND OF A DE-COMMISSIONED ROCK QUARRY. THE AREA DISPLAYS NO SIGNS OF AN OBSERVABLE SLOPE (APPROXIMATELY 1.3%). THE PROPOSED DEVELOPMENT NATURALLY DRAINS TO THE NORTH EAST AND NORTH WEST CORNER OF THE SITE.

THE PROPOSED SITE IS SITUATED ON A RELATIVELY FLAT PLANE WITH FAIR TO POOR SURFACE COVER BY PLANTS. THIS MAY CAUSE PONDING AND EROSION ON AREAS WITH A SLIGHTLY STEEPER SLOPE. THEREFORE, THE FOLLOWING PRECAUTIONS APPLIES:

- EXCESSIVE PONDING WILL ENHANCE THE INGRESS OF WATER INTO THE SOIL, ESPECIALLY AT RECENTLY CLOSED GRAVES. THIS WILL INCREASE THE RISK OF GROUNDWATER POLLUTION.
- POOR SITE DRAINAGE WILL INCREASE THE RISK OF FLOODING OPEN GRAVE SITES.
- POOR DRAINAGE WILL RESULT IN MARSHY CONDITIONS, REDUCING MOBILITY AROUND GRAVE SITES.
- POOR DRAINAGE MAY CREATE THE IMPRESSION OF A BADLY MAINTAINED CEMETERY SITE.

WITH THE HUMAN AND MECHANICAL MOBILITY OF THE TERRAIN BEING INFLUENCE BY THE CHANCE OF PONDING OF WATER, THE SITE DRAINAGE SHOULD BE WELL DESIGNED TO AVOID MARSHY CONDITIONS ESPECIALLY AROUND NEWLY EXCAVATED GRAVES.

THE INVESTIGATED AREA HAS ALREADY CONSTRUCTED STREETS FOR ACCESS INTO THE AREA. PORTIONS OF THE SITE ARE COVERED IN DUMPED REFUSE AND BUILDING RUBBLE. PLANT LIFE ON SITE CONSISTS MOSTLY OF INDIGENOUS

SMALL SHRUBS, GRASSES AND INVASIVE EUCALYPTUS TREES ALONG THE RAIL ROAD TRACK TO THE NORTHERN BORDER OF THE INVESTIGATED AREA.

Alternative S1:

FLAT	~~1:50 – 1:20~~	~~1:20 – 1:15~~	~~1:15 – 1:10~~	~~1:10 – 1:7,5~~	~~1:7,5 – 1:5~~	~~Steeper than 1:5~~

Alternative S2 (if any):

FLAT	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S3 (if any):

FLAT	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline		2.4 Closed valley		2.7 Undulating plain / low hills	
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 PLAIN	X	2.9 Seafront	
2.10 At sea					

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:	Alternative S2 (if any): N/A	Alternative S3 (if any): N/A
Shallow water table (less than 1.5m deep)	NO	NO	NO
Dolomite, sinkhole or doline areas	NO	NO	NO
Seasonally wet soils (often close to water bodies)	NO	NO	NO
Unstable rocky slopes or steep slopes with loose soil	NO	NO	NO
Dispersive soils (soils that dissolve in water)	NO	NO	NO
Soils with high clay content (clay fraction more than 40%)	NO	NO	NO
Any other unstable soil or geological feature	NO	NO	NO
An area sensitive to erosion	NO	NO	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

BASED ON THE 1:250 000 GEOLOGICAL MAP 2926 BLOEMFONTEIN GEOLOGY SERIES 2002 MAP, IN APPENDIX G THE GEOLOGY OF THE BLOEMFONTEIN AREA IS UNDERLAIN BY THE LOWER STAGE OF THE BEAUFORT GROUP WHICH IS PART OF THE KAROO SUPER GROUP. THE SEDIMENTARY ROCKS THAT ARE PRESENT IN THIS GROUP CONSIST OF FINE-

GRAINED GREY SANDSTONE AND COARSE ARKOSE ALTERNATING WITH GREEN AND MAROON-COLOURED MUDSTONE BEDS. THE TYPICAL MATERIALS / ROCK TYPE FOUND IN THE AREA OF BLOEMFONTEIN ARE DOLERITE, (K3L) SANDSTONE / SHALE / MUDSTONE AND, (K2U) MUDSTONE / SHALE.

3.1 GENERAL ASSESSMENT OF THE SITE

THE PROFILES, LABORATORY TEST RESULTS AND FIELD TEST RESULTS ARE SUPPLIED IN APPENDICES B, C & D OF THE ATTACHED GEOTECHNICAL REPORT IN APPENDIX D. THE POTENTIAL EXPANSIVENESS OF THE MATERIALS WAS DETERMINED ACCORDING TO VAN DER MERWE'S METHOD (1964). THE EVALUATION OF THE SWELLING POTENTIAL OF MATERIALS IS SUMMARISED IN TABLE 6 OF THE GEOTECHNICAL REPORT.

MATERIALS WITH A LOW POTENTIAL EXPANSIVENESS WAS ENCOUNTERED DURING THE GEOTECHNICAL INVESTIGATION. THE MATERIALS DESCRIPTION WAS DONE ACCORDING TO THE UNIFIED SOIL CLASSIFICATION CRITERIA (USC). SEE THE DESCRIPTIONS OF THE CLASSIFICATION ABBREVIATIONS BELOW:

- SC: CLAYEY SAND, CLAYEY SAND WITH MUDSTONE GRAVEL / WEATHERED DOLERITE GRAVEL
- CL: LEAN CLAY WITH SAND, SANDY LEAN CLAY
- SC-SM: SILTY CLAYEY SAND

THE COMPACTION PROPERTIES OF THE IN-SITU MATERIALS AS DETERMINED BY THE MAXIMUM DRY DENSITY (MDD), OPTIMUM MOISTURE CONTENT (OMC), CALIFORNIA BEARING RATIO AND COMPACTABILITY ARE SUMMARISED IN TABLE 7 OF THE GEOTECHNICAL REPORT. MATERIAL CLASSIFICATIONS WAS DONE ACCORDING TO COLTO (1998), UNIFIED SOIL CLASSIFICATION (USC) (2006) AND AASHTO SOIL CLASSIFICATION (AASHTO M 145) AND TRH 14 (1985).

THE PERMEABILITY OF THE IN-SITU MATERIALS WERE DETERMINED BY HAZEN'S FORMULA (1911) AND PRESENTED IN TABLE 8 OF THE GEOTECHNICAL REPORT. REFER TO FIGURE 18 AND TABLE 2 BELOW FOR THE CALCULATED (HAZEN 1911) PERMEABILITY DISTRIBUTION ACROSS THE SITE AT AN APPROXIMATE DEPTH OF 2.000M.

FIGURE 18: MAP SHOWING THE PERMEABILITY DISTRIBUTION ACROSS THE SITE.

TABLE 2: PERMEABILITY DISTRIBUTION ACROSS THE SITE AS PER MAP IN FIGURE 18.

Colour on Figure 4	Lower Limit of Calculated Permeability (cm/s)	Upper Limit of Calculated Permeability (cm/s)
	9.785×10^{-5}	1.468×10^{-4}
	5.510×10^{-7}	3.673×10^{-4}
	9.070×10^{-7}	1.361×10^{-6}

SEE TABLE 10 OF THE ATTACHED GEOTECHNICAL REPORT FOR THE ESTIMATED BEARING RATIO THAT GIVES AN INDICATION OF THE PROPERTIES OF THE MATERIALS AT THE TIME OF THE INVESTIGATION.

THE INVESTIGATION INDICATES THAT THE SITES ARE SUITABLE FOR THE PROPOSED DEVELOPMENT, PROVIDED THAT THE RECOMMENDATIONS GIVEN IN THIS REPORT ARE IMPLEMENTED TO OVERCOME CERTAIN GEOTECHNICAL CONSTRAINTS.

3.2 SOIL EXCAVATABILITY

THE EXCAVATABILITY OF THE THIRTEEN (13) TEST PITS WAS MODERATE AND AN AVERAGE DEPTH OF 1.400M, RANGING FROM 0.600M TO 1.600M BELOW GROUND LEVEL COULD BE ACHIEVED USING PICK AND SHOVEL. DEEPER EXCAVATIONS WILL REQUIRE MECHANICAL EXCAVATING EQUIPMENT.

3.3 SITE DRAINAGE

THE PROPOSED SITE IS SITUATED ON A RELATIVELY FLAT PLANE WITH FAIR TO POOR SURFACE COVER BY PLANTS. THIS MAY CAUSE PONDING AND EROSION ON AREAS WITH A SLIGHTLY STEEPER SLOPE. THEREFORE, THE FOLLOWING PRECAUTIONS APPLIES:

EXCESSIVE PONDING WILL ENHANCE THE INGRESS OF WATER INTO THE SOIL, ESPECIALLY AT RECENTLY CLOSED GRAVES. THIS WILL INCREASE THE RISK OF GROUNDWATER POLLUTION.

- POOR SITE DRAINAGE WILL INCREASE THE RISK OF FLOODING OPEN GRAVE SITES.
- POOR DRAINAGE WILL RESULT IN MARSHY CONDITIONS, REDUCING MOBILITY AROUND GRAVE SITES.
- POOR DRAINAGE MAY CREATE THE IMPRESSION OF A BADLY MAINTAINED CEMETERY SITE.

WITH THE HUMAN AND MECHANICAL MOBILITY OF THE TERRAIN BEING INFLUENCE BY THE CHANCE OF PONDING OF WATER, THE SITE DRAINAGE SHOULD BE WELL DESIGNED TO AVOID MARSHY CONDITIONS ESPECIALLY AROUND NEWLY EXCAVATED GRAVES.

3.4 GROUNDWATER

THE STUDY AREA IS SITUATED ON A MINOR AQUIFER REGION WHICH IS A MODERATELY-YIELDING AQUIFER SYSTEM OF VARIABLE WATER QUALITY.

THE ELECTRICAL CONDUCTIVITY VALUES ARE EXPECTED TO VARY BETWEEN 70 MS/M AND 150 MS/M. THE AQUIFER HAS A LEAST GROUNDWATER VULNERABILITY RATING THAT IS ONLY VULNERABLE TO CONTINUOUSLY DISCHARGED OR LEACHED POLLUTANTS IN THE LONG TERM.

DUE TO THE STUDY AREA'S AQUIFER SYSTEM HAVING A MINOR AQUIFER CLASSIFICATION AND LEAST AQUIFER VULNERABILITY RATING, IT CAN BE ASSUMED THAT THE AQUIFER HAS A LOW SUSCEPTIBILITY FOR CONTAMINATION. A GROUNDWATER SUSCEPTIBILITY MATRIX IS GIVEN IN TABLE 3-1 OF ATTACHED GEOHYDROLOGICAL REPORT,

REPRESENTING A QUALITATIVE MEASURE OF THE RELATIVE EASE WITH WHICH A GROUNDWATER BODY CAN BE POTENTIALLY CONTAMINATED BY ANTHROPOGENIC ACTIVITIES AND INCLUDES BOTH AQUIFER VULNERABILITY AND THE RELATIVE IMPORTANCE OF THE AQUIFER IN TERMS OF ITS CLASSIFICATION.

GROUNDWATER FLOW IS EXPECTED TO FOLLOW THE OVERALL TOPOGRAPHICAL DECLINE TO THE EAST. GROUNDWATER BENEATH THE STUDY AREA IS EXPECTED TO FLOW NORTH EAST TO COLLECT WITHIN THE BLOEMSPRUIT RIVER WATER CATCHMENT.

3.4.1 GROUNDWATER SITE ANALYSIS AS PER GEOHYDROLOGICAL REPORT

IN ORDER TO DETERMINE THE ESTIMATED RISK OF A PROPOSED DEVELOPMENT ON THE LOCAL GROUNDWATER REGIME, A NUMBER OF VARYING FACTORS NEED TO BE CONSIDERED. THERE ARE VARIOUS METHODS FOR ASSESSING GROUNDWATER VULNERABILITY AND THE MAIN ONES INCLUDE SINTACS, GOD, SEEPAGE, THE AVI RATING SYSTEM, ISIS, EPIK AND DRASTIC. FOR THE PURPOSE OF THIS RISK ASSESSMENT THE GEOHYDROLOGICAL STUDY MADE USE OF THE "DRASTIC' METHOD OF ANALYSIS. THE DRASTIC INDEX (DI) IS A MODEL FOR EVALUATING POLLUTION POTENTIAL OF A SPECIFIC AREA AND ITS NAME IS AN ACRONYM DERIVED FROM SEVEN PARAMETERS REQUIRED FOR ITS USE. THESE ARE:

- DEPTH TO WATER TABLE;
- RECHARGE (NET);
- AQUIFER MEDIA;
- SOIL MEDIA;
- TOPOGRAPHY;
- IMPACT OF THE VADOSE ZONE;
- CONDUCTIVITY (HYDRAULIC).

SEE TABLE 3 AND 4 OF THE GEOHYDROLOGICAL REPORT FOR THE GROUNDWATER VULNERABILITY PARAMETERS AND CONDUCTIVITY CLASSIFICATION RATINGS. TABLE 5 IN THE SAME REPORT GIVES A DESCRIPTION OF PARAMETERS WEIGHTS USED WHEN ASSESSING GROUNDWATER VULNERABILITY. THE TOTAL DI GROUNDWATER VULNERABILITY VALUES WERE CLASSIFIED ACCORDING TO THE PRESCRIBED VALUES AS INDICATED IN THE GEOHYDROLOGICAL REPORT.

(a) DEPTH TO GROUNDWATER

NO GROUNDWATER LEVELS COULD BE COLLECTED IN THE IMMEDIATE VICINITY SURROUNDING OR WITHIN THE STUDY AREA. APPROXIMATELY 1,8KM NORTH WEST OF THE STUDY AREA, ONE WATER LEVEL WAS RECORDED AT 6,43 MBGL. HOWEVER, THIS BOREHOLE WAS REPORTED TO PERIODICALLY UNDERGO GROUNDWATER ABSTRACTION, THEREFORE THIS MEASUREMENT MAY NOT REPRESENT A STATIC ROUNDWATER LEVEL. IT IS ESTIMATED THAT LOCAL GROUNDWATER DEPTHS AT THE INVESTIGATED SITE ARE WITHIN RANGE OF 5-15 MBGL BASED ON MULTIPLE DRY MANHOLES (CS5) RECORDED ON SITE WITH DEPTHS OF 4-5MBGL.

GROUNDWATER LEVELS ARE EXPECTED TO FLUCTUATE IN ACCORDANCE TO RAINFALL OCCURRENCE. THE SITE WAS VISITED DURING LOW RAINFALL MONTHS, THEREFORE THIS GROUNDWATER LEVEL ESTIMATION IS EXPECTED TO REPRESENT A DEPRECIATED SEASONAL GROUNDWATER LEVEL ELEVATION.

THE DEPTH TO GROUNDWATER IS DETERMINED WITHOUT COMPENSATING FOR THE INFLUENCE THAT SITE CS2 (SEE SECTION 5.1.3 OF THE GEOHYDROLOGICAL REPORT) MAY HAVE ON THE LOCAL GROUNDWATER TABLE. IT IS HIGHLY RECOMMENDED THAT THE WATER SOURCE TO CS2 BE DETERMINED AS IT IS ESTIMATED TO BE AS A RESULT OF A FAULTY SEWER SYSTEM.

BASED ON INFORMATION GATHERED DURING THE SITE INVESTIGATION, THE DEPTH TO GROUNDWATER VULNERABILITY SIGNIFICANCE RATING IS ESTIMATED AT 1 WITH A WEIGHT OF 5.

(b) NET RECHARGE

THE STUDY AREA IS SITUATED IN THE QUATERNARY CATCHMENT C52F. THIS AREA IS ASSOCIATED WITH AN ESTIMATED GROUNDWATER RECHARGE RATE OF 5 – 10 MM/A. THEREFORE THE NET RECHARGE VULNERABILITY SIGNIFICANCE RATING IS ESTIMATED AT 0.18 WITH A WEIGHT OF 4.

(c) AQUIFER MEDIA

ACCORDING TO GEOLOGICAL AND AIRBORNE MAGNETIC MAPPING, AS WELL AS ON SITE GEOLOGICAL AND GEOPHYSICAL MAPPING, THE AREA IS UNDERLAIN BY INTERGRANNULAR SEDIMENTARY GEOLOGY. THEREFORE AN AQUIFER MEDIA VULNERABILITY SIGNIFICANCE RATING IS ESTIMATED AT 2 WITH A WEIGHT OF 3.

(d) SOIL MEDIA

THE STUDY AREA WAS RECORDED TO BE UNDERLAIN BY A SANDY CLAY -CLAY SOIL PROFILE. THEREFORE A SOIL MEDIA VULNERABILITY SIGNIFICANCE RATING IS ESTIMATED AT 0.18 WITH A WEIGHT OF 2.

(e) TOPOGRAPHY

THE STUDY AREA FORMS PART OF A CHARACTERISTICALLY FLAT TOPOGRAPHY WITH A DECLINE OF ESTIMATED 0 - 2 %. THEREFORE A TOPOGRAPHY VULNERABILITY SIGNIFICANCE RATING IS ESTIMATED AT 0.37 WITH A WEIGHT OF 1.

(f) IMPACT OF THE VADOSE ZONE

THE STUDY AREA HAS BEEN MAPPED TO FORM PART OF THE KAROO SUPERGROUP. IT THEREFORE HAS AN IMPACT ON VADOSE ZONE VULNERABILITY SIGNIFICANCE RATING ESTIMATED AT 0.5 WITH A WEIGHT OF 5.

(g) HYDRAULIC CONDUCTIVITY

THE HYDRAULIC CONDUCTIVITY OF THE STUDY AREA IS ESTIMATED TO BE DIRECTLY RELATED TO THE SANDSTONE FORMATION OF THE BEAUFORD GROUP. THIS AQUIFER TYPE IS EXPECTED TO HAVE A VULNERABILITY SIGNIFICANCE RATING ESTIMATED AT 1.47 WITH A WEIGHT OF 3.

3.4.2 CONCLUSION ON DI POLUTION POTENTIAL OF THE SITE

ACCORDING TO THE GEOHYDROLOGICAL REPORT THE CALCULATED DRASTIC INDEX (DI) SUGGESTS THAT THE STUDY AREA EXHIBIT A SUSCEPTIBILITY AND VULNERABILITY RATING RANGING OF VERY LOW, BORDERING ON LOW. SEE SECTION 6.2 OF THE GEOHYDROLOGICAL REPORT FOR THE CALCULATION.

IT WAS NOTED THAT THE AREA SURROUNDING THE INVESTIGATED SITE HAS:

- LIMITED GROUNDWATER EXPLORATION POTENTIAL.
- LIMITED GROUNDWATER DEPENDENCIES RELATED TO WATER QUALITY.
- A DETERIORATED GROUNDWATER AND SURFACE WATER QUALITY.
- REPORTS OF BEING BACTERIOLOGICALLY DEGRADED BY AN ADJACENT WWTW TO THE EAST.

THE CALCULATED DRASTIC INDEX (DI) MAY THEREFORE BE ADJUSTED TO HAVING A SUSCEPTIBILITY AND VULNERABILITY RATING RANGING OF VERY LOW ACCORDING TO THE GEOHYDROLOGICAL REPORT.

3.4.3 Recommendations regarding Groundwater

Based on hydrogeological findings, the proposed cemetery development can only be considered if the following recommendations are strictly adhered to:

- Special attention should be directed at stormwater diversion structures to restrict pollutants such as hydrocarbons, soaps and other waste water chemicals from seeping into the subsurface and underlying groundwater table during construction and operational phase.
- Trees on the northern border of the study area should preferably be kept in place with their deep root systems intact to act as a contaminant buffer for groundwater flow towards the north.
- Any un-monitored increased abstraction of groundwater by the possible future drilling of boreholes within a 1km radius of the site can increase flow gradients and velocities and will have to be discouraged should it be considered by the municipality or land users.

3.5 Soil Permeability

For cemetery purposes, soil permeability must fall within a predetermined permeability range. A permeability that is too low will result in anaerobic and septic conditions and permeability that is too high will result in rapid leaching and possible pollution to both surface and groundwater.

The Predicted Permeability Ranges for the site according to The Council of Geoscience are summarised in Table 11 of the geotechnical report. The permeability tests calculated and summarised in Table 8 of the geotechnical report, confirmed the predicted permeability by the Council for Geoscience of the material retrieved from site. Thus, the following materials found on site meets the suitability requirements according to the Council for Geoscience:

- SC: Clayey SAND, clayey SAND with mudstone gravel / weathered dolerite gravel.
- CL: Lean CLAY with sand, Sandy lean CLAY.
- SC-SM: Silty clayey SAND.

3.6 Positioning in Respect of Domestic Water Supplies

The Suggested Safe Distances to Domestic Water Sources according to Permeability of the Soil are summarised in Table 12 of the geotechnical report. According to the Council of Geoscience, based on the permeability of the soil, the greatest suggested safe minimum distance from Domestic Water Supplies (including the 150m safety factor), is 465m and the least is 150m. Depending on the positions of domestic use boreholes in the area, the site is suitable provided that the distance is more than 465m.

3.7 Positioning in Respect of Drainage Features

Cemetery site selection relative to Drainage Features, which include oceans, lakes, dams, rivers, streams, gullies, gully heads and marshes, should not be affected in any way by pollutants emanating from a cemetery site. Nor should these features pose a flood hazard to the cemetery. The Suggested Safe Distances to Drainage Features according to Permeability of the Soil are summarised in Table 13 of the geotechnical report.

According to the Council of Geoscience, based on the permeability of the soil, the greatest suggested safe minimum distance from Drainage Features, is 415m. The de-commissioned quarry where water collects is approximately 150m from the nearest test pit (TP 3). Should it be proven during a

HYDROLOGICAL STUDY THAT SUB SURFACE WATER DRAINS INTO THE QUARRY PIT, THE SITE MAY NOT BE DEEMED SUITABLE.

THE POSITIONING WITH RESPECT TO DRAINAGE FEATURES MAY BE RECTIFIED BY INCREASING THE DISTANCE FROM THE QUARRY PIT TO THE PROPOSED AREA AND THEREFORE DECREASING THE SIZE OF THE PROPOSED CEMETERY. THIS CEMETERY LAYOUT PLAN WAS AMENDED SO AS TO ENSURE THAT NO GRAVES ARE PLANNED INSIDE THE SAFE ZONE.

REFERRING TO THE PERMEABILITY DISTRIBUTION ACROSS THE SITE DISPLAYED IN FIGURE 4 OF THE GEOTECHNICAL REPORT, THE SAFE DISTANCE WILL BE ADEQUATE IF THE PROPOSED CEMETERY IS BOUNDED ADJACENT THE FOLLOWING TEST PITS: TP 1 TO TP 10, EXCLUDING TP 11, TP 12 AND TP 13. ACCORDING TO THE CALCULATED PERMEABILITY'S, THE AREA OUTSIDE OF THIS PROPOSED BOUNDARY IS NOT WITHIN THE SAFE DISTANCE SUMMARISED IN TABLE 13 OF THE GEOTECHNICAL REPORT. REFER TO FIGURE 19 BELOW FOR THE PROPOSED BOUNDARY (INSIDE OF MAGENTA LINES).

FIGURE 19: MAP SHOWING THE MINIMUM SAFE DISTANCE THE CEMETERY NEEDS TO BE FROM THE QUARRY DAM DUE TO THE PERMEABILITY DISTRIBUTION ACROSS THE SITE.

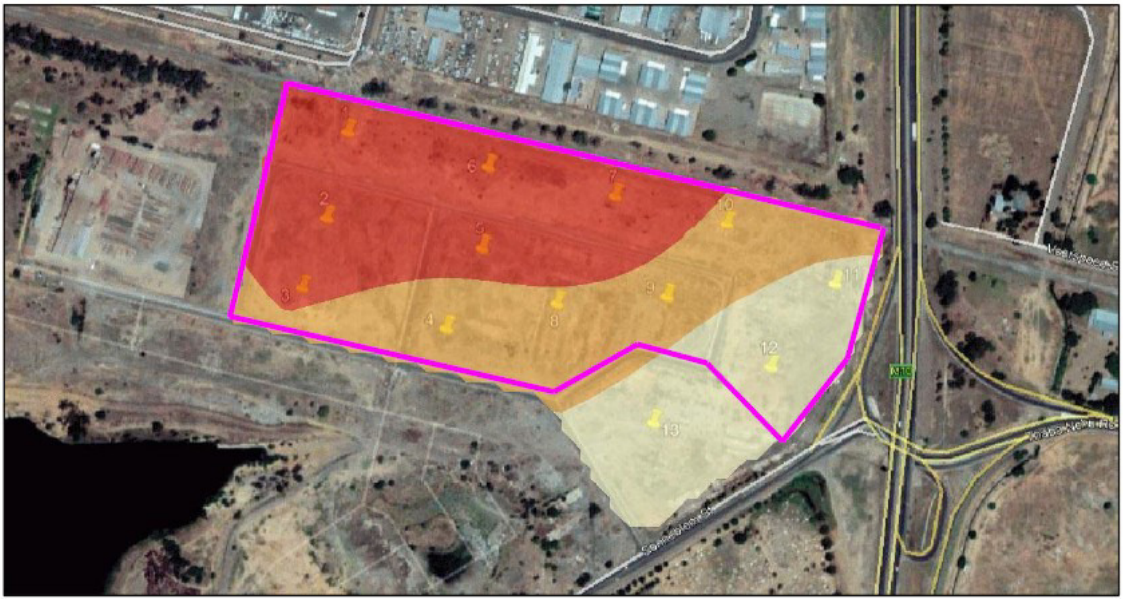


TABLE 3: PERMEABILITY DISTRIBUTION ACROSS THE SITE AS PER FIGURE 19.

Colour on Figure 4	Lower Limit of Calculated Permeability (cm/s)	Upper Limit of Calculated Permeability (cm/s)
	9.785×10^{-5}	1.468×10^{-4}
	5.510×10^{-7}	3.673×10^{-4}
	9.070×10^{-7}	1.361×10^{-6}

THE SIZE OF THE INVESTIGATED AREA IS APPROXIMATELY 13.0HA. THE AREA OF THE PROPOSED SITE DISCUSSED TO ADHERE TO THE SAFE MINIMUM DISTANCE WITH RESPECT TO DRAINAGE FEATURES IS APPROXIMATELY 10.1HA.

3.8 BASAL BUFFER ZONE

DURING THE INVESTIGATION, NO WATER TABLE WAS ENCOUNTERED AND NO REFUSAL BY THE TLB MACHINE OCCURRED. A SHALLOW WATER TABLE CAN BE EXPECTED FROM TIME TO TIME DURING THE RAINY SEASON.
THE DETERMINATION OF THE WATER TABLE DEPTH WAS NOT PART OF THE SCOPE OF THIS INVESTIGATION / REPORT AND THEREFORE WAS NOT DETERMINED. A HYDROLOGICAL STUDY WAS CONDUCTED TO DETERMINE THE DEPTH OF THE WATER TABLE AND TO ENSURE THE 2.500M BASAL BUFFER ZONE (MINIMUM DISTANCE BETWEEN BOTTOM OF DEEPEST GRAVE AND DEPTH OF THE WATER TABLE). SEE APPENDIX D FOR THE GEOHYDROLOGICAL REPORT.

3.9 GRAVE STABILITY

THE CONSISTENCY OF THE MATERIALS ENCOUNTERED DURING THE INVESTIGATION RANGES BETWEEN MEDIUM DENSE TO VERY DENSE AT THE NON-COHESIVE MATERIALS AND FIRM TO STIFF AT THE COHESIVE MATERIALS. THESE MATERIALS WERE STABLE AND WITHOUT ANY SIGNS OF SIDEWALL COLLAPSE DURING THE INVESTIGATION. THIS MAY CHANGE WITH CHANGES IN MOISTURE CONTENT OF THE MATERIALS.

3.10 SOIL WORKABILITY

THE MATERIALS FOUND ACROSS THE SITE IS GENERALLY EASILY WORKABLE UP TO AN AVERAGE DEPTH OF 1.400M RANGING FROM 0.600M TO 1.600M. MATERIALS BELOW THE AVERAGE DEPTH OF 1.400M TEND TO BE: DENSE TO STIFF SANDY LEAN CLAYS (CL); CLAYEY SANDS, CLAYEY SANDS WITH MUDSTONE GRAVEL (SC) WHICH FORMS HARD SLICKENSIDED CLUMPS. THESE STIFF TO DENSE CLAYEY SOILS WILL BE DIFFICULT TO RECOMPACT BACK INTO THE GRAVE AND WILL REQUIRE FILL MATERIAL AFTER PERIODS OF PRECIPITATION AND SOIL BREAKDOWN.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

~~Natural veld - good condition~~[E]	~~Natural veld with scattered aliens~~[E]	NATURAL VELD WITH HEAVY ALIEN INFESTATION[E]	VELD DOMINATED BY ALIEN SPECIES[E]	~~Gardens~~
~~Sport field~~	~~Cultivated land~~	PAVED SURFACE	BUILDING OR OTHER STRUCTURE	BARE SOIL

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. SURFACE WATER

5.1 Topography and Drainage

The Quaternary catchment of the study area (C52F) extends over an approximate area of 146 km². The study area is given in Figure 3 of the attached Geohydrological Report with relation to topographical variation, surrounding quaternary catchments and surface drainage. The Bloemspruit River can be seen flowing in a west to north east direction past the study area. This river is expected to receive flow from storm water within Bloemfontein. Downstream of the study area, the Bloemspruit river confluences with the Renosterspruit and hereafter the Modder River.

Referring to Figure 3 of the Geohydrological Report, an overall topographical decline is clear from the south to the north east, also indicated by surface drainage arrows. Topographical variation vary from 1 379 mamsl in the west to 1 376 mamsl in the north east. No prominent topographical variations are observable downstream of the study area while most varying terrain can be seen north, west and south of the study area (Figure 3). The study area exhibits an estimated slope of 2 - 4 %. This catchment has an associated groundwater recharge rate of 5 -10 mm/a.

Indicate the surface water present on and or adjacent to the site and alternative sites?

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 / Lagoonal wetland	~~YES~~	No	~~UNSURE~~

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

A large Quarry Dam can be found just south of the proposed cemetery site. DWS was consulted and they confirmed that they do not see this dam as a wetland. No wetland occurs on site.

5.2 Climate

The Bloemfontein area normally receives 407 mm of rain per year, with most rainfall only occurring during summer months. This area receives its lowest rainfall during June (2 mm) and the most rainfall during January (68 mm). The monthly distribution of average daily maximum temperatures shows that the average midday temperatures range from 16°C in June and July to 29.2°C in January. The region is the coldest during July when the mercury drops to 0°C on average during the night.

5.3 Surface Area

The surface area of the investigated site is indicated in Figure 14 of the attached Geohydrological Report. From these images, the characteristically flat surface topography is evident. No visual geological outcrops could be recorded on site. The flat topography also suggest a horizontally uniform undisturbed subsurface. See Figure 13 of the Geohydrological Report for Hydro census Sample Points Identified in Relation to the Study Area.

A. EXISTING CEMETERY

DURING THE SITE VISIT, AN EXISTING CEMETERY WAS DOCUMENTED ACROSS THE SOUTH EASTERN BOARDER (SONNEBLOM ROAD) OF THE STUDY AREA. THE CEMETERY APPEARS TO BE IN GOOD CONDITION EXEPT FOR WALLS SURROUNDING THE EXISTING CEMETERY APPEARING DAMAGED. THE AREA COVERS AN AREA OF MORE THAN 6,6 HECTARES. IT IS BELIEVED THAT LOCAL RESIDENTS DAMAGED THE WALL STRUCTURES TO CREATE A SHORTCUT FOR WALKING.

B. SURFACE SITE CS1

A SURFACE WATER SITE (CS1), EXPECTED TO FORM A WETLAND WAS RECORDED TO THE SOUTH (ABOUT 200M) OF THE STUDY AREA (FIGURE 20) AT -29.13 70 69° LATITUDE AND 26.26 21 73° LONGITUDE.

FIGURE 20: PHOTOGRAPHS SHOWING SURFACE WATER SITE CS1 SOUTH OF PROPOSED SITE.

THIS WETLAND IS NOT BELIEVED TO HAVE FORMED NATURALLY BUT RATHER DUE TO MANMADE ACTIVITY. THIS SITE DOES HOWEVER PREDATE GOOGLE SATELLITE IMAGERY PRIOR TO MAY 2009. ON SITE WATER CHEMISTRY ANALYSIS REVEALED THE SITE TO HAVE AN ELECTRICAL CONDUCTIVITY CONCENTRATION OF 90 MS/M, AND A PH LEVEL OF 8,56 AT 20,9°C.

THE SURFACE WATER OBSERVED "WETLAND" MAY IN ALL LIKELIHOOD BE DUE TO A LEAKING PIPELINE ALONG FAULTY INFRASTRUCTURE. IT IS EXPECTED THAT THE WATER TABLE AT THIS SITE IS ELEVATED AT LEAST 10M ABOVE THE WATER TABLE OF THE ADJACENT DAM. IT CAN THEREFORE BE ASSUMED THAT WATER LEAKING FROM THIS ARTIFICIAL WETLAND DRAINS INTO THE ADJACENT DAM. THE VOLUME AND RATE OF WATER FLOW IS UNKNOWN.

A COMMENT WAS RECEIVED THAT THE SITE REPRESENTS AN OLD RECREATIONAL WATER SITE WHICH MAY EXPLAIN THE LOCAL SURFACE WATER ACCUMULATION. IT IS HIGHLY RECOMMENDED THAT THE CONTINUOUS WATER SOURCE TO THIS SITE BE IDENTIFIED AND MITIGATED. SHOULD THIS SITE BE USED FOR RECREATION IN THE FUTURE, APPROPRIATE LINING SHOULD BE INSTALLED TO RESTRICT WATER LEACHING.

C. SURFACE SITE CS2

A SURFACE WATER SITE (CS2) WAS IDENTIFIED FOR SCREENING SOUTH WEST (ABOUT 400M) OF THE INVESTIGATED SITE. CS2 CAN BE FOUND AT COORDINATES -29.13 56 86° LATITUDE AND 26.25 44 59° LONGITUDE AND IS ILLUSTRATED IN FIGURE 21 BELOW.

FIGURE 21: PHOTOGRAPHS SHOWING SURFACE WATER SITE CS2 SOUTH WEST OF PROPOSED SITE.

THIS SITE REVEALED AN EC CONCENTRATION OF 110 MS/M AND A PH OF 7.58 AT 19.8°C. THESE CONCENTRATIONS APPEAR ELEVATED FROM WHAT IS EXPECTED OF SURFACE WATER IN THE AREA. IT SHOULD ALSO BE NOTED THAT NO RAINFALL HAS OCCURRED WITHIN A FEW MONTHS PRIOR TO THE SITE VISIT, THEREFORE EXCLUDING THE POSSIBILITY OF RAINWATER ACCUMULATION.

WATER LEVELS AT CS2 AND THE ADJACENT TRENCH APPEAR TO BE LINKED. THE RECORDED WATER SITE HAS A STRONG SEWAGE ODOUR WHILE GREEN ALGAE GROWTH IS NOTICEABLY HIGH. IT IS EXPECTED THAT WATER FROM THIS SITE ORIGINATES FROM A LEAKING SEWAGE LINE. THE WATER IS EXPECTED TO EVENTUALLY SEEP INTO THE ADJACENT DAM, POLLUTING THE WATER BODY. THE VOLUME AND RATE OF WATER FLOW IS UNKNOWN. IT IS HIGHLY RECOMMENDED THAT THE WATER SOURCE BE IDENTIFIED AND MITIGATED.

D. SURFACE SITE CS3

AN ADDITIONAL SURFACE WATER SITE (CS3) WAS SELECTED FOR SCREENING, 2KM NORTH WEST AND UPSTREAM OF THE INVESTIGATED SITE. THIS SITE IS LOCATED AT -29.11 94 44° LATITUDE AND 26.23 75 00° LONGITUDE. WATER SCREENING REVEALED AN EC CONCENTRATION OF 48 MS/M AND A PH OF 8,13 AT 22°C. THESE CONCENTRATIONS MAY BE ATTRIBUTED TO RIVER CHANNEL POLLUTION VIA GENERAL WASTE DUMPING WITHIN THE WATER COURSE AS SEEN IN FIGURE 21 BELOW.

FIGURE 21: PHOTOGRAPHS SHOWING SURFACE WATER SITE CS3 NORTH OF PROPOSED SITE.

E. SURFACE SITE CS4 (QUARRY DAM)

SURFACE SITE (CS4) WAS SELECTED FOR SCREENING, SOUTH (130M) OF THE INVESTIGATED SITE (FIGURE 22). THIS SITE IS LOCATED AT -29.13 73 46° LATITUDE AND 26.25 67 06° LONGITUDE. WATER SCREENING REVEALED AN EC CONCENTRATION OF 200 MS/M AND A PH OF 6.95 AT 19.4°C.

FIGURE 22: PHOTOGRAPHS SHOWING SURFACE WATER SITE CS4 SOUTH OF PROPOSED SITE.

LABORATORY BACTERIOLOGICAL AND ADDITIONAL CHEMISTRY ANALYSIS WAS DONE ON A WATER SAMPLE COLLECTED FROM CS4 (SEE APPENDIX B OF ATTACHED GEOHYDROLOGICAL REPORT). FROM THIS ANALYSIS, ELEVATED FAECAL COLIFORMS, E.COLI AND EC VALUES ARE ELEVATED. INDICATING THAT THE SITE IS CONTAMINATED WITH ELEVATED CONCENTRATIONS OF FAECAL ORIGIN. HISTORIC WATER ANALYSES DONE AT THIS SITE IN JULY 2016 INDICATED THAT SITE CS4 WAS OF GOOD QUALITY AND IS PROVIDED IN APPENDIX C OF ATTACHED GEOHYDROLOGICAL REPORT. IT IS EXPECTED THAT THE POLLUTION SOURCE MAY HAVE ORIGINATED SINCE THIS DATE.

F. SURFACE SITE CS5

DURING THE SITE VISIT, MULTIPLE MANHOLES WERE RECORDED (CS5) WEST OF THE STUDY AREA (FIGURE 23). THESE HOLES EXTEND FROM WEST TO EAST IN A LINEAR EXTENT. THESE HOLES APPEARED TO BE VISIBLY 4-5M DEEP AND COULD BE USED AS A REFERENCE TO THE LOCAL GROUNDWATER TABLE DEPTH. NO MOISTURE WAS VISIBLE WITHIN THESE HOLES AT A DEPTH OF 4-5M. IT CAN THEREFORE BE ASSUMED THAT THE LOCAL GROUNDWATER TABLE EXCEEDS 4- 5MBGL.

FIGURE 23: PHOTOGRAPHS SHOWING MULTIPLE MANHOLES THAT WERE RECORDED (CS5) WEST OF THE PROPOSED SITE.

G. SURFACE SITE CS5

A SOIL PROFILE WAS RECORDED DURING THE SITE VISIT. THIS PROFILE WAS RECORDED VISUALLY FROM THE DAM WALL OF CS4 (FIGURE 24). FROM THIS PROFILE, AS WELL AS OTHER PROFILES THE UNIFORM HORIZONTALLY EXTENDING SEDIMENTARY SUBSURFACE BENEATH THE STUDY AREA IS EVIDENT WITH NO EVIDENCE SHALLOW INTRUSIVE GEOLOGICAL STRUCTURES. THE SOIL PROFILE PRESENTED IN FIGURE 24 APPEARS TO REPRESENT AT LEASE A 10M PROFILE OF A SANDY CLAY SOIL TYPE, ALSO SUGGESTING A LOCAL WATER TABLE DEEPER THAN 10MBGL WITH NO VISIBLE EVIDENCE OF GROUNDWATER INFLOW.

FIGURE 24: PHOTOGRAPHS SHOWING THE SOIL PROFILE OF THE QUARRY DAM WALL SOUTH OF THE PROPOSED SITE.

SITE SOIL PROFILING WAS CONDUCTED BY SIMLAB (PTY) LTD –GEOTECHNICAL SERVICES. PROFILING SUGGEST AN OVERALL SANDY CLAY- CLAY SOIL TYPE.

SURFACE SITES REVEALED TWO LOCAL AREAS (CS1 & CS2) TO REPRESENT WATER ACCUMULATION ADJACENT SOUTH AND WEST OF THE MAJOR DAM (CS4). THIS MAY BE AN INDICATOR OF INFRASTRUCTURE FAILURE IN THE FORM OF LEAKING PIPES AND SEWER SYSTEMS. BOTH THESE SITES ARE EXPECTED TO SEEP EFFLUENT AND/OR RAW WATER INTO THE ADJACENT DAM. IT IS HIGHLY RECOMMENDED THAT THESE WATER SOURCES BE IDENTIFIED AND MITIGATED.

DAM (CS4) WATER QUALITIES RAPPEARED TO BE POLLUTED BY FAECAL COLIFORMS AND E.COLI OF FAECAL ORIGIN DURING THE TIME OF THE SITE VISIT. THIS MAY BE AS A RESULT OF LOCALS OPERATING IN THE OPEN AREA (UNRESTRICTED ACCESS) OR AS A RESULT OF RECORDED SEEPAGE SITES. IT SHOULD BE NOTED THAT HISTORIC SAMPLING INDICATED THE SITE TO BE IN GOOD CHEMICAL AND BACTERIOLOGICAL CONDITION AT JULY 2016. WATER QUALITY DEGRADATION IS EXPECTED TO HAVE OCCURRED SINCE THIS DATE.

A VISUAL SOIL PROFILE ANALYSIS WAS CONDUCTED ON THE CLOSE BY DAM (CS4) WALL. THIS PROFILE (CS6) REPRESENT AN UNIFORM HORIZONTALLY EXTENDING SEDIMENTARY SUBSURFACE BENEATH THE STUDY AREA WITH NO EVIDENCE SHALLOW INTRUSIVE GEOLOGICAL STRUCTURES. THE SITE WAS FOUND TO HAVE AN OVERALL SANDY CLAY-CLAY SOIL TYPE.

5.4 RECOMMENDATIONS ON SURFACE WATER

BASED ON HYDROGEOLOGICAL FINDINGS, THE PROPOSED CEMETERY DEVELOPMENT CAN ONLY BE CONSIDERED IF THE FOLLOWING RECOMMENDATIONS ARE STRICTLY ADHERED TO:

- SPECIAL ATTENTION SHOULD BE DIRECTED AT STORMWATER DIVERSION STRUCTURES TO RESTRICT POLLUTANTS SUCH AS HYDROCARBONS, SOAPS AND OTHER WASTE WATER CHEMICALS FROM SEEPING INTO

THE SUBSURFACE AND UNDERLYING GROUNDWATER TABLE DURING CONSTRUCTION AND OPERATIONAL PHASE.

- WALLS OR FENCING SHOULD BE CONSTRUCTED AROUND THE PROPOSED CEMETERY DEVELOPMENT TO RESTRICT LOCALS FORM STROLLING THROUGH THE AREA AND CAUSING UNNECESSARY DAMAGE TO THE PROPERTY AND/OR LITTERING.
- TREES ON THE NORTHERN BORDER OF THE STUDY AREA SHOULD PREFERABLY BE KEPT IN PLACE WITH THEIR DEEP ROOT SYSTEMS INTACT TO ACT AS A CONTAMINANT BUFFER FOR GROUNDWATER FLOW TOWARDS THE NORTH.
- IT IS HIGHLY RECOMMENDED THAT THE WATER SOURCE TO SITE CS2 AS PER GEOHYDROLOGICAL REPORT BE IDENTIFIED AND MITIGATED.
- SHOULD SITE CS1 AS PER GEOHYDROLOGICAL REPORT BE USED FOR RECREATION IN THE FUTURE, APPROPRIATE LINING SHOULD BE INSTALLED TO RESTRICT WATER LEACHING
- PEOPLE RESPONSIBLE FOR MANAGEMENT PROCESSES IN A CEMETERY SHOULD:
    - DEVELOP A MODEL FOR STORING SPECIAL WASTE, I.E., HUMAN CORPSES,
    - PREVENT MIGRATION OF DECOMPOSITION PRODUCTS INTO THE SUBSTRATE,
    - EMPLOYEES OF FUNERAL HOMES SHOULD USE APPROPRIATE BOOTS, GLOVES AND FACE MASKS DURING WORK RELATED TO BURIALS OR EXHUMATIONS.
- ANY UN-MONITORED INCREASED ABSTRACTION OF GROUNDWATER BY THE POSSIBLE FUTURE DRILLING OF BOREHOLES WITHIN A 1KM RADIUS OF THE SITE CAN INCREASE FLOW GRADIENTS AND VELOCITIES AND WILL HAVE TO BE DISCOURAGED SHOULD IT BE CONSIDERED BY THE MUNICIPALITY OR LAND USERS.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

~~Natural area~~	DAM OR RESERVOIR	~~Polo fields~~
LOW DENSITY RESIDENTIAL	~~Hospital/medical centre~~	~~Filling station~~ [H]
MEDIUM DENSITY RESIDENTIAL	~~School~~	~~Landfill or waste treatment site~~
~~High density residential~~	~~Tertiary education facility~~	~~Plantation~~
~~Informal residential~~ [A]	CHURCH	AGRICULTURE
RETAIL COMMERCIAL & WAREHOUSING	~~Old age home~~	RIVER, STREAM OR WETLAND
LIGHT INDUSTRIAL	~~Sewage treatment plant~~ [A]	~~Nature conservation area~~
~~Medium industrial~~ [AN]	~~Train station or shunting yard~~ [N]	~~Mountain, koppie or ridge~~
~~Heavy industrial~~ [AN]	RAILWAY LINE [N]	~~Museum~~
~~Power station~~	MAJOR ROAD (4 LANES OR MORE) [N]	~~Historical building~~
~~Office/consulting room~~	~~Airport~~ [N]	~~Protected Area~~
~~Military or police base/station/compound~~	~~Harbour~~	GRAVEYARD
~~Spoil heap or slimes dam~~ [A]	~~Sport facilities~~	~~Archaeological site~~
QUARRY, SAND OR BORROW PIT	~~Golf course~~	Other land uses (describe)

If any of the boxes marked with an "N "are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

RAILWAY LINE [N] – THE CEMETERY DEVELOPMENT WILL NOT HAVE ANY IMPACT ON THE RAILWAY LINE SITUATED JUST NORTH OF THE PROPOSED SITE.

MAJOR ROAD (4 LANES OR MORE) N - SEE THE TRAFFIC IMPACT ASSESSMENT THAT WAS DONE FOR THE LARGER AREA. NO IMPACT.

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		NO
Core area of a protected area?		NO
Buffer area of a protected area?		NO
Planned expansion area of an existing protected area?		NO
Existing offset area associated with a previous Environmental Authorisation?		NO
Buffer area of the SKA?		NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:		NO
		Uncertain
DR LOYD ROSSOUW WAS APPOINTED. SEE ANNEXURE D ATTACHED FIR HIS REPORT.		

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

ACCORDING TO THE ATTACHED HERITAGE IMPACT ASSESSMENT THE FOLLOWING:

THE STONE AGE ARCHAEOLOGICAL RECORD OF MODDER RIVER CATCHMENT WEST OF BLOEMFONTEIN SPANS BACK TO THE EARLY MIDDLE STONE AGE. ALONG MUCH OF THE COURSE OF MODDER RIVER AND ITS TRIBUTARIES, ALLUVIAL DEPOSITS CONTAIN NUMEROUS OCCURRENCES OF IN SITU MIDDLE AND LATER STONE AGE MATERIAL ERODING OUT OF THE OVERBANK SEDIMENTS. THE INCIDENCE OF SURFACE SCATTERS USUALLY DECREASES AWAY FROM LOCALIZED AREAS SUCH AS ALLUVIAL CONTEXTS AND DOLERITE-SHALE CONTACT ZONES WHEN STONE TOOLS LARGELY OCCUR AS CONTEXTUALLY DERIVED INDIVIDUAL FINDS IN THE OPEN VELD. STONE TOOLS ARE MOSTLY MADE OF HORNFELS, A FINE-GRAINED ISOTROPIC ROCK FOUND IN THE HOT-CONTACT ZONE BETWEEN THE DOLERITES AND SHALES IN THE AREA. THE HISTORICAL FOOTPRINT ALONG THE SOUTHERN OUTSKIRTS OF BLOEMFONTEIN IS MOSTLY RELATED TO THE GROWTH OF TOWNSHIPS AND EARLY INDUSTRIAL ACTIVITIES. HISTORICAL MAPS OF THE AREA INDICATE NO DWELLINGS WITHIN THE STUDY AREA AT THAT TIME AND A BRIEF SURVEY OF THE TERRAIN INDICATES THAT, THE SITE HAS BEEN EXTENSIVELY DISTURBED BY HUMAN ACTIVITIES, AND ESPECIALLY AS A RESULT OF ACTIVITIES RELATED TO AN OLD BRICKWORKS PLANT THAT WAS LOCATED IMMEDIATELY SOUTH OF THE PROPOSED IMPACT AREA (SEE FIG. 2 & 3 OF THE ATTACHED HERITAGE IMPACT ASSESSMENT). POTENTIAL ARCHAEOLOGICAL IMPACT AT THE SITE IS CONSIDERED TO BE NON-EXISTENT. IT IS RECOMMENDED THAT A FULL PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT IS NOT REQUIRED AS A PREREQUISITE FOR THE PLANNED DEVELOPMENT.

THE PALAEONTOLOGICAL FOOTPRINT IN THE REGION IS PRIMARILY REPRESENTED BY PERMIAN KAROO FOSSILS PRESERVED WITHIN BEDROCK SEDIMENTARY STRATA, AS WELL AS LATE QUATERNARY MAMMALIAN FOSSILS PRESERVED WITHIN SUPERFICIAL ALLUVIAL DEPOSITS (E.G. RIVER GRAVELS AND OVERBANK SEDIMENTS). QUATERNARY-AGE SURFACE DEPOSITS IN THE REGION CAN BE HIGHLY FOSSILIFEROUS IN PLACES, ESPECIALLY THOSE THAT ARE DIRECTLY RELATED TO FLUVIAL ENVIRONMENTS ALONG MAJOR RIVER COURSES, OR NEAR SPRING AREAS AND PANS. FOSSIL ASSEMBLAGES, INDIVIDUAL SPECIMENS AND FOSSILIZED HYENA BURROWS HAVE BEEN FOUND PRESERVED IN LATE PLEISTOCENE ALLUVIAL SEDIMENTS OF THE NEARBY MODDER RIVER AND ITS TRIBUTARIES. THE SITE IS LOCATED WITHIN AN OUTCROP AREA OF POTENTIALLY FOSSIL-BEARING BEAUFORT GROUP (ADELAIDE SUBGROUP) STRATA. THESE SEDIMENTARY ROCKS ARE ASSIGNED TO THE DICYNODON ASSEMBLAGE ZONE (KITCHING 1995). THIS BIOZONE IS CHARACTERIZED BY THE PRESENCE OF A DISTINCTIVE AND FAIRLY COMMON DICYNODONT GENUS. THERAPSIDS AND OTHER VERTEBRATE FOSSILS FROM THIS BIOZONE ARE USUALLY FOUND AS DISPERSED AND ISOLATED SPECIMENS IN MUDROCK HORIZONS, ASSOCIATED WITH AN ABUNDANCE OF CALCAREOUS NODULES. PLANT FOSSILS (DADOXYLON, GLOSSOPTERIS) AND TRACE FOSSILS (ARTHROPOD TRAILS, WORM BURROWS) ARE ALSO PRESENT. THE SEDIMENTS ASSIGNED TO THE DICYNODON AZ ARE ASSOCIATED WITH STREAM DEPOSITS CONSISTING OF FLOODPLAIN MUDSTONES AND SUBORDINATE, LENTICULAR CHANNEL SANDSTONES.

A BRIEF INSPECTION OF THE SITE INDICATED THAT THE UNDERLYING GEOLOGY IS CAPPED BY WELL-DEVELOPED SUPERFICIAL DEPOSITS THAT ARE LARGELY MADE UP OF (PALAEONTOLOGICALLY STERILE) QUATERNARY WIND-BLOWN SANDS AND HIGHLY DEGRADED RESIDUAL SOILS. THE SITE LIES ON LOW RELIEF TERRAIN WITH NO BEDROCK EXPOSURE PRESENT. GIVEN THE DEPTH OF THE OVERBURDEN, WHICH IS NOT CONSIDERED TO BE PALAEONTOLOGICALLY SENSITIVE, IT IS RECOMMENDED THAT THE PLANNED DEVELOPMENT IS EXEMPT FROM A FULL PHASE 1 PALAEONTOLOGICAL IMPACT ASSESSMENT. IT IS RECOMMENDED THAT THE PLANNED DEVELOPMENT CAN PROCEED, BUT SHOULD ANY EXCAVATION LARGER THAN 1 M² AND EXCEEDING DEPTHS OF MORE THAN 1 M² INTO UNWEATHERED/FRESH BEDROCK OCCUR, MONITORING BY A PROFESSIONAL PALAEONTOLOGIST WILL BE REQUIRED IN ORDER TO INSPECT EXPOSED BEDROCK FEATURES FOR POTENTIAL FOSSILS.

Will any building or structure older than 60 years be affected in any way?		NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?		NO

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

Socio Economic Status						
Year	Housing Backlog as proportion of current demand	Unemployment Rate (*Narrow definition)*	Employed / Population Ratio (Absorption)	Labour Force Participation Rate	Poverty Head Count	Intensity of Poverty
2015/16	30,954	28.8%	47,3%	66.3%	5%	41.1%

Source: Community Survey 2016 & Quarterly Labour Force Survey and Stats SA.

THERE ARE MORE EMPLOYED PEOPLE IN MANGAUNG THAN THOSE WHO ARE UNEMPLOYED FROM THE ECONOMICALLY ACTIVE GROUPS, THE CHALLENGE IS THAT MOST PEOPLE ARE EMPLOYED IN LOW SKILLED JOBS BECAUSE OF AMONGST OTHER THINGS, THEIR LEVELS OF EDUCATION.

Economic profile of local municipality:

THE MANGAUNG METROPOLITAN MUNICIPALITY IS A CATEGORY A MUNICIPALITY. IT IS SITUATED IN THE FREE STATE PROVINCE, IN THE CENTRAL INTERIOR OF SOUTH AFRICA. THE FREE STATE IS BORDERED BY THE GAUTENG, EASTERN CAPE, NORTHERN CAPE, KWAZULU-NATAL AND NORTH WEST PROVINCES, AS WELL AS BY THE NEIGHBOURING COUNTRY OF LESOTHO. MANGAUNG, MEANING 'PLACE OF THE CHEETAHS', ACCENTUATES THE VIBRANT, DYNAMIC AND ENERGETIC CHARACTER OF THE TOURISM INDUSTRY IN THE 'AT THE HEART OF IT ALL'.

THE ECONOMY IS STRONGLY DRIVEN BY THE GOVERNMENT SECTOR, WHICH HAS SEEN THE FASTEST GROWTH IN THE LAST FIVE YEARS AS A RESULT OF INCREASED GOVERNMENT PROGRAMMES IN LIVELIHOODS IMPROVEMENT INTERVENTIONS. THE FINANCE SECTOR IS THE SECOND-FASTEST GROWING SECTOR DUE TO VERY ACTIVE ESTATE AND CONSTRUCTION ACTIVITIES.

SMALL BUSINESSES HAVE A MAJOR ROLE TO PLAY IN THE SOUTH AFRICAN, AND ESPECIALLY THE MANGAUNG, ECONOMY IN TERMS OF EMPLOYMENT CREATION, INCOME GENERATION AND OUTPUT GROWTH. IT IS ESTIMATED THAT MORE THAN 12 MILLION PEOPLE IN SOUTH AFRICA ARE ACTIVELY INVOLVED IN THE SMME SECTOR, WHICH ACCOUNTS FOR APPROXIMATELY 60% OF ALL EMPLOYMENT IN THE ECONOMY AND 40% OF OUTPUT.

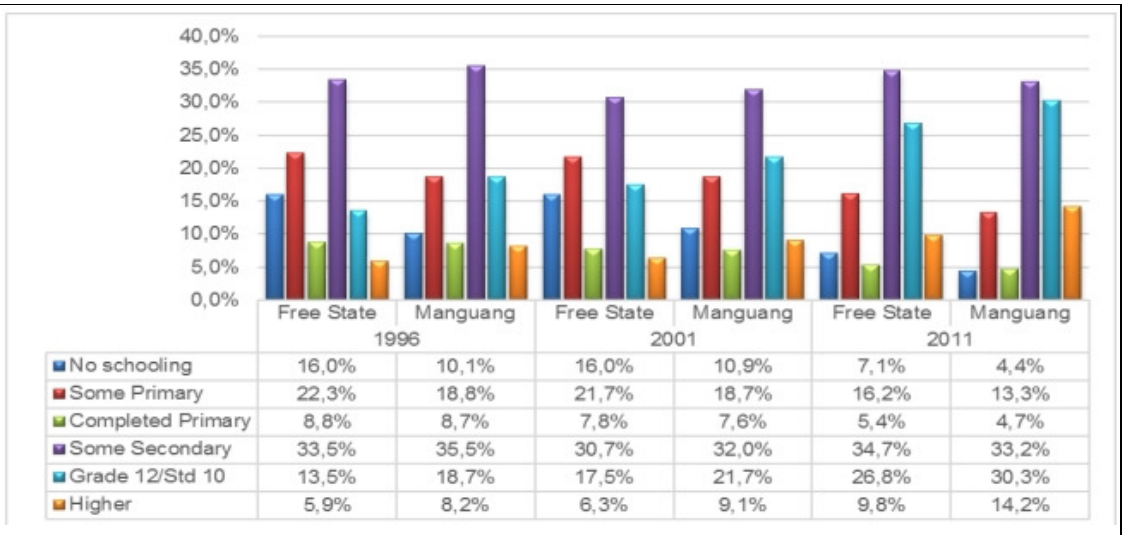
IN AN AREA SUCH AS MANGAUNG, WITH ITS RELATIVELY HIGH LEVELS OF UNEMPLOYMENT AND POVERTY, IT CAN BE EXPECTED THAT THE SMME SECTOR PLAYS AN EVEN MORE IMPORTANT ROLE IN JOB CREATION AND POVERTY ALLEVIATION. THE INFORMAL ECONOMY MAKES AN IMPORTANT CONTRIBUTION TO THE ECONOMIC AND SOCIAL LIFE OF MANGAUNG. DUE TO THE DECLINE IN FORMAL EMPLOYMENT AND CONSEQUENT INCREASE IN UNEMPLOYMENT, MANY PEOPLE SEEK ALTERNATIVE MEANS OF EARNING AN INCOME.

MAIN ECONOMIC SECTORS: COMMUNITY SERVICES (35.3%), FINANCE (26.8%), TRADE (16%), TRANSPORT (11.8%), MANUFACTURING (3.5%).

THE PROPOSED DEVELOPMENT CREATES OPPORTUNITIES FOR THE LOCAL ECONOMY, ESPECIALLY DURING THE CONSTRUCTION PHASE OF THE DEVELOPMENT. THE CAPITAL INVESTMENT INTO THE DEVELOPMENT OF THE PROPOSED DEVELOPMENT WILL RESULT IN THE LOCAL ECONOMY BEING SIGNIFICANTLY STIMULATED. BUILDING MATERIALS (DURING THE CONSTRUCTION PHASE) AS WELL AS GOODS AND SERVICES NEEDED FOR THE OPERATIONAL PHASE WILL BE BOUGHT FROM BUSINESSES AND INDUSTRIES IN THE AREA, WHICH WILL RESULT IN THE OVERALL PRODUCTION OF THESE BUSINESSES INCREASING. AS A RESULT OF THE NEED TO INCREASE PRODUCTION, MORE PEOPLE WILL NEED TO BE HIRED, WHICH WILL RESULT IN INCREASED HOUSEHOLD INCOMES. AS A RESULT OF INCREASED HOUSEHOLD INCOMES, THE POTENTIAL BUYING POWER OF THE LOCAL AREA INCREASES, WITH RESULTS IN FURTHER BUSINESS SALES IN THE AREA. THESE MULTIPLIER EFFECTS THEREFORE CAUSE THE LOCAL ECONOMY TO GROW EVEN FURTHER.

THE PROPOSED DEVELOPMENT WILL THEREFORE CONTRIBUTE TO SUSTAINABLE ECONOMIC GROWTH IN THE STUDY AREA.

Level of education:



	Free State 1996	Manguang 1996	Free State 2001	Manguang 2001	Free State 2011	Manguang 2011
No schooling	16,0%	10,1%	16,0%	10,9%	7,1%	4,4%
Some Primary	22,3%	18,8%	21,7%	18,7%	16,2%	13,3%
Completed Primary	8,8%	8,7%	7,8%	7,6%	5,4%	4,7%
Some Secondary	33,5%	35,5%	30,7%	32,0%	34,7%	33,2%
Grade 12/Std 10	13,5%	18,7%	17,5%	21,7%	26,8%	30,3%
Higher	5,9%	8,2%	6,3%	9,1%	9,8%	14,2%

ACCORDING TO FIGURE ABOVE, THE NUMBER OF PERSONS WITH JUST A PRIMARY EDUCATION AND BELOW CONSTITUTED JUST ABOVE 46% IN 1996 IN THE FREE STATE. THE SAME PERSONS WITH COMPLETED PRIMARY AND BELOW IN THE MANGAUNG METRO CONSTITUTED 37% PLUS, WHICH INDICATES THAT MANGAUNG METRO WAS BETTER OFF THAN THE PROVINCE IN TERMS OF SAME COHORT OF COMPLETED PRIMARY AND BELOW FOR BOTH FREE STATE AND MANGAUNG HAVE DRASTICALLY IMPROVED IN 2011, WITH 28.7% AND 22.4% RESPECTIVELY. THE PERCENTAGE OF PERSONS WITH SOME SECONDARY SCHOOLING, BUT WHO HAVE NOT PASSED MATRIC HAS REMAINED IN MID-THIRTIES FOR BOTH FREE STATE AND MANGAUNG METRO OVER THE ENTIRE REVIEW PERIOD (33.5% AND 35.5% IN 1996 AND 34.7% AND 33.2% IN 2011 RESPECTIVELY), INDICATING MIXED RESULTS FOR THAT SECTION OF SCHOOLING.

THE GENERAL INDICATION IS THAT PEOPLE ARE ABLE TO PROCEED TO SECONDARY SCHOOL, BUT ARE UNABLE TO COMPLETE THEIR STUDIES. THE CONGESTION IN SECONDARY SCHOOL IN TERMS OF THE LEVEL OF EDUCATION ACHIEVED IS A PRELUDE TO PROBLEMS IN EDUCATION SYSTEM INDICATED BY LARGE DROPOUTS AT THAT LEVEL. HOWEVER, THE NUMBER OF THOSE COMPLETING SECONDARY SCHOOLING FOR FREE STATE AND MANGAUNG METRO HAS INCREASED FROM 13.5% AND 18.7% IN 2004 TO 26.8% AND 30.3% IN 2014 RESPECTIVELY; WHICH IS AN

INCREASE OF 13.3 PERCENTAGE POINTS AND 11.6 PERCENTAGE POINTS RESPECTIVELY. IN TERMS OF THOSE WITH SOME SKILLS, MANGAUNG METRO HAD A BETTER ADVANTAGE OVER FREE STATE IN TERMS OF THE NUMBER AND THE PERCENTAGE OF GROWTH (5.9% TO 9.8% AND 8.2% TO 14.2% RESPECTIVELY), IS REFLECTIVE OF THE ECONOMIC ADVANTAGE THAT MANGAUNG METRO HAS OVER THE ENTIRE PROVINCE.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R18 000 000
What is the expected yearly income that will be generated by or as a result of the activity?	R3 500 000
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	YES
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	3000 MAN DAYS EMPLOYMENT
What is the expected value of the employment opportunities during the development and construction phase?	R1 200 000
What percentage of this will accrue to previously disadvantaged individuals?	80%
How many permanent new employment opportunities will be created during the operational phase of the activity?	5
What is the expected current value of the employment opportunities during the first 10 years?	R5 400 000
What percentage of this will accrue to previously disadvantaged individuals?	80%

9. BIODIVERSITY

Please 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 activity/ies. 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, Ph (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) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
~~Critical Biodiversity Area (CBA)~~	~~Ecological Support Area (ESA)~~	~~Other Natural Area (ONA)~~	NO NATURAL AREA REMAINING (NNR)	THE 2015 FREE STATE BIODIVERSITY PLAN SHOWS THE SITE AS DEGRADED.

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	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%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	
Degraded (includes areas heavily invaded by alien plants)	90%	THE PROPOSED SITE IS SITUATED WITHIN THE URBAN EDGE OF BLOEMFONTEIN AND IS SURROUNDING BY OTHER DEVELOPMENTS AND ROADS. THE SITE IS CURRENTLY IN A STATE WITH LOTS OF LITTER AND BUILDING RUBBLE THAT CAN BE FOUND THEREON. THE VEGETATION IS ALSO COMPRISED OF LOTS OF INVADER PLANT SPECIES
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	10%	BUILDINGS; ROADS ETC

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and
(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems					
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	~~Critical~~ ~~Endangered~~ ~~Vulnerable~~ LEAST THREATENED	~~Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)~~			~~Estuary~~		~~Coastline~~
			NO	~~UNSURE~~		NO	NO

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

THE GENERAL VEGETATION IN THE AREA IS THAT OF BLOEMFONTEIN GRASSLAND BUT IT IS HEAVILY DEGRADED DUE TO ILLEGAL LITTERING BY HOUSEHOLD AND BUILDING RUBBLE. NO AQUATIC SYSTEMS ARE PRESENT THE PROPOSED SITE AND NO IMPORTANT BIODIVERSITY FEATURES WAS IDENTIFIED TO OCCUR ON THE PROPOSED SITE. THE GRASSLAND VEGETATION ON SITE IS HIGHLY INVADED BY ALIEN SPECIES AS THE PROPOSED SITE WAS PREVIOUSLY DISTURBED. NO IMPORTANT BIODIVERSITY FEATURES OCCUR ON THE PROPOSED SITE – NO THREATENED SPECIES OR SPECIAL HABITATS EXISTS ON SITE.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	EXPRESS	
Date published	5 FEBRUARY 2020	
Site notice positions	**Latitude**	**Longitude**
	29 08 14.21 S 29 08 01.38 S	26 15 51.88 E 26 15 10.71 E
Date placed	5 FEBRUARY 2020	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 982

MAIL DROP (INFORMATION DOCUMENT AND COMMENTS AND CONCERNS FORM) WAS CONDUCTED TO ALL DIRECTLY ADJACENT LANDOWNERS SURROUNDING THE PROPOSED SITE. A SITE NOTICE BOARD WAS ALSO PLACED AT THE PROPOSED SITE AND AT OTHER STRATEGIC LOCATIONS.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 982

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
COUNCILLOR	WARD COUNCILLOR	

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
WARD COUNCILLOR - •	•
MMM HEALTH SECTION - JACO LAMPRECHT •	•

MMM - G FRITZ; NELSON MOFOKENG; BILLY BARNES; GEORGE MUSUABI; JEFF LETSIE; SONNET PIECHACZEK	
•	•
DEPARTMENT OF POLICE, ROADS AND TRANSPORT	
•	•
DESTEA – DR NACELLE COLLINS	
•	•
MANGAUNG METRO MUNICIPALITY – PLANNING DIRECTORATE	
•	•
MANGAUNG METRO MUNICIPALITY – N SHAPU AT AIR POLLUTION	
•	•
CENTLEC	
•	•
DWS –MR G JANSE VAN NOORDWYK	
•	•
DEPARTMENT OF HEALTH	
•	•
SAHRA	
•	•

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
DEPARTMENT OF WATER AND SANITATION.	G JANSE VAN NOORDWYK	051 – 405 9162	086 634 6406	JANSEVANN@DWS.GOV.ZA	P O BOX 528, BFN, 9300
DESTEA	GRACE MKOSANA	051 - 4004912	051 - 4004842	MKHOSANA@DETEA.FS.GOV.ZA	PRIVATE BAG X20801 BLOEMFONTEIN 9300
MANGAUNG METRO MUNICIPALITY – PLANNING SECTION	ATTIE VAN HEERDEN	051 – 405 8577	051 – 405 8882	ATTIE.VANHEERDEN@MANGAUNG.CO.ZA	P O BOX 3704 BLOEMFONTEIN 9300
MANGAUNG METRO MUNICIPALITY – ENVIRONMENTAL SECTION	M KOLOBE	051 – 405 8577	051 – 405 8882	ATTIE.VANHEERDEN@MANGAUNG.CO.ZA	P O BOX 3704 BLOEMFONTEIN 9300
MANGAUNG METRO MUNICIPALITY – AIR QUALITY	NEO SHAPU	051 – 405 8577	051 – 405 8882	NEO.SHAPU@MANGAUNG.CO.ZA	P O BOX 3704 BLOEMFONTEIN 9300
MANGAUNG METRO MUNICIPALITY – HEALTH SECTION	JACO LAMPRECHT	051 – 405 8577	051 – 405 8882	JACO.LAMPRECHT@MANGAUNG.CO.ZA	P O BOX 3704 BLOEMFONTEIN 9300
DEPARTMENT OF HEALTH	MR TL LESHABANE	078 223 7678 051 408 1540	-	LESHABANTL@FSHEALTH.GOV.ZA	P O BOX 277, BLOEMFONTEIN, 9300
SAHRA	R REDELSTORFF	021 – 202 8651	021 – 202 4509	RREDELSTORFF@SAHRA.ORG.ZA	P O BOX 4637, CAPE TOWN 8000

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4. In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.
Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

THIS SECTION OF THE REPORT IDENTIFIES THE POTENTIAL IMPACTS THAT CAN EMANATE FROM THE PLANNING, CONSTRUCTION, OPERATION AND POSSIBLE DECOMMISSIONING OF THE PROPOSED CEMETERY DEVELOPMENT AND ASSOCIATED INFRASTRUCTURE ON THE BIOPHYSICAL, SOCIO-ECONOMIC AND CULTURAL AND HERITAGE RESOURCES ENVIRONMENT.

THE IDENTIFICATION OF THE IMPACTS WAS BASED ON THE NATURE, EXTENT, DURATION AND SIGNIFICANCE OF THE CONSEQUENCES OF THE ACTIVITIES AND PROCESSES ON VARIOUS COMPONENTS AND ASPECTS OF THE NATURAL AND HUMAN ENVIRONMENTS. FURTHERMORE, THE ENVIRONMENTAL IMPACTS IDENTIFICATION TOOK COGNISANCE OF POTENTIAL IMPACTS CAUSED BY THE CONSTRUCTION OF FACILITIES OR INFRASTRUCTURE, INCLUDING ASSOCIATED STRUCTURES FOR THE ACTIVITIES AND CUMULATIVE IMPACTS ON THE RECEIVING ENVIRONMENT, FOR THE CONSTRUCTION, OPERATIONAL AND CLOSURE PHASES OF THE ACTIVITIES; INCLUDING RECOMMENDED MITIGATION MEASURES.

FOLLOWING IN THE REPORT BELOW IS THE POTENTIAL ENVIRONMENTAL IMPACTS THAT HAVE BEEN IDENTIFIED. THE POTENTIAL IMPACTS TOOK COGNISANCE OF BOTH CONTINUATION AND CESSATION OF THE ACTIVITIES; AND IN EACH INSTANCE, THE PRACTICABLE MITIGATION MEASURES ARE IDENTIFIED.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

PLANNING AND DESIGN PHASE OF THE PROPOSED CEMETERY DEVELOPMENT

Alternative 1 (preferred alternative)			
POTENTIAL IMPACTS	***SIGNIFICANCE RATING***	***SIGNIFICANCE RATING AFTER MITIGATION***	**MITIGATION MEASURES**
Direct Impacts			
ECOLOGY THERE WILL BE NO IMPACTS THAT WILL RESULT ON ECOLOGICAL FEATURES DURING THE PLANNING PHASE.	N/A	N/A	N/A
SURFACE WATER AND WETLANDS THERE WILL BE NO IMPACTS THAT WILL RESULT ON SURFACE WATER FEATURES DURING THE PLANNING PHASE. IMPACTS IS POSSIBLE DURING THE CONSTRUCTION AND OPERATIONAL PHASES.	N/A	N/A	COMPILE A GEOHYDROLOGICAL REPORT AND GEOTECHNICAL REPORT.
EROSION ON SITE AND DOWNSTREAM THERE WILL BE NO IMPACTS THAT WILL RESULT IN EROSION ON SITE AND DOWNSTREAM DURING THE PLANNING PHASE. POSSIBLE IMPACTS DURING BOTH THE CONSTRUCTION AND OPERATIONAL PHASES.	N/A	N/A	COMPILE A GEOTECHNICAL & GEOHYDROLOGICAL REPORTS.
SERVICE INFRASTRUCTURE AND SERVICE PROVISION. THE PROPOSED SITE WAS ALREADY SERVICED WHEN THE INDUSTRIAL ERVEN THEREON WAS APPROVED BY MMM AND DESTEA YEARS AGO.	N/A	N/A	CIVIL SERVICES AND ELECTRICAL REPORTS WERE COMPILED AND APPROVED.
GEOTECHNICAL CONDITIONS			

GEOTECHNICAL STUDY MUST BE CONDUCTED TO DETERMINE THE SUB-SURFACE FEATURES, TO IDENTIFY THE SOIL AND ROCK CONDITIONS.	N/A	N/A	COMPILE GEOTECHNICAL REPORT.
TRAFFIC AND ACCESS A TRAFFIC IMPACT STUDY MUST BE DONE TO LOOK AT THE PROPOSED ACCESS TO THE DEVELOPMENT AS WELL AS THE IMPACT THE DEVELOPMENT WILL HAVE ON TRAFFIC IN THE SURROUNDING AREA.	N/A	N/A	COMPILE A TRAFFIC IMPACT STUDY .
HERITAGE IDENTIFY ANY SIGNS OF CULTURALLY OR HISTORICALLY SIGNIFICANT ELEMENTS, AS DEFINED IN SECTION 2 OF THE NATIONAL HERITAGE RESOURCES ACT, 1999, (ACT NO. 25 OF 1999), INCLUDING ARCHAEOLOGICAL OR PALAEONTOLOGICAL SITES, ON OR CLOSE (WITHIN 20M) TO THE SITE.	N/A	N/A	COMPILE A FIRST PHASE HERITAGE IMPACT ASSESSMENT REPORT AND SUBMIT TO SAHRA FOR COMMENT.
Indirect Impacts			
THE LOCATION OF THE SITE IS SUITABLE AND WILL CONTRIBUTE TO THE LOCAL ECONOMY (RATES AND TAXES TO MMM) AS WELL AS CREATING ADDITIONAL EMPLOYMENT IN THE LOCAL AREA.	MAJOR +	MAJOR +	NONE REQUIRED
Cumulative Impacts			
THE POSSIBILITY OF MORE LANDOWNERS IN THE SURROUNDING AREA WANTING TO DEVELOP THEIR PROPERTIES.	N/A	N/A	N/A
THE MITIGATION MEASURES IN THIS BAR OFFER AN IDEAL OPPORTUNITY TO INCORPORATE PRO-ACTIVE ENVIRONMENTAL MANAGEMENT MEASURES WITH THE GOAL OF ATTAINING			

SUSTAINABLE DEVELOPMENT. PRO-ACTIVE ENVIRONMENTAL MEASURES MINIMIZE THE CHANCE OF IMPACTS TAKING PLACE DURING THE CONSTRUCTION AND OPERATIONAL PHASE. THERE IS STILL THE CHANCE OF ACCIDENTAL IMPACTS TAKING PLACE; HOWEVER, THROUGH THE INCORPORATION OF CONTINGENCY PLANS (I.E. THE MITIGATION MEASURES IN THIS BAR) DURING THE PLANNING PHASE, THE NECESSARY CORRECTIVE ACTION CAN BE TAKEN TO FURTHER LIMIT POTENTIAL IMPACTS.			
Alternative 2 - N/A – APPLIED FOR EXEMPTION			
Direct Impacts			
NONE			
Indirect Impacts			
NONE			
Cumulative Impacts			
NONE			
Alternative 3 N/A – APPLIED FOR EXEMPTION			
Direct Impacts			
NONE			
Indirect Impacts			
NONE			
Cumulative Impacts			
NONE			
No-go Option			
Direct Impacts			
NONE			
Indirect Impacts			
NONE			

Cumulative Impacts			
NONE			
ONE OF THE OPTIONS TO BE CONSIDERED FOR THIS REPORT IS ONE OF NO DEVELOPMENT AT ALL. THIS WOULD ENTAIL LEAVING THE SITE IN ITS PRESENT UNDEVELOPED AND POLLUTED STATE. LARGE AMOUNTS OF BUILDING AND OTHER RUBBLE CAN BE FOUND ON THE PROPERTY (SEE PHOTOGRAPHS ATTACHED IN APPENDIX B. THIS IS THE IDEAL AREAS FOR VERMIN POPULATIONS TO INFESTATE AND BECOMING A HUGE PROBLEM TO THE SURROUNDING AREAS. THIS WILL BE ERADICATED DURING THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT AS LAND WILL BE COVERED WITH BUILDINGS, ROADS, PAVED AREAS, GARDENS AND GRAVES. AS THIS WILL BE A PRIVATE CEMETERY. MAINTENANCE THEREOF WILL BE OF HIGH IMPORTANCE OTHERWISE CLIENTS WILL NOT MAKE USE OF ITS FACILITIES. VERY LIMITED FAUNA IS FOUND ON THE SITE. IT MUST ALSO BE SAID THAT THE EXISTING VEGETATION OF THE AREA IS HIGHLY INVADED BY ALIEN SPECIES/WEEDS POSSIBLY DUE TO PREVIOUS DISTURBANCE AND ALL OF THE POLLUTION AND BUILDING RUBBLE DUMPED IN THE AREA. SINCE THE DEVELOPMENT IS CLASSIFIED AS AN ACTIVITY, WHICH MAY HAVE SIGNIFICANT DETRIMENTAL EFFECTS ON THE ENVIRONMENT AN ENVIRONMENTAL IMPACT ASSESSMENT IS BEING DONE THEREFORE.			

A complete impact assessment in terms of Regulation 19(3) of GN 982 must be included as Appendix F.

MITIGATION MEASURES THAT MAY ELIMINATE OR REDUCE THE POTENTIAL IMPACTS DURING THE PLANNING PHASE OF THE PROPOSED DEVELOPMENT:

THE MANAGEMENT RESPONSES CONTAINED IN THE MITIGATION MEASURES IN THIS BAR, ARE MEASURES PRESCRIBED TO MINIMISE THE IMPACTS ASSOCIATED WITH THE PROJECT. THE MANAGEMENT RESPONSES CONTAINED IN THE MITIGATION MEASURES IN THIS BAR HAVE BEEN FORMULATED WITH THE HOLISTIC VIEW TO MINIMISING ANY POTENTIAL IMPACTS TO ADJOINING HABITATS AND ECOSYSTEMS LINKED TO THIS SITE. THESE MEASURES MUST BE USED ON SITE DURING THE PLANNING AND CONSTRUCTION PHASES OF THE PROPOSED CEMETERY DEVELOPMENT AND ASSOCIATED INFRASTRUCTURE.

THE POINT OF DEPARTURE FOR THESE MEASURES IS TO TAKE A PRO-ACTIVE ROUTE BY ADDRESSING POTENTIAL PROBLEMS BEFORE THEY OCCUR. THIS SHOULD LIMIT CORRECTIVE MEASURES REQUIRED DURING THE CONSTRUCTION PHASE OF THE PROJECT. ADDITIONAL MITIGATION WILL BE INCLUDED THROUGHOUT THE PROJECT'S VARIOUS PHASES, AS REQUIRED AND IF NECESSARY. ALTHOUGH THERE ARE FEW IMPACTS ASSOCIATED WITH THE PLANNING AND DESIGN PHASE THE IMPORTANCE OF THE BASIC ASSESSMENT AS PART OF THIS MUST BE INCORPORATED. THUS THE FOLLOWING ARE CONSIDERED MITIGATION MEASURES PRIOR TO CONSTRUCTION.

- DRAW UP AND SUBMIT FOR APPROVAL A SITE LAYOUT MASTER PLAN. THIS PLAN MUST SHOW THE FINAL POSITIONS AND EXTENT OF ALL PERMANENT AND TEMPORARY SITE STRUCTURES AND INFRASTRUCTURE;
- THE COMPILATION OF AN ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR).
- ALL THE REQUIREMENTS OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 OF 1998) AND OTHER REGULATIONS MUST BE TAKEN INTO CONSIDERATION. ALL CORRESPONDENCE REGARDING THE PROPOSED ACTIVITY SHOULD BE SEND TO DWS.
- ANY DEVELOPMENT WITHIN 500M FROM THE BOUNDARY OF ANY WETLAND REQUIRES A WATER USE LICENSE ACCORDING TO DWS REGULATIONS. ACCORDING TO DWS THEY DO NOT SEE THE LARGE QUARRY DAM NEXT TO THE PROPOSED SITE AS A WETLAND.

REGULATIONS RELATING TO THE MANAGEMENT OF HUMAN REMAINS MUST BE ADHERED TO AND RELAXATION OBTAINED FROM MMM REGARDING DISTANCES FROM RESIDENTIAL AREAS AND WATER BODIES . THE PLANNED CEMETERY IS NOT 500M FROM NEAREST HABITABLE BUILDING. THE CLIENT MUST APPLY FOR THE RELAXATION OF DISTANCES FROM RESIDENTIAL AREAS AND WATER BODIES AS CONTEMPLATED IN SECTION 2 (2) (A) OF THE NATIONAL HEALTH ACT REGULATIONS, NO 61 OF 2003.

- ALL BURIALS MUST COMPLY WITH THE FOLLOWING ENVIRONMENTAL REQUIREMENTS:
  - BE LOCATED OUTSIDE THE 1:100 YEAR FLOODLINE;
  - BE LOCATED AT LEAST 350M FROM GROUND WATER RESOURCES FOR DRINKING PURPOSES AND AT LEAST 500M FROM THE NEAREST HABITABLE BUILDING.
  - FOR A PREFERRED BURIAL SITE WITH SOIL OF SANDY-CLAY MIX OF LOW POROSITY AND A SMALL AND FINE GRAIN TEXTURE, THE WATER TABLE SHOULD BE AT LEAST 2.5M DEEP IN ORDER TO ALLOW FOR TRADITIONAL GRAVE DEPTH OF SIX FEET (1.8M)
  - FOR AREAS WITH HIGHER WATER TABLES, THE LOCAL GOVERNMENT MAY DETERMINE A REASONABLE DEPTH WITH ADDITIONAL WALLING RECOMMENDATIONS TO PROTECT UNDERGROUND WATER; AND
  - THE COVERING SOIL SHALL NOT BE LESS THAN 1M, SHOULD 2 BODIES BE BURIED IN THE SAME GRAVE, 300MM OF SOIL SHALL BE MAINTAINED BETWEEN THE COFFINS.
- SOLID WASTE MUST BE MANAGED IN ACCORDANCE TO DWS REQUIREMENTS.
- ANY DEVELOPMENT WITHIN THE 1:100 YEAR FLOOD LINE OR WITHIN THE RIPARIAN HABITAT CONSTITUTES A WATER USE LICENSE IN TERMS OF SECTION 21(C) AND (I) OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 F 1998) AND WILL REQUIRE AUTHORIZATION BEFORE ANY DEVELOPMENT MAY COMMENCE. ACCORDING TO DWS THEY DO NOT SEE THE LARGE QUARRY DAM NEXT TO THE PROPOSED SITE AS A WETLAND.
- A TRAFFIC IMPACT ASSESSMENT IS REQUIRED.
- ARCHITECTURAL AND TOWN PLANNING GUIDELINES (E.G. COVERAGE, HEIGHT RESTRICTIONS, BUILDING MATERIALS ETC.) TO HELP MITIGATE AGAINST POTENTIAL VISUAL IMPACT ON SURROUNDING PROPERTIES.
- GEOTECHNICAL AND GEOHYDROLOGICAL STUDIES MUST BE CONDUCTED TO DETERMINE THE SUB-SURFACE FEATURES, TO IDENTIFY THE SOIL AND ROCK CONDITIONS AS WELL AS HYDROLOGY OF THE SITE AND

SURROUNDINGS.

- A CIVIL SERVICES REPORT MUST BE CONDUCTED.
- A FIRST PHASE HERITAGE AND PALEONTOLOGICAL IMPACT ASSESSMENT MUST BE CONDUCTED.
- AN ELECTRICAL REPORT MUST BE COMPILED.
- ACCESS TO THE SITES MUST BE VIA THE EXISTING ROAD NETWORK ONLY.
- STORM WATER RUNOFF NEEDS TO BE TAKEN INTO ACCOUNT DURING THE PLANNING PHASE.
- THE EMP MUST INCLUDE A LITTER MANAGEMENT REQUIREMENT ALONG THE BOUNDARY FENCES.
- THE EMP MUST BE SIGNED BY THE DEVELOPER AND THE CONTRACTOR STATING THAT THEY UNDERSTAND THE CONDITIONS AND REQUIREMENTS OF THE EMP.
- THE CONDITIONS IN THE ENVIRONMENTAL AUTHORIZATION MUST BE COMPLIED WITH BY THE DEVELOPER AND THE CONTRACTOR.
- A PHOTOGRAPHIC RECORD OF THE SITE MUST BE TAKEN PRIOR TO CONSTRUCTION AND REGULARLY UPDATED DURING THE CONSTRUCTION PHASE.
- ALL RECORDS WITH RESPECT TO THE CONSTRUCTION (MATERIALS, SUPPLIERS) MUST BE KEPT AS WELL AS COMPLIANCE AND NON-COMPLIANCE WITH THE ENVIRONMENTAL AUTHORIZATION CONDITIONS, ENVIRONMENTAL INCIDENTS AND COMPLAINTS. THESE DOCUMENTS MUST BE AVAILABLE TO THE DEPARTMENT OF ENVIRONMENT ON REQUEST.
- AN ENVIRONMENTAL CONTROL OFFICER (ECO) MUST BE APPOINTED BEFORE CONSTRUCTION IS ALLOWED TO START.
- WHERE POSSIBLE SKILLED AND UNSKILLED LABOUR SHOULD BE SOURCED FROM THE LOCAL COMMUNITY.
- TRAINING OF STAFF WORKING ON THE CONSTRUCTION SITE WITH RESPECT TO ENVIRONMENTAL AWARENESS AND THE EMP IS ESSENTIAL AND THE RESPONSIBILITY OF THE DEVELOPER AND THE CONTRACTOR. AN INDUCTION COURSE OF ENVIRONMENTAL AWARENESS MUST BE CONDUCTED FOR THE CONTRACTOR BEFORE COMMENCEMENT OF THE ACTIVITY TO ENSURE THAT THEY ARE FULLY AWARE OF THE EMP AND THEIR RESPONSIBILITIES.
- ONLY TRAINED STAFF MAY OPERATE PLANT, MACHINERY AND EXPLOSIVES ON SITE. ALL PERSONNEL MUST BE AWARE OF THE IMPACTS AND HAZARDS ASSOCIATED WITH THE TASKS THEY PERFORM AND HOW BEST TO MITIGATE AGAINST THESE.
- THE SITE MUST HAVE OBTAINED ALL REQUIRED TOWN PLANNING AUTHORIZATIONS.
- THE DEVELOPER MUST PROVIDE ALL CONTRACTORS AND SUB-CONTRACTORS WITH A COPY OF THE MITIGATION MEASURES IN THIS BAR.
- THE ECO MUST FORM PART OF THE PROJECT MANAGEMENT TEAM AND ATTEND ALL RELEVANT PROJECT MEETINGS.
- THE CONTRACTOR MUST APPOINT AN ENVIRONMENTAL LIAISON OFFICER (ELO). THIS PERSON WILL BE REQUIRED TO MONITOR THE DEVELOPMENT WITH A DIRECT HANDS-ON APPROACH, AND ENSURE COMPLIANCE AND CO-OPERATION OF ALL PERSONNEL. HE SHOULD PREFERABLY BE FLUENT IN THE LANGUAGES OF THE EMPLOYEES.
- THE MITIGATION MEASURES IN THIS BAR MUST BE MADE BINDING TO THE MAIN CONTRACTOR AS WELL AS INDIVIDUAL CONTRACTORS AND SHOULD BE INCLUDED IN TENDER DOCUMENTATION FOR THE CONSTRUCTION CONTRACT.
- PRIOR TO ESTABLISHMENT OF THE SITE CAMP(S), THE CONTRACTOR SHALL PRODUCE A PLAN SHOWING THE POSITIONS OF ALL BUILDINGS, LAYDOWN YARDS, AND OTHER INFRASTRUCTURE FOR APPROVAL BY THE ECO.
- NO CONSTRUCTION ACTIVITIES MUST COMMENCE ON SITE PRIOR TO OBTAINING ALL THE NECESSARY APPROVALS.
- THE PLANNING OF CONSTRUCTION ACTIVITIES (CONSTRUCTION SITE) MUST ENDEAVOR TO MINIMISE THE NOISE IMPACT ON ADJACENT LANDOWNERS AND BUSINESSES.
- CONSULTATION WITH THE SURROUNDING LANDOWNERS AND BROADER PUBLIC MUST BE COMPLETED AS PART OF THE EIA AND TOWN PLANNING APPLICATIONS.
- OBTAIN THE COMMENTS FROM THE MUNICIPALITY, THE DEPARTMENTS OF HEALTH, DWS ETC – PUBLIC PARTICIPATION PROCESS.
- THE ENVIRONMENTAL AUTHORISATION MUST HAVE BEEN ISSUED BY DESTEA AND THE APPEAL PERIOD MUST HAVE BEEN COMPLETED SUCCESSFULLY.
- DESTEA MUST BE NOTIFIED 7 DAYS BEFORE CONSTRUCTION COMMENCES ON THE PROPOSED SITE.

- THE DEVELOPMENT MUST BE DESIGNED IN AN ENERGY EFFICIENT MANNER, IN TERMS OF IT'S CONSTRUCTION AND DURING OPERATIONAL PHASES;
- IN LIGHT OF THE ABOVE ALL DOCUMENTS ILLUSTRATING COMPLIANCE TO THE CONDITIONS SHOULD BE FORWARDED TO DESTEA & THE MUNICIPALITY ENVIRONMENTAL SECTION FOR RECORD KEEPING AND COMPLIANCE MONITORING.

METHODOLOGY OF ASSESSING THE IMPACTS

THE SIGNIFICANCE (QUANTIFICATION) OF CURRENT AND POTENTIAL ENVIRONMENTAL IMPACTS IDENTIFIED DURING THE ASSESSMENT WAS DETERMINED USING A RANKING SCALE, BASED ON THE FOLLOWING (TERMINOLOGY HAS BEEN ADOPTED FROM THE GUIDELINE DOCUMENTATION ON EIA REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS, APRIL 1998):

TERMINOLOGY	DEFINITION	RANKING
DURATION (D)	IN ORDER TO ACCURATELY DESCRIBE THE IMPACT IT IS NECESSARY TO UNDERSTAND THE DURATION AND PERSISTENCE OF AN IMPACT IN THE ENVIRONMENT.	5 – PERMANENT. 4 - LONG-TERM. 3 - MEDIUM-TERM (5-15 YEARS). 2 - SHORT-TERM (0-5 YEARS). 1 – IMMEDIATE.
MAGNITUDE (M)	A DESCRIPTION MUST BE GIVEN AS TO WHETHER AN IMPACT IS DESTRUCTIVE, OR BENIGN. IT DETERMINES WHETHER THE INTENSITY OF THE IMPACT ON THE NATURAL ENVIRONMENT OR SOCIETY IS PERMANENTLY, SIGNIFICANTLY CHANGES ITS FUNCTIONALITY, OR SLIGHTLY ALTERS IT.	5 - VERY HIGH. 4 – HIGH. 3 – MODERATE. 2 – LOW. 1 – MINOR.
EXTENT (E)	THE EXTENT OF THE IMPACT REFERS TO THE SPATIAL DIMENSION TO WHICH AN IMPACT WILL BE FELT (I.E. SITE, STUDY AREA, LOCAL, REGIONAL, OR NATIONAL SCALE).	5 – INTERNATIONAL. 4 – NATIONAL. 3 – REGIONAL. 2 – LOCAL. 1 – SITE ONLY.
PROBABILITY (P)	THE CRITERIA USED FOR RATING THE LIKELIHOOD OF IMPACT OCCURRENCE	5 – DEFINITE. 4 – HIGHLY PROBABLE. 3 – MEDIUM PROBABILITY. 2 – LOW PROBABILITY. 1 – IMPROBABLE.

THE ENVIRONMENTAL SIGNIFICANCE OF EACH POTENTIAL IMPACT WAS ASSESSED USING THE FOLLOWING FORMULA:

SIGNIFICANCE POINTS (SP) = (MAGNITUDE + DURATION + SCALE) X PROBABILITY

THE MAXIMUM VALUE IS 75 SIGNIFICANCE POINTS (SP).

THE RATING OF THE ENVIRONMENTAL EFFECTS IS DONE AS FOLLOWS:

- HIGH (>50 SP),
- MODERATE (25 - 50 SP) OR
- LOW (<25 SP) SIGNIFICANCE.

THIS IS DONE WITH AND WITHOUT MITIGATION MEASURES AND FOR BOTH OCCURRENCE AND SEVERITY, ON THE FOLLOWING BASIS:

ENVIRONMENTAL IMPACT RATING

SP >50	INDICATES HIGH ENVIRONMENTAL SIGNIFICANCE.	THE IMPACT COULD INFLUENCE THE DECISION REGARDLESS OF ANY POSSIBLE MITIGATION. AN IMPACT WHICH COULD INFLUENCE THE DECISION ABOUT WHETHER OR NOT TO PROCEED WITH THE PROJECT.
SP 25 - 50	INDICATES MODERATE ENVIRONMENTAL SIGNIFICANCE.	THE IMPACT COULD HAVE AN INFLUENCE ON THE DECISION UNLESS IT IS MITIGATED. AN IMPACT OR BENEFIT WHICH IS SUFFICIENTLY IMPORTANT TO REQUIRE MANAGEMENT. OF MODERATE SIGNIFICANCE - COULD INFLUENCE THE DECISIONS ABOUT THE PROJECT IF LEFT UNMANAGED.
SP <25	INDICATES LOW ENVIRONMENTAL SIGNIFICANCE.	THE IMPACT WILL NOT HAVE AN INFLUENCE ON THE DECISION. IMPACTS WILL HAVE LITTLE REAL EFFECT AND WHICH SHOULD NOT HAVE AN INFLUENCE ON OR REQUIRE MODIFICATION OF THE PROJECT DESIGN OR ALTERNATIVE MITIGATION.

THIS FOLLOWING SECTION OF THE BAR LIST ALL THE IMPACTS FROM THE PROPOSED DEVELOPMENT TOGETHER WITH THEIR SIGNIFICANCE DETERMINED IN ACCORDANCE WITH THE CRITERIA MENTIONED ABOVE, WITH AND WITHOUT MITIGATION.

2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE OF CEMETERY

CONSTRUCTION RELATED ACTIVITIES WHICH COULD IMPACT ON THE BIO-PHYSICAL ENVIRONMENT INCLUDE:

- HAPHAZARD PLACEMENT OF INFRASTRUCTURE ON THE ENVIRONMENT. THE ESTABLISHMENT OF A MAIN SITE OFFICE AND STORAGE SITE DURING THE CONSTRUCTION PERIOD WILL ENSURE THAT THE POOR PLACEMENT OF MATERIALS AND INFRASTRUCTURE WILL BE AVOIDED. THIS COULD ALSO RESULT IN THE DAMAGE OR POLLUTION TO SURROUNDING AREAS CAUSED BY CONSTRUCTION ACTIVITIES.
- LAND CLEARING FOR CONSTRUCTION OF ACCESS ROADS, BUILDINGS ETC – REMOVAL OF TOPSOIL AND SOIL EROSION. THE CLEARING OF TOPSOIL AND EXCAVATION FOR THE ESTABLISHMENT OF BURIAL SITES WILL RESULT IN THE DESTRUCTION OF FERTILE TOPSOIL.
- THE CONSTRUCTION OF SEVERAL PERMANENT STRUCTURES ON SITE WILL RESULT IN THE LOSS OF VEGETATION ON SITE.
- ESTABLISHMENT OF STOCKPILING AND SPOIL AREAS;
- SURFACE AND GROUNDWATER CONTAMINATION DUE TO CONSTRUCTION ACTIVITIES SUCH AS THE USE OF HAZARDOUS MATERIALS ON SITE E.G. FUEL AND OIL.
- OPERATION OF TEMPORARY CONSTRUCTION CAMPS AND STORAGE OF MATERIALS REQUIRED FOR CONSTRUCTION.
- DUE TO THE PRESENCE OF CONSTRUCTION PERSONNEL IN NATURAL AREAS, FIRES CAN OCCUR IF NOT MANAGED TO THE CORRECT STANDARD.

CONSTRUCTION RELATED ACTIVITIES WHICH COULD IMPACT ON THE SOCIAL ENVIRONMENT INCLUDE:

- VEHICULAR MOVEMENT;
- ESTABLISHMENT OF STOCKPILING AND SPOIL AREAS;
- OPERATION OF TEMPORARY CONSTRUCTION CAMPS AND STORAGE OF MATERIALS REQUIRED FOR CONSTRUCTION;
- NOISE FOR CONSTRUCTION ACTIVITIES AND VEHICLES ETC.,
- VISUAL IMPACT DUE TO LAND CLEARING AND CONSTRUCTION ACTIVITIES AND MACHINERY ETC. ON THE PROPOSED SITE.
- THE CONSTRUCTION PERIOD WILL CREATE A FEW JOB OPPORTUNITIES FOR INDIVIDUALS RESIDING IN THE AREA OF HEIDEDAL AND SURROUNDINGS.

- EXCAVATION ACTIVITIES CAN RESULT IN THE DISCOVERY OF CULTURAL AND HISTORICAL ARTEFACTS BENEATH THE EARTH SURFACE. DAMAGE OR LOSS CAN OCCUR IF THE CORRECT PROCEDURES ARE NOT FOLLOWED.

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the construction phase:

Alternative S1 (preferred alternative)

Direct impacts:

THE CONSTRUCTION PHASE OF THE CEMETERY WILL RESULT IN THE GREATEST IMPACT ON THE ENVIRONMENT. THESE IMPACTS WILL OCCUR ON ANY POTENTIAL SITE. THE SEVERITY OF THESE IMPACTS CAN BE REDUCED BY EFFECTIVELY IMPLEMENTED MITIGATION MEASURES.

SOIL AND WATER RESOURCE POLLUTION

- LOSS OR DAMAGE TO AQUATIC RESOURCES – NONE IDENTIFIED ON SITE.
- THE CONSTRUCTION PHASE MIGHT RESULT IN INCREASED INFILTRATION OF CONTAMINANTS INTO THE GROUND WATER AND SOIL.
- SOIL COMPACTION DUE TO MOVEMENT OF VEHICLES AND MACHINERY.
- THE CLEARING OF THE SITE WILL RESULT IN EXPOSED SOIL SURFACES WHICH MAY BE PRONE TO EROSION, CREATION OF DUST AND SEDIMENTATION OF STREAMS.
- SPILLAGES OF OIL, LUBRICANTS AND FUEL FROM CONSTRUCTION VEHICLES, PLANT AND MACHINERY HAS THE POTENTIAL TO CONTAMINATE THE SOIL AND GROUNDWATER. FLORA IN THESE AREAS WHERE CONTAMINATION OCCURS WILL DIE.
- CEMENT MIXING AND THE STORAGE OF FUEL CAN LEAD TO CONTAMINATION OF THE SOIL AND WATER RESOURCES.
- STORM WATER RUN-OFF HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION OF STREAMS IF NOT CONTROLLED.

VISUAL INTRUSION & LIGHT POLLUTION

- LITTERING AND ILLEGAL DUMPING ON THE SITE MAY RESULT IN AN ALTERATION OF THE VISUAL CHARACTER OF THE SITE.
- THE DEVELOPMENT WILL RESULT IN THE REMOVAL OF VEGETATION; THE ERECTION OF CONSTRUCTION CAMPS; CONSTRUCTION OF BUILDINGS AS WELL AS THE PRESENCE OF CONSTRUCTION VEHICLES ETC. WHICH MAY ALL BE VISUALLY INTRUSIVE.
- LIGHTS FROM THE CONTRACTOR'S CAMP AND THE CONSTRUCTION SITE MAY BE VISUALLY INTRUSIVE.

DESTRUCTION OF FLORA & FAUNA

- CONSTRUCTION ACTIVITIES WILL DISTURB THE FAUNA THAT MIGHT STILL BE PRESENT ON THE SITE ALTHOUGH NONE WAS IDENTIFIED. DISRUPTION OF THE BREEDING PATTERNS OF WILD BIRDS AND ANIMALS. THEREFORE THE POTENTIAL LOSS OF INDIGENOUS FLORA AND HABITAT DUE TO LAND/VEGETATION CLEARANCE.
- LOSS OF INDIVIDUALS OF THREATENED OR PROTECTED FLORA AND FAUNA – NONE IDENTIFIED TO OCCUR ON THE SITE OR SURROUNDINGS.
- THERE IS A POTENTIAL FOR AN INCREASED RISK TO ANIMALS FALLING INTO THE OPEN TRENCHES DURING CONSTRUCTION.
- THE CLEARING OF VEGETATION WILL RESULT IN THE LOSS OF HABITAT, HABITAT FRAGMENTATION AND POSSIBLY A LOSS OF SPECIES ON THE SITE.
- THE NOISES AND VIBRATIONS RESULTING FROM MACHINERY AND BLASTING (IF REQUIRED) COULD IMPACT ON FAUNAL SPECIES OUTSIDE THE SITE.
- POLLUTION RESULTING FROM THE CONSTRUCTION SITE SUCH AS LITTER, SOLID WASTE, SEWERAGE AND SPILLS

OF OIL, LUBRICANTS AND FUEL COULD REDUCE THE QUALITY OF THE HABITATS IN THE SURROUNDING AREA AND DIRECTLY IMPACT ON THE HEALTH AND WELFARE OF THE FAUNA AND FLORA SURROUNDING THE SITE.

- DUE TO THE DISTURBANCE OF THE SITE ALIEN PLANTS WILL BE ABLE TO ESTABLISH AND COULD BECOME A PROBLEM BY INFESTING NEIGHBOURING LAND. THE SITE IS ALREADY DISTURBED AND ALIEN VEGETATION HAS ALREADY ESTABLISHED ITSELF ON THE SITE.
- INJURY OR EVEN LOSS OF FAUNA IN THE AREA AND SURROUNDINGS THROUGH POACHING AND HUNTING.
- INCREASE IN VERMIN POPULATIONS.

TRAFFIC & ACCESS

- INCREASED TRAFFIC CONGESTION COULD POSSIBLY OCCUR AS A RESULT OF CONSTRUCTION VEHICLES MOVING ONTO AND OFF THE SITE DURING CONSTRUCTION.

NOISE POLLUTION

- THERE WILL BE AN INCREASE IN NOISE DURING THE CONSTRUCTION PHASE OF THE PROPOSED CEMETERY DEVELOPMENT DUE TO WORKING OF MACHINERY, EQUIPMENT AND VEHICLES AS WELL AS HAMMERING AND BLASTING IF REQUIRED.

ATMOSPHERE POLLUTION AND ODOURS

- THE INCREASED DUST, SMOKE AND EMISSIONS RESULTING FROM CONSTRUCTION ACTIVITIES (VEGETATION CLEARING, SITE PREPARATION, EARTHWORKS, BLASTING, UNCOVERED TOPSOIL STOCKPILES AND SAND PILES, LOADS ON VEHICLES AND THE BURNING OF WASTE); VEHICLES, PLANT AND MACHINERY POSES A HEALTH HAZARD TO CONSTRUCTION STAFF AND PEOPLE LIVING AND WORKING IN THE VICINITY OF THE SITE.
- AIR POLLUTION SHOULD ANY CLEARED VEGETATION BE BURNED ON SITE.

SAFETY & SECURITY

- A CONSTRUCTION SITE CAN BE A DANGEROUS PLACE AND THUS COULD RESULT IN HARM TO PEOPLE AND PROPERTY.

HYGIENE

- THE HEALTH OF WORKERS MAY BE ADVERSELY AFFECTED BY UNHYGIENIC AND DANGEROUS WORKING CONDITIONS ON THE CONSTRUCTION SITE.
- WORKERS MAY BE EXPOSED TO DISEASES SUCH AS TICK BITE FEVER ETC.

Indirect impacts:

CONSTRUCTION TRAFFIC

- CONSTRUCTION VEHICLES WILL RESULT IN INCREASED TRAFFIC ON ADJACENT ROADS.

SECURITY

- CONSTRUCTION SITES BY THEIR NATURE ACT AS A MAGNET TO THE UNEMPLOYED, SO LARGE NUMBERS OF PEOPLE MAY GATHER ON OR AROUND THE SITE. THESE PEOPLE MUST BE KEPT OF THE SITE FOR SAFETY REASONS. INCREASE IN CRIME MIGHT BE POSSIBLE DURING THE CONSTRUCTION PHASE SHOULD THE DEVELOPER NOT IMPLEMENT GOOD MANAGEMENT PRACTICES ETC. CRIMINALS MAY ALSO UTILISE THE OPPORTUNITY TO STEAL ITEMS FROM THE SITE AND SURROUNDING PROPERTIES.

SPREAD OF ALIEN VEGETATION

- DUE TO THE DISTURBANCE OF THE SITE ALIEN PLANTS WILL BE ABLE TO ESTABLISH AND COULD BECOME A PROBLEM BY INFESTING NEIGHBOURING LAND. ALIEN VEGETATION ALREADY A PROBLEM ON THE SITE.

SOCIO ECONOMIC

- CONSTRUCTING THE PROPOSED DEVELOPMENT WILL RESULT IN DIRECT JOBS BEING CREATED FOR THE CONSTRUCTION OF THE CEMETERY. INDIRECTLY, JOBS WILL ALSO BE CREATED IN INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES. FOR EXAMPLE, AN ADDITIONAL AMOUNT OF GOODS USED IN CONSTRUCTION WILL BE REQUIRED FROM BUSINESS AND INDUSTRIES RELATED TO THE CONSTRUCTION SECTOR.
- THE PROPOSED DEVELOPMENT WILL LEAD TO AN INCREASE IN THE LEVEL OF LOCAL EMPLOYMENT IN THE AREAS SURROUNDING THE DEVELOPMENT SITE. BOTH SHORT-TERM AND LONG-TERM EMPLOYMENT WILL BE CREATED.

Cumulative impacts:

SURFACE WATER POLLUTION

- SPILLAGES OF CEMENT, OIL, LUBRICANTS AND FUEL FROM CONSTRUCTION VEHICLES, PLANT AND MACHINERY HAS THE POTENTIAL TO CONTAMINATE WATER RESOURCES. THIS SURFACE WATER WILL FLOW INTO THE DRAINAGE LINES POLLUTING DOWNSTREAM WATER RESOURCES. FLORA AND FAUNA IN THESE AREAS WHERE CONTAMINATION OCCURS WILL DIE.

INCREASED RUN OFF OF WATER

- THE INCREASE IN PAVED AREAS SUCH AS THE CONSTRUCTION CAMP, ROADS AND DRIVEWAYS WILL INCREASE THE AMOUNT OF STORM WATER RUNOFF AND THUS REDUCE THE INFILTRATION OF WATER INTO THE GROUNDWATER. THIS MAY RESULT IN EROSION OF AREAS THAT ARE NOT PAVED.
- STORM WATER RUN-OFF HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION OF DOWNSTREAM WATER RESOURCES.

GROUND WATER POLLUTION

- THE CONSTRUCTION PHASE MIGHT RESULT IN INCREASED INFILTRATION OF CONTAMINANTS INTO THE GROUND WATER AND SOIL.
- THE CLEARING OF THE SITE WILL RESULT IN EXPOSED SOIL SURFACES WHICH MAY BE PRONE TO EROSION AND SEDIMENTATION OF DOWNSTREAM WATER RESOURCES.
- SPILLAGES OF CEMENT, OIL, LUBRICANTS AND FUEL FROM CONSTRUCTION VEHICLES, PLANT AND MACHINERY HAS THE POTENTIAL TO CONTAMINATE THE SOIL AND GROUNDWATER RESOURCES.

SOCIO ECONOMIC

- THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT WILL RESULT IN DIRECT JOBS BEING CREATED FOR THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT. INDIRECTLY, JOBS ARE ALSO CREATED IN INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES. FOR EXAMPLE, AN ADDITIONAL AMOUNT OF GOODS USED IN CONSTRUCTION WILL BE REQUIRED FROM BUSINESS AND INDUSTRIES RELATED TO THE CONSTRUCTION SECTOR.
- THE PROPOSED DEVELOPMENT WILL LEAD TO AN INCREASE IN THE LEVEL OF LOCAL EMPLOYMENT IN THE AREAS SURROUNDING THE DEVELOPMENT SITE. BOTH SHORT-TERM AND LONG-TERM EMPLOYMENT WILL BE

CREATED.

FAUNAL DISPLACEMENT

- THE DISPLACEMENT OF FAUNA ON SITE AND SURROUNDINGS AS A RESULT OF AN INCREASE IN AMBIENT NOISES AND VIBRATIONS IS LIKELY TO REMAIN EVEN WITH MITIGATION.

THE MITIGATION MEASURES IN THIS BAR OFFER AN IDEAL OPPORTUNITY TO INCORPORATE PRO-ACTIVE ENVIRONMENTAL MANAGEMENT MEASURES WITH THE GOAL OF ATTAINING SUSTAINABLE DEVELOPMENT. PRO-ACTIVE ENVIRONMENTAL MEASURES MINIMIZE THE CHANCE OF IMPACTS TAKING PLACE DURING THE CONSTRUCTION PHASE. THERE IS STILL THE CHANCE OF ACCIDENTAL IMPACTS TAKING PLACE; HOWEVER, THROUGH THE INCORPORATION OF CONTINGENCY PLANS (I.E. THE MITIGATION MEASURES IN THIS BAR) DURING THE PLANNING PHASE, THE NECESSARY CORRECTIVE ACTION CAN BE TAKEN TO FURTHER LIMIT POTENTIAL IMPACTS DURING THE CONSTRUCTION PHASE.

No-go alternative (compulsory)

Direct impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING POTENTIAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT WILL NOT OCCUR:

- NO ADDED POSSIBILITY OF SOIL AND GROUND WATER POLLUTION. THE EXISTING SITE IS HOWEVER CURRENTLY PRONE TO EROSION DUE TO AREAS THAT EXISTS WITHOUT ANY VEGETATION.
- NO ADDED INCREASE IN TRAFFIC VOLUMES DUE TO CONSTRUCTION VEHICLES ACCESSING THE SITE.
- NO ADDED NOISE POLLUTION THAT CAN BE ASSOCIATED WITH CONSTRUCTION RELATED ACTIVITIES, MACHINERY AND CONSTRUCTION VEHICLES ACCESSING THE SITE.
- NO ADDED IMPACT ON ATMOSPHERE POLLUTION AND ODOURS FROM CONSTRUCTION ACTIVITIES AND VEHICLES.
- NO ADDED VISUAL INTRUSION & LIGHT POLLUTION ON SURROUNDING AREAS. IT IS OUR OPINION THAT THE SITE IN ITS CURRENT STATE HAS A MUCH LARGER VISUAL IMPACT ON THE SURROUNDINGS AREAS THAN WHAT IT WILL HAVE DURING THE OPERATIONAL PHASE OF THE PROPOSED CEMETERY DEVELOPMENT.
- FAUNA ON THE PROPOSED SITE IS MAINLY LIMITED TO RODENTS AND SOME AVIFAUNA LIKE NORMAL GARDEN BIRDS. NO ADDED IMPACT ON THE LIMITED FLORA & FAUNA THAT CURRENTLY EXISTS ON THE SITE. VERY LIMITED FAUNA IS FOUND ON THE SITE DUE TO THE PROPOSED SITE BEING SMALL IN SIZE, FRAGMENTED AND LOCATED DIRECTLY ADJACENT TO EXISTING RESIDENTIAL AREA.
- CONSTRUCTION SITE HYGIENE WILL NOT BE A FACTOR AS THERE WILL BE NO STAFF ON THE SITE. CERTAIN AREAS OF THE PROPOSED SITE IS HOWEVER IN A BAD STATE DUE TO LARGE AMOUNTS OF BUILDING AND OTHER RUBBLE. THIS IS THE IDEAL AREAS FOR VERMIN POPULATIONS TO INFESTATE AND BECOMING A HUGE PROBLEM TO THE SURROUNDING AREAS.
- THE SAFETY AND SECURITY OF THE STAFF AND THE SITE WILL NOT BE A PROBLEM.

THE DIRECT IMPACTS ASSOCIATED WITH THE DEVELOPMENT NOT BEING APPROVED:

- NO JOBS WILL BE CREATED. THUS THERE WILL BE A LOSS OF INCOME IN THE LOCAL ECONOMY.
- THE PROPOSED SITE WILL STAY IN ITS CURRENT DILAPIDATED STATE AND WILL NOT CONTRIBUTE ANYTHING TO THE LOCAL ECONOMY AS IT IS TOO SMALL TO USE FOR AGRICULTURAL PURPOSES.
- ADDITIONAL BURIAL SPACE WILL NOT BE PROVIDED IN THE AREA. SHORTAGE OF GRAVES SITES IN THE AREA WILL CONTINUE AS THE EXISTING CEMETERY IS AT FULL CAPACITY.

Indirect impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING INDIRECT IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE WILL NOT OCCUR:

- INCREASE IN CONSTRUCTION TRAFFIC VOLUMES.
- THE SAFETY AND SECURITY OF THE STAFF AND THE SITE WILL NOT BE A PROBLEM.
- POSSIBLE CRIME FROM MORE PEOPLE ACCESSING THE AREA DURING CONSTRUCTION PHASE WILL NOT BE A PROBLEM.
- MMM WILL NOT GET MORE IN RATES AND TAXES FROM DEVELOPING THE PROPOSED SITE.

THE INDIRECT IMPACTS ASSOCIATED WITH THE PROPOSED CEMETERY DEVELOPMENT NO TACKING PLACE INCLUDE:

- INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES WILL NOT BENEFIT FROM THE CONSTRUCTION. RESULTING IN FURTHER LOSS OF INCOME IN THE LOCAL ECONOMY.
- SITE WILL STAY UNDEVELOPED.

Cumulative impacts:

- THE CUMULATIVE IMPACTS ASSOCIATED WITH NOT DEVELOPING THE SITE, ARE A LOSS OF REVENUE TO THE LOCAL ECONOMY AND THE LOSS OF POTENTIAL JOBS.
- SITE WILL STAY UNDEVELOPED. STATE OF SITE WILL JUST GET WORSE DUE TO CONTINUED ILLEGAL DUMPING OF REFUSE AND BUILDING RUBBLE. THIS WILL LEAD TO VISUAL IMPACT, MORE ALIEN SPECIES AND VERMIN ESTABLISHING ITSELF ON THE SITE.

IMPACT CLASSIFICATION - CONSTRUCTION PHASE OF PROPOSED CEMETERY

IMPACT	ASSESSMENT				POINTS	SIGNIFICANCE		STATUS
	DURATION	MAGNITUDE	EXTENT	PROBABILITY		WITH MITIGATION	WITHOUT MITIGATION	
BIOPHYSICAL ENVIRONMENT:								
FAUNA & FLORA								
POTENTIAL LOSS OF INDIGENOUS FLORA AND HABITAT DUE TO VEGETATION CLEARANCE.	2	2	2	5	30	LOW	MODERATE	NEGATIVE
LOSS OF THREATENED OR PROTECTED FLORA OR FAUNA SPECIES.	5	5	1	2	22	LOW	LOW	NEGATIVE
LOSS OF HABITAT, HABITAT FRAGMENTATION AND POSSIBLE LOSS OF IMPORTANT SPECIES ON SITE	5	3	2	2	20	LOW	LOW	NEGATIVE
THERE IS A POTENTIAL FOR AN INCREASED RISK TO ANIMALS FALLING INTO THE OPEN TRENCHES DURING CONSTRUCTION.	2	2	1	2	10	LOW	LOW	NEGATIVE
THE NOISES AND VIBRATIONS RESULTING FROM MACHINERY AND BLASTING IF REQUIRED COULD IMPACT ON FAUNAL SPECIES OUTSIDE THE SITE.	2	3	2	3	21	LOW	LOW	NEGATIVE
INJURY OR EVEN LOSS OF FAUNA IN THE AREA THROUGH POACHING AND HUNTING.	2	2	2	2	12	LOW	LOW	NEGATIVE
POLLUTION RESULTING FROM THE CONSTRUCTION SITE SUCH AS LITTER, SOLID WASTE, SEWERAGE AND SPILLS OF OIL, LUBRICANTS AND FUEL COULD REDUCE THE QUALITY OF THE HABITATS IN THE SURROUNDING AREA AND DIRECTLY IMPACT ON THE HEALTH AND WELFARE OF THE FAUNA AND FLORA SURROUNDING THE SITE.	2	4	3	3	27	LOW	MODERATE	NEGATIVE
INCREASE IN VERMIN POPULATIONS.	2	2	2	3	18	LOW	LOW	NEGATIVE
INVASION BY ALIEN INVASIVE PLANT SPECIES.	2	3	2	4	28	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- THE REMOVAL OF VEGETATION SHOULD BE CONFINED TO CONSTRUCTION SITES. CARE MUST BE TAKEN THAT UNNECESSARY CLEARANCE OF VEGETATION DOES NOT TAKE PLACE. WHERE POSSIBLE, NATURAL VEGETATION MUST BE RETAINED OR PRUNED ESPECIALLY THE WILD OLIVE AND KAREE TREES. A PERMIT NEEDS TO BE OBTAINED FROM DESTEA IF ANY PROTECTED, THREATENED OR NEAR THREATENED TREE SPECIES NEEDS TO BE REMOVED. VARIOUS SPECIES OF INDIGENOUS TREES AND BUSH ON PRIVATE LAND ARE PROTECTED BY LAW (NATIONAL FOREST ACT, 1998 (ACT 84 OF 1998)) IN TERMS OF WHICH IT IS NECESSARY TO OBTAIN A PERMIT FROM THE RELEVANT AUTHORITY IN ORDER TO CUT THEM.
- TREES ON THE NORTHERN BORDER OF THE STUDY AREA SHOULD PREFERABLY BE KEPT IN PLACE WITH THEIR DEEP ROOT SYSTEMS INTACT TO ACT AS A CONTAMINANT BUFFER FOR GROUNDWATER FLOW TOWARDS THE NORTH.
- NO LITTERING BY CONSTRUCTION WORKERS IS PERMITTED. ANY LITTER WILL BE COLLECTED AND REMOVED OFF-SITE TO A REGISTERED WASTE SITE.
- CLEARED INDIGENOUS VEGETATION CAN BE STOCKPILED FOR POSSIBLE REUSE IN LATER REHABILITATION OR LANDSCAPING, OR AS A BRUSH PACK FOR EROSION PREVENTION.
- STOCKPILES OF VEGETATION ARE ONLY TO BE LOCATED IN AREAS APPROVED BY THE ECO, AND MAY NOT EXCEED 2 M IN HEIGHT. METHODS OF STACKING MUST TAKE COGNISANCE OF THE POSSIBLE CREATION OF A FIRE HAZARD.
- TABLE 3 FROM THE CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT NO. 43 OF 1983) (CARA) REGULATION 15 LISTS ALL ALIEN PLANTS THAT OCCUR IN SOUTH AFRICA. NONE OF THESE SPECIES MAY BE INTRODUCED AND THEY MUST ALL BE CONTROLLED AND REMOVED FROM THE PROPOSED SITE.
- CARE MUST BE TAKEN TO AVOID THE INTRODUCTION OF ALIEN PLANT SPECIES TO THE SITE AND SURROUNDING AREAS.
- ALIEN VEGETATION RE-GROWTH MUST BE CONTROLLED THROUGHOUT THE ENTIRE SITE DURING THE CONSTRUCTION PERIOD.
- THE ILLEGAL HUNTING OR CAPTURE OF WILDLIFE WILL NOT BE TOLERATED. SUCH MATTERS WILL BE HANDED OVER TO THE RELEVANT AUTHORITIES FOR PROSECUTION.
- CONSTRUCTION TIME MUST BE KEPT TO A MINIMUM FOLLOWED BY SPEEDY REHABILITATION TO RESTORE HABITAT AND BIODIVERSITY INTEGRITY WHERE REQUIRED.
- ALL REASONABLE MEASURES SHOULD BE TAKEN TO ENSURE THAT TREES ON SITE AND SURROUNDINGS ARE NOT DAMAGED. NO UNCONTROLLED COLLECTION OF FIREWOOD MAY BE ALLOWED ON THE PROPERTY AND SURROUNDINGS.
- THE SPREADING OF EXOTIC INVASIVE PLANT SPECIES AT DISTURBED AREAS SHOULD BE PREVENTED. THE PLANT SPECIES SHOULD ONLY BE REMOVED THROUGH TREE CUTTING AND THE MANUAL REMOVAL OF WEEDS. THE USE OF HERBICIDES TO TREAT THE REMAINING STUMPS SHOULD ONLY BE UNDERTAKEN AFTER CONSULTING AN ECOLOGIST.
- NO OPEN FIRES ARE ALLOWED OUTSIDE DESIGNATED COOKING AREAS.
- NO SMOKING IS TO BE ALLOWED IN THE VICINITY OF FUEL DISPENSING AREAS (SMOKING IS ONLY TO BE ALLOWED IN DESIGNATED "SAFE" AREAS);
- ADEQUATE FIREFIGHTING EQUIPMENT MUST BE AVAILABLE ONSITE AT ALL TIMES AND AT LEAST ONE PERSON PRESENT ON THE SITE MUST BE TRAINED IN THE USE THEREOF.
- FIREBREAKS SHOULD COMPLY WITH THE NATIONAL VELD AND FOREST FIRE ACT, 1998 (CHAPTER 4: DUTY TO PREPARE AND MAINTAIN FIREBREAKS).
- THE CLEARED VEGETATION SHOULD NOT BE BURNED, BUT TAKEN TO THE NEAREST AVAILABLE MUNICIPAL DISPOSAL SITE OR MADE AVAILABLE FOR USE IN A CONTROLLED MANNER.
- SOLID WASTE MUST BE KEPT IN ADEQUATE ANIMAL PROOF WASTE. BUILDING RUBBLE AND DOMESTIC WASTE SHOULD BE REMOVED ON A REGULAR BASIS TO THE CLOSEST AVAILABLE MUNICIPAL DUMPING SITE.
- NO POISON SHOULD BE USED TO CONTROL ANY ANIMALS WITHOUT THE INPUT OF AN ECOLOGIST/ZOOLOGIST.
- REGULAR CLEAN-UP PROGRAMS SHOULD BE PUT INTO EFFECT ALONG THE ACCESS ROAD AND THROUGHOUT THE PREMISES TO LIMIT THE IMPACT OF LITTERING CAUSED BY CONSTRUCTION ACTIVITIES.

- THE REMOVAL AND CLEARING OF VEGETATION WILL NOT BE ALLOWED UNTIL AN APPROVAL IS OBTAINED FROM THE ENVIRONMENTAL CONTROL OFFICER.
- THE IMPORTED SAND USED FOR BEDDING MATERIALS WILL BE FREE OF ALIEN SEEDS AND WILL NOT BE TAKEN FROM ALIEN INFESTED RIVERBEDS.

AIR QUALITY								
INCREASED DUST, SMOKE AND EMISSIONS RESULTING FROM CONSTRUCTION ACTIVITIES.	2	3	2	4	28	LOW	MODERATE	NEGATIVE
AIR POLLUTION FROM VELD FIRES AND BURNING OF WASTE ON SITE.	2	4	3	3	27	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- THE CONSTRUCTION AREA IS TO BE PHYSICALLY SCREENED OFF WITH A SOLID BOUNDARY WALL AT LEAST 1.8M IN HEIGHT, TO PREVENT DUST FROM BEING BLOWN ONTO THE ROAD OR NEIGHBOURING PROPERTIES.
- DUST GENERATION SHOULD BE KEPT TO A MINIMUM. DUST MUST BE SUPPRESSED ON ACCESS ROADS AND CONSTRUCTION AREAS DURING DRY PERIODS BY THE REGULAR APPLICATION OF WATER OR A BIODEGRADABLE SOIL STABILIZATION AGENT.
- SPEED LIMITS MUST BE IMPLEMENTED IN ALL AREAS, INCLUDING PUBLIC ROADS AND PRIVATE PROPERTY TO LIMIT THE LEVELS OF DUST POLLUTION.
- IT IS RECOMMENDED THAT THE CLEARING OF VEGETATION FROM THE SITE SHOULD BE SELECTIVE AND DONE JUST BEFORE CONSTRUCTION SO AS TO MINIMIZE EROSION AND DUST.
- SHOULD CONSTRUCTION IN AREAS THAT HAVE BEEN STRIPPED NOT BE COMMENCING WITHIN A SHORT PERIOD OF TIME THE EXPOSED AREAS SHALL BE RE-VEGETATED OR STABILIZED. SOIL STABILIZING MEASURES COULD INCLUDE ROTOVATING IN STRAW BALES (AT A RATE OF 1 BALE/20 M^2), APPLYING MULCHING OR BRUSH PACKING, OR CREATING WINDBREAKS USING BRUSH OR BALES.
- SAND STOCKPILES ARE TO BE COVERED WITH HESSIAN, SHADE CLOTH OR DPC PLASTIC.
- WHERE POSSIBLE STOCKPILES ARE TO BE LOCATED IN SHELTERED AREAS AND THE USABLE/CUT FACE ORIENTATED AWAY FROM THE DIRECTION OF THE PREVAILING WIND FOR THAT SEASON.
- EXCAVATING, HANDLING OR TRANSPORTING ERODIBLE MATERIALS IN HIGH WIND OR WHEN DUST PLUMES ARE VISIBLE SHALL BE AVOIDED.
- ALL MATERIALS TRANSPORTED TO SITE MUST BE TRANSPORTED IN SUCH A MANNER THAT THEY DO NOT FLY OR FALL OFF THE VEHICLE. THIS MAY NECESSITATE COVERING OR WETTING FRIABLE MATERIALS.
- NO BURNING OF REFUSE OR VEGETATION IS PERMITTED.
- VEHICLES AND CONSTRUCTION EQUIPMENT MUST BE WELL SERVICED SO THAT IT DOES NOT PRODUCE EXCESSIVE SMOKE. THE NUMBER OF TRIPS MADE BY CONSTRUCTION VEHICLES WILL BE MINIMIZED TO REDUCE AIR POLLUTION.
- NO SMOKING IS TO BE ALLOWED IN THE VICINITY OF FUEL DISPENSING AREAS (SMOKING IS ONLY TO BE ALLOWED IN DESIGNATED "SAFE" AREAS);
- ADEQUATE FIREFIGHTING EQUIPMENT MUST BE AVAILABLE ONSITE AT ALL TIMES AND AT LEAST ONE PERSON PRESENT ON THE SITE MUST BE TRAINED IN THE USE THEREOF; AND
- FIREBREAKS SHOULD COMPLY WITH THE NATIONAL VELD AND FOREST FIRE ACT, 1998 (CHAPTER 4: DUTY TO PREPARE AND MAINTAIN FIREBREAKS).

NOISE								
ELEVATED NOISE LEVELS IN THE AREA AS A RESULT OF CONSTRUCTION AND BLASTING ACTIVITIES IF REQUIRED.	2	3	2	5	35	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- NOISE LEVELS SHALL BE KEPT WITHIN ACCEPTABLE LIMITS, AND CONSTRUCTION CREW MUST ABIDE BY NATIONAL NOISE LAWS AND MMM'S BY-LAWS REGARDING NOISE.
- IF WORK IS TO BE UNDERTAKEN OUTSIDE OF NORMAL WORK HOURS PERMISSION, MUST BE OBTAINED. PRIOR TO COMMENCING ANY SUCH ACTIVITY. THE CONTRACTOR IS ALSO TO ADVISE THE POTENTIALLY AFFECTED NEIGHBOURING RESIDENTS. NOTIFICATION COULD INCLUDE LETTER-DROPS.
- NO SOUND AMPLIFICATION EQUIPMENT SUCH AS SIRENS, LOUD HAILERS OR HOOTERS ARE TO BE USED ON SITE EXCEPT IN EMERGENCIES AND NO AMPLIFIED MUSIC IS PERMITTED ON SITE.
- CONSTRUCTION/MANAGEMENT ACTIVITIES INVOLVING USE OF THE SERVICE VEHICLE, MACHINERY, HAMMERING ETC., MUST BE LIMITED TO THE HOURS BETWEEN 8:00AM AND 5:00PM WEEKDAYS; 7:00AM AND 1:30PM ON SATURDAYS; NO NOISY ACTIVITIES MAY TAKE PLACE ON SUNDAYS OR PUBLIC HOLIDAYS.
- EQUIPMENT THAT IS FITTED WITH NOISE REDUCTION FACILITIES (E.G. SIDE FLAPS, SILENCERS ETC.) MUST BE USED AS PER OPERATING INSTRUCTIONS AND MAINTAINED PROPERLY DURING SITE OPERATIONS.
- VEHICLES AND CONSTRUCTION EQUIPMENT MUST BE WELL SERVICED SO THAT IT DOES NOT PRODUCE EXCESSIVE NOISE.
- IT SHOULD BE ENSURED THAT THE CONSTRUCTION PERSONNEL COMPLY WITH SPEED RESTRICTIONS OF 20-30 KM PER HOUR ON THE ACCESS ROAD AND WITHIN THE SITE BOUNDARIES TO REDUCE THE GENERATION OF NOISE.

AESTHETIC ENVIRONMENT								
VISUAL DISTURBANCE TO SURROUNDING RESIDENTS AS A RESULT OF THE TEMPORARY STRUCTURES AND ACTIVITIES REQUIRED LIKE VEGETATION REMOVAL AND PRESENCE OF ASSOCIATED CONSTRUCTION MATERIAL AND VEHICLES/MACHINERY ETC.	2	3	3	5	40	LOW	MODERATE	NEGATIVE
LITTERING AND ILLEGAL DUMPING ON SITE MAY RESULT IN AN ALTERATION OF THE VISUAL CHARACTER OF THE SITE.	2	3	1	4	24	LOW	LOW	NEGATIVE
VISUAL IMPACT FROM LIGHTS AT THE CONTRACTOR'S CAMP AND CONSTRUCTION SITE.	2	3	3	2	16	LOW	LOW	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- REGULAR CLEAN-UP PROGRAMS MUST BE APPLIED AT AND AROUND THE CONSTRUCTION SITE. THE SITE MUST BE MANAGED APPROPRIATELY AND ALL RUBBISH AND RUBBLE REMOVED TO A RECOGNIZED WASTE FACILITY.
- THE CONSTRUCTION CAMP AND STOCKPILED MATERIAL MUST BE POSITIONED AND MANAGED IN AN ECOLOGICAL SOUND MANNER, MINIMIZING THE POTENTIAL NEGATIVELY IMPACTS ON THE SURROUNDING ENVIRONMENT.
- THE PROPOSED SITE IS TO BE PHYSICALLY SCREENED OFF WITH A WALL OF AT LEAST 1.8M IN HEIGHT.
- EXCESS SOIL AND BEDROCK SHOULD BE DISPOSED OF AT AN APPROPRIATE FACILITY.
- WASTE MUST NOT REMAIN ON SITE FOR MORE THAN 2 WEEKS.
- REFUSE BINS MUST BE PROVIDED BY THE CONTRACTOR FOR RUBBISH TO BE PLACE IN BY STAFF.
- EXCESS CONCRETE MUST BE DISPOSED OF CORRECTLY AND AT AN APPROPRIATE FACILITY.
- NO WASTE MAY BE PLACED IN ANY EXCAVATIONS ON SITE.
- THE CONSTRUCTION CAMP MUST BE LOCATED AS FAR FROM OTHER PROPERTIES AS POSSIBLE.
- INDIGENOUS PLANTS OR TREES SHOULD BE PLANTED NEXT TO BUILDINGS TO BREAK THE LINES OF THE

BUILDINGS MAKING THEM LESS VISUALLY INTRUSIVE.

- ADVERTISING SIGNS SHOULD BLEND IN WITH THE ENVIRONMENT AND COMPLY WITH THE SOUTH AFRICAN MANUAL FOR OUTDOOR ADVERTISING (SAMOAC).
- LIGHTING ON SITE IS TO BE SUFFICIENT FOR SAFETY AND SECURITY PURPOSES, BUT SHALL NOT BE INTRUSIVE TO NEIGHBOURING RESIDENTS, DISTURB WILDLIFE, OR INTERFERE WITH ROAD TRAFFIC.
- CONSTRUCTION / MANAGEMENT ACTIVITIES MUST BE LIMITED TO THE DAYLIGHT HOURS BETWEEN 7:00AM AND 5:00PM WEEKDAYS; 7:00AM AND 1:30PM ON SATURDAYS.
- SHOULD OVERTIME/NIGHT WORK BE AUTHORIZED, THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT LIGHTING DOES NOT CAUSE UNDUE DISTURBANCE TO NEIGHBOURING RESIDENTS. IN THIS SITUATION LOW FLUX AND FREQUENCY LIGHTING SHALL BE UTILIZED.

SOILS								
THE SOIL PROFILE WILL BE DISTURBED DURING EXCAVATION AND CONSTRUCTION OF THE DEVELOPMENT AND ITS ASSOCIATED INFRASTRUCTURE.	2	2	1	5	25	LOW	MODERATE	NEGATIVE
EROSION OF STOCKPILES AND TOPSOIL CAN LEAD TO THE SEDIMENTATION OF STREAMS IF NOT CONTROLLED.	2	4	3	4	36	LOW	MODERATE	NEGATIVE
SOIL COMPACTION DUE TO MOVEMENT OF VEHICLES AND MACHINERY.	2	2	1	5	25	LOW	MODERATE	NEGATIVE
SOIL CONTAMINATION CAUSED BY CEMENT, HYDROCARBON LEAKS AND SPILLAGES FROM CONSTRUCTION VEHICLES AND MACHINERY.	2	4	2	4	32	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- THE TOP SOIL WILL BE REMOVED AND STOCKPILED SEPARATELY FROM THE SUBSOIL. AFTER CONSTRUCTION THE INTEGRITY OF THE SOIL PROFILE WILL BE RESTORED BY FIRST FILLING WITH SUBSOIL, FOLLOWED BY TOPSOIL.
- STOCKPILES WILL BE MONITORED FOR EXCESSIVE EROSION AND WHERE NECESSARY MEASURES (E.G. SAND BAGGING) IMPLEMENTED TO CONTROL EROSION. STEEP SLOPES WILL BE STABILISED WITH APPROPRIATE MEASURES SUCH AS GABION BASKETS. ALL AREAS WILL BE REHABILITATED AND GRASSED TO MINIMIZE SOIL EROSION.
- OPEN EXCAVATION WILL BE MARKED WITH DANGER TAPE.
- ANY ELECTRICAL OR PETROL DRIVEN PUMP, USED FOR DISPENSING PURPOSES, MUST BE EQUIPPED AND POSITIONED SO AS NOT TO PRESENT DANGER OF IGNITION OF THE PRODUCT. IF FUEL IS TO BE DISPENSED FROM 200 ℓ (OR BIGGER) DRUMS, PROPER DISPENSING EQUIPMENT WILL NEED TO BE USED (E.G. DRUMS MUST NOT BE TIPPED TO DISPENSE FUEL).
- DRIP PANS MUST BE USED WHEN REFUELLING AND SERVICING CONSTRUCTION VEHICLES OR EQUIPMENT. DRIP PANS MUST BE PLACED UNDERNEATH STATIONARY CONSTRUCTION VEHICLES AND THE HAZARDOUS WASTE (E.G. FUEL, OILS ETC.) TAKEN TO THE NEAREST APPROVED OIL REFINER OR FUEL RECYCLING POINT FOR RECYCLING. SOLID WASTE MUST BE KEPT IN BINS AT THE STAFF HOUSING AND CONSTRUCTION AREAS.
- TOPSOIL MUST ONLY BE USED FOR REHABILITATION PURPOSES AND NOT FOR ANY OTHER USE EXAMPLE I.E. CONSTRUCTION OF ROADS.
- ALL STOCKPILES SHOULD BE KEPT <1.5 M WITH SLOPES NOT EXCEEDING 18 DEGREES.
- THE DURATION OF STORAGE OF THE TOPSOIL SHOULD BE MINIMIZED AS MUCH AS POSSIBLE. STORING TOPSOIL

FOR LONG PERIODS LEADS TO SEED BANK DEPLETION FOLLOWING GERMINATION DURING STORAGE AND ANOXIC CONDITIONS.

- THE TOPSOIL MUST BE UNIFORMLY REDISTRIBUTED IN A MANNER THAT ASSURES PLACEMENT AND COMPACTION COMPATIBLE WITH THE NEEDS OF THE SPECIES THAT WILL BE USED TO RESTORE THE DISTURBED AREA.
- AFTER REDISTRIBUTION OF THE TOPSOIL LAYER DURING REHABILITATION, IT IS IMPORTANT TO ENSURE THAT THE AREA IS PROTECTED AGAINST WIND EROSION SUCH THAT THE TOPSOIL IS NOT BLOWN AWAY.
- WIND NETS CAN EFFECTIVELY MINIMIZE THE LOSS OF TOPSOIL THROUGH WIND EROSION.
- STOCKPILES/REDISTRIBUTED TOPSOIL CAN ALSO BE KEPT WET TO PREVENT FINE PARTICLES BEING REMOVED BY WIND.
- THE STOCK PILES THAT START TO ERODE SIGNIFICANTLY OR CAUSE DUST PROBLEMS WILL BE COVERED WITH HESSIAN OR A PLASTIC COVER.
- THE CONTRACTOR MUST REHABILITATE THE CONSTRUCTION CAMP/SITE ONCE CONSTRUCTION ACTIVITIES HAVE TERMINATED. COMPACTED AREAS WILL BE RIPPED AND MULCHED IN ORDER TO ENSURE RECOVERY OF THE NATURAL VEGETATION COVER.
- THE EXISTING ROAD INFRASTRUCTURE SHOULD BE USED DURING CONSTRUCTION. THE UNCONTROLLED MOVEMENT OF CONSTRUCTION VEHICLES ON SITE WILL NOT BE PERMITTED.
- REGULAR CLEAN-UP PROGRAMS MUST BE PUT INTO EFFECT THROUGHOUT THE SITE TO LIMIT THE IMPACT OF LITTERING CAUSED BY CONSTRUCTION ACTIVITIES.
- RUBBLE MUST BE RE-USED IF POSSIBLE OR REMOVED TO THE MUNICIPAL WASTE DISPOSAL SITE AFTER CONSTRUCTION.
- SOLID WASTE MUST BE KEPT IN ADEQUATE ANIMAL PROOF WASTE BINS. GENERAL WASTE SHOULD BE REMOVED ON A REGULAR BASIS TO THE CLOSEST AVAILABLE LANDFILL SITE.

WASTE								
CONSTRUCTION WASTE OR SPOIL MATERIAL WILL BE GENERATED DURING THE CONSTRUCTION PHASE.	2	3	1	5	30	LOW	MODERATE	NEGATIVE
SEWAGE/EFFLUENT WILL BE GENERATED BY THE CONSTRUCTION WORKERS.	2	4	2	5	40	LOW	MODERATE	NEGATIVE
LITTER. THERE WILL BE AN INCREASED RISK OF LITTER THAT COULD ARISE DURING THE CONSTRUCTION PHASE AT THE CONSTRUCTION SITES.	2	3	2	4	28	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- REGULAR CLEAN-UP PROGRAMS MUST BE APPLIED AT AND AROUND THE CONSTRUCTION SITE.
- SUITABLE WASTE DISPOSAL FACILITIES WILL BE PROVIDED INCLUDING BINS AND REGULAR COLLECTION AND REMOVAL OF WASTE TO AN APPROVED WASTE DISPOSAL SITE.
- THE CONSTRUCTION PHASE OF THE PROJECT WILL BE MONITORED BY THE ECO TO ENSURE COMPLIANCE WITH EMP REQUIREMENTS.
- CHEMICAL TOILETS MUST BE PROVIDED DURING THE CONSTRUCTION PHASE. CORRECT NUMBER OF CHEMICAL TOILETS FOR AMOUNT OF CONSTRUCTION WORKERS AND REGULAR MAINTENANCE THEREOF IS VERY IMPORTANT.

WATER								
LOSS OR DAMAGE TO AQUATIC RESOURCES (WETLANDS).	2	1	3	2	12	LOW	LOW	NEGATIVE
CHEMICAL POLLUTION OF WATER RESOURCES AS A RESULT OF LEAKS OR SPILLS FROM VEHICLES, MACHINERY AND CONSTRUCTION ACTIVITIES (CEMENT).	2	4	3	3	36	LOW	MODERATE	NEGATIVE
DECREASE IN WATER QUALITY AS A RESULT OF EROSION OF BARES SURFACES AND FROM STOCKPILES DURING WIND AND RAIN (SEDIMENTATION).	2	4	2	4	32	LOW	MODERATE	NEGATIVE
CONTAMINATION OF SURFACE WATER CAUSED BY THE STORAGE AND DISPOSAL OF CONSTRUCTION AND DOMESTIC WASTE.	2	4	3	3	27	LOW	MODERATE	NEGATIVE
INCREASE IN STORM WATER RUNOFF LEADING TO REDUCED INFILTRATION OF WATER INTO THE GROUNDWATER.	2	3	3	4	32	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- ANY DEVELOPMENT WITHIN 500M FROM THE BOUNDARY OF ANY WETLAND REQUIRES A WATER USE LICENSE ACCORDING TO DWS REGULATIONS – NONE IDENTIFIED TO EXIST WITHIN 500M FROM THE DEVELOPMENT SITE.
- SOLID WASTE MUST BE MANAGED IN ACCORDANCE TO DWS REQUIREMENTS.
- MANGAUNG METRO MUNICIPALITY MUST PROVIDE PROOF THAT THE WASTE WATER AND WATER TREATMENT WORKS THAT WILL SERVE THIS DEVELOPMENT HAS SUFFICIENT CAPACITY TO HANDLE THE ADDITIONAL LOAD PLUS DEMAND FROM THE PROPOSED DEVELOPMENT BEFORE CONSTRUCTION MAY COMMENCE.
- ANY DEVELOPMENT WITHIN THE 1:100 YEAR FLOOD LINE OR WITHIN THE RIPARIAN HABITAT CONSTITUTES A WATER USE LICENSE IN TERMS OF SECTION 21(C) AND (I) OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 F 1998) AND WILL REQUIRE AUTHORIZATION BEFORE ANY DEVELOPMENT MAY COMMENCE – NONE IDENTIFIED.
- ALL THE REQUIREMENTS OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 OF 1998) AND OTHER REGULATIONS MUST BE TAKEN INTO CONSIDERATION.
- APPROPRIATE EROSION AND STORM WATER MANAGEMENT STRUCTURES MUST BE INSTALLED AROUND THE CONSTRUCTION SITE. THE STORM WATER SERVITUDE AREAS MUST BE KEPT CLEAN AND FREE FROM ANY MATERIAL THAT WILL OBSTRUCT THE FLOW OF STORM WATER.
- ALL CONSTRUCTION VEHICLES, PLANT, MACHINERY AND EQUIPMENT MUST BE PROPERLY MAINTAINED TO PREVENT OIL OR PETROCHEMICAL LEAKS. CONSTRUCTION VEHICLES/MACHINES ARE TO BE REPAIRED IMMEDIATELY UPON DEVELOPING LEAKS. DRIP TRAYS SHALL BE SUPPLIED FOR ALL REPAIR WORK UNDERTAKEN ON MACHINERY ON SITE OR CAMPSITE AREA. DRIP TRAYS ARE TO BE UTILIZED DURING DAILY GREASING AND RE-FUELLING OF MACHINERY AND TO CATCH INCIDENTAL SPILLS AND POLLUTANTS. DRIP TRAYS ARE TO BE INSPECTED DAILY FOR LEAKS AND EFFECTIVENESS, AND EMPTIED WHEN NECESSARY. THIS IS TO BE CLOSELY MONITORED DURING RAIN EVENTS TO PREVENT OVERFLOW.
- FUELS AND CHEMICALS MUST BE STORED IN ADEQUATE STORAGE FACILITIES THAT ARE SECURE, ENCLOSED AND BUNDED.
- ALL REQUIREMENTS AS GIVEN IN THE GEOTECHNICAL AND GEOHYDROLOGICAL REPORTS AND OTHER SPECIALIST REPORTS MUST BE FOLLOWED AT ALL TIMES.
- ALL EXCAVATIONS AND FOUNDATIONS MUST BE INSPECTED REGULARLY.

- ONCE EARTHWORKS ARE COMPLETE, DISTURBED AREAS ARE TO BE STABILIZED WITH MULCH, STRAW OR OTHER APPROVED METHODS AS REQUIRED.
- THE PROPOSED DEVELOPMENT MUST CONNECT TO MUNICIPAL SEWERAGE SYSTEM AS PER THE CIVIL SERVICES REPORT.
- ALL HAZARDOUS SUBSTANCES MUST BE STORED IN SUITABLE CONTAINERS. THE CONTAINERS WILL BE CLEARLY MARKED TO INDICATE CONTENTS, QUANTITIES AND SAFETY REQUIREMENTS. ALL STORAGE AREAS MUST BE BUNDED. THE BUNDED AREA WILL BE OF SUFFICIENT CAPACITY TO CONTAIN A SPILL / LEAK FROM THE STORED CONTAINERS. AN ALPHABETICAL HAZARDOUS CHEMICAL SUBSTANCE (HCS) CONTROL SHEET WILL BE DRAWN UP AND KEPT UP TO DATE ON A CONTINUOUS BASIS. ALL HAZARDOUS CHEMICALS THAT WILL BE USED ON SITE WILL HAVE MATERIAL SAFETY DATA SHEETS (MSDS). ALL EMPLOYEES WORKING WITH HCS WILL BE TRAINED IN THE SAFE USE OF THE SUBSTANCE AND ACCORDING TO THE SAFETY DATA SHEET.
- THE CLEANING OF CEMENT HANDLING EQUIPMENT SHALL BE DONE USING PROPER CLEANING TRAYS. THE VISIBLE REMAINS OF CONCRETE, EITHER SOLID OR FROM WASHING MUST BE REMOVED AND TAKEN TO THE MUNICIPAL LANDFILL SITE.
- IN THE EVENT OF OIL/FUEL SPILLAGES SPILL KITS OR ABSORBENTS MUST BE KEPT AT THE SITE.
- SOLID WASTE MUST BE KEPT IN ADEQUATE BINS AT CONSTRUCTION SITE. REGULAR CLEAN-UP PROGRAMS MUST BE PUT INTO EFFECT THROUGHOUT THE SITE TO LIMIT THE IMPACT OF LITTERING CAUSED BY CONSTRUCTION ACTIVITIES.
- RUBBLE MUST BE RE-USED IF POSSIBLE OR REMOVED TO CLOSEST AVAILABLE MUNICIPAL WASTE DISPOSAL SITE.
- THE CONSTRUCTION MATERIAL (E.G. INFILL MATERIAL) MUST BE MANAGED IN SUCH A WAY THAT THE MATERIAL IS NOT TRANSPORTED TO THE STORM WATER SYSTEM BY WIND OR RAIN.
- WATER SHOULD BE USED SPARINGLY AND IT SHOULD BE ENSURED THAT NO WATER IS WASTED.

SOCIO-ECONOMIC IMPACT ASSESSMENT:								
CREATION OF DIRECT EMPLOYMENT OPPORTUNITIES FOR LOCAL COMMUNITY DURING CONSTRUCTION PHASE.	2	3	3	5	40	MODERATE	MODERATE	POSITIVE
CREATION OF INDIRECT EMPLOYMENT OPPORTUNITIES DUE TO CONSTRUCTION MATERIALS ETC. BEING BOUGHT FROM LOCAL BUSINESSES AND SERVICES REQUIRED FROM INDUSTRIES RELATED TO THE CONSTRUCTION SECTOR.	2	3	3	5	40	MODERATE	MODERATE	POSITIVE
IMPACT ON BLOEMFONTEIN'S ECONOMY DUE TO CONSTRUCTION MATERIALS ETC. BEING BOUGHT FROM LOCAL BUSINESSES AND SERVICES REQUIRED FROM INDUSTRIES RELATED TO THE CONSTRUCTION SECTOR.	2	4	3	4	36	MODERATE	MODERATE	POSITIVE
LABOUR INFLUX.	2	3	5	3	30	LOW	MODERATE	NEGATIVE
HEALTH RISK CAUSED BY THE ILLEGAL DISPOSAL OF WASTE ON THE CONSTRUCTION SITE AND SURROUNDINGS.	2	4	3	2	18	LOW	LOW	NEGATIVE
DISTURBANCE TO TRAFFIC IN THE AREA.	2	3	2	5	35	LOW	MODERATE	NEGATIVE

SKILLS DEVELOPMENT OF LOCAL WORKFORCE.	2	4	3	5	45	MODERATE	MODERATE	POSITIVE
LOSS OF HUMAN LIVES AS A RESULT OF CONSTRUCTION ACTIVITIES AND THE MOVEMENT OF CONSTRUCTION VEHICLES ON SITE AS WELL AS INJURIES TO RESIDENTS, ROAD USERS AND CONSTRUCTION WORKERS AS A RESULT OF CONSTRUCTION ACTIVITIES AND THE MOVEMENT OF CONSTRUCTION VEHICLES.	2	5	3	2	20	LOW	LOW	NEGATIVE
THERE IS A POTENTIAL FOR AN INCREASED RISK TO ANIMALS/PEOPLE FALLING INTO THE OPEN TRENCHES DURING CONSTRUCTION.	2	5	2	4	36	LOW	MODERATE	NEGATIVE
SOCIAL CONFLICTS AND COMPLAINTS, CRIME INCIDENTS, PROSTITUTION, ILLEGAL TRAFFICKING, SPREAD OF INFECTIOUS DISEASES.	2	4	3	4	36	LOW	MODERATE	NEGATIVE
DAMAGE TO ADJACENT PROPERTIES DUE TO VELD FIRES.	2	5	3	4	40	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- WORKERS MUST NOT BE ALLOWED TO OVERNIGHT ON THE PROPOSED SITE. 24 HOUR SECURITY MUST BE APPOINTED DURING THE CONSTRUCTION PHASE OF THE DEVELOPMENT TO HELP PREVENT CRIME/THEFT FROM THE PROPOSED CONSTRUCTION SITE AND SURROUNDING PROPERTIES.
- BOUNDARY FENCE OF AT LEAST 1.8M MUST BE ERECTED BEFORE ANY CONSTRUCTION MAY START ON THE PROPOSED SITE.
- SIGNS SHOULD BE ERECTED ON ALL ENTRANCE GATES INDICATING THAT NO TEMPORARY JOBS ARE AVAILABLE, THEREBY LIMITING OPPORTUNISTIC LABOURERS AND CRIME.
- THE SITE AND CREW ARE TO BE MANAGED IN STRICT ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT NO. 85 OF 1993) AND THE NATIONAL BUILDING REGULATIONS.
- ALL STRUCTURES THAT ARE VULNERABLE TO HIGH WINDS MUST BE SECURED (INCLUDING SCAFFOLDS AND TOILETS).
- ALL MANHOLE OPENINGS ARE TO BE COVERED AND CLEARLY DEMARCATED WITH DANGER TAPE.
- POTENTIALLY HAZARDOUS AREAS SUCH AS TRENCHES ARE TO BE CORDONED OFF AND CLEARLY MARKED AT ALL TIMES.
- THE CONTRACTOR IS TO ENSURE TRAFFIC SAFETY AT ALL TIMES, AND SHALL IMPLEMENT ROAD SAFETY PRECAUTIONS FOR THIS PURPOSE WHEN WORKS ARE UNDERTAKEN ON OR NEAR PUBLIC ROADS.
- NECESSARY PERSONAL PROTECTIVE EQUIPMENT (PPE) AND SAFETY GEAR APPROPRIATE TO THE TASK BEING UNDERTAKEN IS TO BE PROVIDED TO ALL SITE PERSONNEL (E.G. HARD HATS, SAFETY BOOTS, MASKS ETC.).
- ALL VEHICLES AND EQUIPMENT USED ON SITE MUST BE OPERATED BY APPROPRIATELY TRAINED AND / OR LICENSED
- AN ENVIRONMENTAL AWARENESS TRAINING PROGRAMME FOR ALL STAFF MEMBERS SHALL BE PUT IN PLACE BY THE CONTRACTOR. BEFORE COMMENCING WITH ANY WORK, ALL STAFF MEMBERS SHALL BE APPROPRIATELY BRIEFED ABOUT THE EMP AND RELEVANT OCCUPATIONAL HEALTH AND SAFETY ISSUES.

- ALL CONSTRUCTION WORKERS SHALL BE ISSUED WITH ID BADGES AND CLEARLY IDENTIFIABLE UNIFORMS.
- ACCESS TO FUEL AND OTHER EQUIPMENT STORES IS TO BE STRICTLY CONTROLLED.
- NO UNAUTHORIZED FIREARMS ARE PERMITTED ON SITE.
- EMERGENCY PROCEDURES MUST BE PRODUCED AND COMMUNICATED TO ALL THE EMPLOYEES ON SITE. THIS WILL ENSURE THAT ACCIDENTS ARE RESPONDED TO APPROPRIATELY AND THE IMPACTS THEREOF ARE MINIMIZED. THIS WILL ALSO ENSURE THAT POTENTIAL LIABILITIES AND DAMAGE TO LIFE AND THE ENVIRONMENT ARE AVOIDED.
- ADEQUATE EMERGENCY FACILITIES MUST BE PROVIDED FOR THE TREATMENT OF ANY EMERGENCY ON THE SITE.
- THE NEAREST EMERGENCY SERVICE PROVIDER MUST BE IDENTIFIED DURING ALL PHASES OF THE PROJECT AS WELL AS ITS CAPACITY AND THE MAGNITUDE OF ACCIDENTS IT WILL BE ABLE TO HANDLE. EMERGENCY CONTACT NUMBERS ARE TO BE DISPLAYED CONSPICUOUSLY AT PROMINENT LOCATIONS AROUND THE CONSTRUCTION SITE AND THE CONSTRUCTION CREW CAMPS AT ALL TIMES.
- THE CONTRACTOR MUST HAVE A BASIC SPILL CONTROL KIT AVAILABLE AT THE CONSTRUCTION CREW CAMP AND AROUND THE CONSTRUCTION SITE. THE SPILL CONTROL KITS MUST INCLUDE ABSORPTIVE MATERIAL THAT CAN HANDLE ALL FORMS OF HYDROCARBON AS WELL AS FLOATING BLANKETS / PILLOWS THAT CAN BE PLACED ON WATER COURSES.
- OPEN EXCAVATIONS MUST BE MARKED WITH DANGER TAPE.
- EMPLOYMENT OF LOCAL LABOUR WILL BE A POSITIVE IMPACT OF THE PROJECT AND MUST BE ENCOURAGED. DURING THE CONSTRUCTION PHASE, JOBS MUST BE CREATED FOR UNEMPLOYED LOCAL PEOPLE AND SKILLS MUST BE TRANSFERRED TO THEM. WHERE VIABLE, THE WORK MUST BE EXECUTED IN A LABOUR INTENSIVE MANNER TO CREATE AS MANY JOBS AS POSSIBLE.
- IT IS THE EMPLOYER'S RESPONSIBILITY TO ADHERE TO THE MUNICIPALITY'S GUIDELINES, PRINCIPLES AND POLICIES REGARDING EMPLOYMENT.
- THE CONSTRUCTION SITES MUST BE CLEARLY MARKED WITH DANGER TAPE.
- STRICT ACCESS CONTROL MUST BE EXERCISED TO ENSURE THAT NO UNAUTHORIZED PERSONS ENTER THE PROPERTY.
- DESIGNATED EATING AREAS SHOULD BE ESTABLISHED. ADEQUATE REFUSE BINS SHOULD BE PROVIDED AND CLEANED ON A DAILY BASIS.
- NO OPEN FIRES MUST BE ALLOWED OUTSIDE DESIGNATED COOKING AREAS.
- NO SMOKING IS TO BE ALLOWED IN THE VICINITY OF FUEL DISPENSING AREAS (SMOKING IS ONLY TO BE ALLOWED IN DESIGNATED "SAFE" AREAS);
- ADEQUATE FIREFIGHTING EQUIPMENT MUST BE AVAILABLE ONSITE AT ALL TIMES AND AT LEAST ONE PERSON PRESENT ON THE SITE MUST BE TRAINED IN THE USE THEREOF.
- FIREBREAKS SHOULD COMPLY WITH THE NATIONAL VELD AND FOREST FIRE ACT, 1998 (CHAPTER 4: DUTY TO PREPARE AND MAINTAIN FIREBREAKS).
- THE LANDOWNER/OCCUPIER WILL BE NOTIFIED OF CONSTRUCTION ACTIVITIES THAT WOULD IMPEDE ACCESS. IN CONSULTATION, ALTERNATIVE ACCESS WILL BE PROVIDED.
- THE CONTRACTOR SHALL MAKE AVAILABLE SAFE DRINKING WATER FIT FOR HUMAN CONSUMPTION AT THE SITE OFFICES AND ALL OTHER WORKING AREAS.
- WASHING AND TOILET FACILITIES MUST BE PROVIDED ON SITE AND IN THE CONTRACTORS CAMP.
- ADEQUATE NUMBERS OF CHEMICAL TOILETS MUST BE MAINTAINED IN THE CONTRACTORS CAMP TO SERVICE THE STAFF USING THIS AREA. AT LEAST 1 TOILET MUST BE AVAILABLE PER 20 WORKERS USING THE CAMP. TOILET PAPER MUST BE PROVIDED. THE CHEMICAL TOILETS SERVICING THE CAMP MUST BE MAINTAINED IN A GOOD STATE, AND ANY SPILLS OR OVERFLOWS MUST BE ATTENDED TO IMMEDIATELY. THE CHEMICAL TOILETS MUST BE EMPTIED ON A REGULAR BASIS. THE CHEMICAL TOILETS MUST BE SITED TAKING INTO ACCOUNT THE POSSIBILITY OF THE PREVAILING WIND DISPERSING UNPLEASANT ODOURS.
- THE CONTRACTORS SITE MUST BE LOCATED ON THE HIGH SIDE OF THE SITE SO ANY LEAKAGES OR SPILLAGES WILL BE CONTAINED ON SITE.
- TICK REPELLENT MUST ALSO BE PROVIDED (BAYTICOL IS AVAILABLE FROM CERTAIN PHARMACIES AND SHOULD BE SPRAYED ON THE CLOTHING IN CONTACT WITH GRASS, ETC.).

- HIV AIDS AWARENESS AND EDUCATION SHOULD BE UNDERTAKEN BY ALL CONTRACTOR STAFF.
- CARE SHOULD BE TAKEN TO ADEQUATELY DRAIN AREAS SURROUNDING WATER POINTS IN ORDER TO AVOID THE DEVELOPMENT OF POOLS OF STANDING WATER, AS THESE TEND TO BE A BREEDING SOURCE OF FLIES, MOSQUITOES AND OTHER VECTORS.

CULTURAL & HERITAGE IMPACT ASSESSMENT:								
DAMAGE OR LOSS TO CULTURAL AND HISTORIC RESOURCES.	5	4	2	2	22	LOW	LOW	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- IN THE EVENT THAT ANY NEW EVIDENCE OF ARCHAEOLOGICAL SITES OR ARTEFACTS, PALEONTOLOGICAL FOSSILS, GRAVES OR OTHER HERITAGE RESOURCES ARE FOUND DURING THE COURSE OF PROJECT ACTIVITIES, CONSTRUCTION ACTIVITIES MUST IMMEDIATELY STOP AND A QUALIFIED ARCHAEOLOGIST MUST BE INFORMED OF THE FIND. SHOULD ANY EXCAVATION > 1 M² AND EXCEEDING DEPTHS OF >1 M² INTO UNWEATHERED/FRESH BEDROCK OCCUR, MONITORING BY A PROFESSIONAL PALAEONTOLOGIST WILL BE REQUIRED.
- ANY PERSON WHO CAUSES INTENTIONAL DAMAGE TO ARCHAEOLOGICAL OR HISTORICAL SITES OR ARTEFACTS COULD BE PENALISED OR LEGALLY PROSECUTED IN TERMS OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999). ALL ARCHAEOLOGICAL OR HISTORICAL ARTEFACTS THAT ARE UNCOVERED MUST BE REPORTED TO THE SOUTH AFRICAN HERITAGE RESOURCE AGENCY (SAHRA).

ENVIRONMENTAL AWARENESS:								
INCREASING ENVIRONMENTAL AWARENESS BY EDUCATING COMMUNITY AND CONTRACTORS ON THE ENVIRONMENTAL ASPECTS OF THE PROPOSED SITE AS IDENTIFIED WITHIN THE BAR AND EMP.	2	5	2	5	45	MODERATE	MODERATE	POSITIVE
PROMOTING CONSERVATION OF SENSITIVE RESOURCES.	2	5	3	5	50	HIGH	HIGH	POSITIVE

MITIGATION OR MANAGEMENT MEASURES:

- THE SITE MANAGER MUST ENSURE THAT ADEQUATE ENVIRONMENTAL TRAINING TAKES PLACE. ALL EMPLOYEES SHALL HAVE BEEN GIVEN AN INDUCTION PRESENTATION ON ENVIRONMENTAL AWARENESS. WHERE POSSIBLE, THE PRESENTATION NEEDS TO BE CONDUCTED IN THE LANGUAGE OF THE EMPLOYEES. THE ENVIRONMENTAL TRAINING SHOULD, AS A MINIMUM, INCLUDE THE FOLLOWING:
  - THE CONSTRUCTION MUST TAKE PLACE IN ECOLOGICAL SOUND MANNER;
  - THE NEED TO PROTECT AND PRESERVE THE HISTORICAL AND ARCHAEOLOGICAL HERITAGE OF THE SITE, IF ANYTHING IS UNCOVERED;
  - THE IMPORTANCE OF CONFORMANCE WITH ALL ENVIRONMENTAL POLICIES AND PROCEDURES;
  - THE SIGNIFICANT ENVIRONMENTAL IMPACTS, ACTUAL OR POTENTIAL, AS A RESULT OF THEIR ACTIVITIES;
  - THE ENVIRONMENTAL BENEFITS OF IMPROVED PERSONAL PERFORMANCE;
  - THEIR ROLES AND RESPONSIBILITIES IN ACHIEVING CONFORMANCE WITH THE MANAGEMENT AND MITIGATION MEASURES INCLUDED IN THIS REPORT, INCLUDING EMERGENCY PREPAREDNESS AND RESPONSE REQUIREMENTS;
  - THE MITIGATION MEASURES REQUIRED TO BE IMPLEMENTED WHEN CARRYING OUT THEIR SPECIFIC ACTIVITIES AND OPERATING PROCEDURES;
  - THE IMPORTANCE OF NOT LITTERING;
  - THE NEED TO USE WATER SPARINGLY.

No-go alternative (compulsory)

Direct impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING POTENTIAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT WILL NOT OCCUR:

- NO ADDED POSSIBILITY OF SOIL AND GROUND WATER POLLUTION. THE EXISTING SITE IS HOWEVER CURRENTLY PRONE TO EROSION DUE TO AREAS THAT EXISTS WITHOUT ANY VEGETATION.
- NO ADDED INCREASE IN TRAFFIC VOLUMES DUE TO CONSTRUCTION VEHICLES ACCESSING THE SITE.
- NO ADDED NOISE POLLUTION THAT CAN BE ASSOCIATED WITH CONSTRUCTION RELATED ACTIVITIES, MACHINERY AND CONSTRUCTION VEHICLES ACCESSING THE SITE.
- NO ADDED IMPACT ON ATMOSPHERE POLLUTION AND ODOURS FROM CONSTRUCTION ACTIVITIES AND VEHICLES.
- NO ADDED VISUAL INTRUSION & LIGHT POLLUTION ON SURROUNDING AREAS. IT IS OUR OPINION THAT THE SITE IN ITS CURRENT STATE HAS A MUCH LARGER VISUAL IMPACT ON THE SURROUNDINGS AREAS THAN WHAT IT WILL HAVE DURING THE OPERATIONAL PHASE OF THE PROPOSED CEMETERY DEVELOPMENT.
- FAUNA ON THE PROPOSED SITE IS MAINLY LIMITED TO RODENTS AND SOME AVIFAUNA LIKE NORMAL GARDEN BIRDS. NO ADDED IMPACT ON THE LIMITED FLORA & FAUNA THAT CURRENTLY EXISTS ON THE SITE. VERY LIMITED FAUNA IS FOUND ON THE SITE DUE TO THE PROPOSED SITE BEING SMALL IN SIZE, FRAGMENTED AND LOCATED DIRECTLY ADJACENT TO EXISTING RESIDENTIAL AREA.
- CONSTRUCTION SITE HYGIENE WILL NOT BE A FACTOR AS THERE WILL BE NO STAFF ON THE SITE. CERTAIN AREAS OF THE PROPOSED SITE IS HOWEVER IN A BAD STATE DUE TO LARGE AMOUNTS OF BUILDING AND OTHER RUBBLE. THIS IS THE IDEAL AREAS FOR VERMIN POPULATIONS TO INFESTATE AND BECOMING A HUGE PROBLEM TO THE SURROUNDING AREAS.
- THE SAFETY AND SECURITY OF THE STAFF AND THE SITE WILL NOT BE A PROBLEM.

THE DIRECT IMPACTS ASSOCIATED WITH THE DEVELOPMENT NOT BEING APPROVED:

- NO JOBS WILL BE CREATED. THUS THERE WILL BE A LOSS OF INCOME IN THE LOCAL ECONOMY.
- THE PROPOSED SITE WILL STAY IN ITS CURRENT DILAPIDATED STATE AND WILL NOT CONTRIBUTE ANYTHING TO THE LOCAL ECONOMY AS IT IS TOO SMALL TO USE FOR AGRICULTURAL PURPOSES.
- ADDITIONAL BURIAL SPACE WILL NOT BE PROVIDED IN THE AREA. SHORTAGE OF GRAVES SITES IN THE AREA WILL CONTINUE AS THE EXISTING CEMETERY IS AT FULL CAPACITY.

Indirect impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING INDIRECT IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE WILL NOT OCCUR:

- INCREASE IN CONSTRUCTION TRAFFIC VOLUMES.
- THE SAFETY AND SECURITY OF THE STAFF AND THE SITE WILL NOT BE A PROBLEM.
- POSSIBLE CRIME FROM MORE PEOPLE ACCESSING THE AREA DURING CONSTRUCTION PHASE WILL NOT BE A PROBLEM.
- MMM WILL NOT GET MORE IN RATES AND TAXES FROM DEVELOPING THE PROPOSED SITE.

THE INDIRECT IMPACTS ASSOCIATED WITH THE PROPOSED CEMETERY DEVELOPMENT NO TACKING PLACE INCLUDE:

- INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES WILL NOT BENEFIT FROM THE CONSTRUCTION. RESULTING IN FURTHER LOSS OF INCOME IN THE LOCAL ECONOMY.
- SITE WILL STAY UNDEVELOPED.

Cumulative impacts:

- THE CUMULATIVE IMPACTS ASSOCIATED WITH NOT DEVELOPING THE SITE, ARE A LOSS OF REVENUE TO THE LOCAL ECONOMY AND THE LOSS OF POTENTIAL JOBS.
- SITE WILL STAY UNDEVELOPED. STATE OF SITE WILL JUST GET WORSE DUE TO CONTINUED ILLEGAL DUMPING OF REFUSE AND BUILDING RUBBLE. THIS WILL LEAD TO VISUAL IMPACT, MORE ALIEN SPECIES AND VERMIN ESTABLISHING ITSELF ON THE SITE.

THE CEMETERY DEVELOPMENT IS CLASSIFIED AS AN ACTIVITY, WHICH MAY HAVE SIGNIFICANT DETRIMENTAL EFFECTS ON THE ENVIRONMENT. HOWEVER, IN THIS PARTICULAR CASE, IF ALL THE MITIGATION MEASURES INCLUDED IN THIS REPORT AND ATTACHED EMP ARE ADHERED TO, THE RISK OF NEGATIVE ENVIRONMENTAL IMPACTS WILL BE GREATLY REDUCED AND MANAGED TO ACCEPTABLE LEVELS. THEREFORE THE CONSIDERATION OF THE NO-GO OPTION DURING THE CONSTRUCTION PHASE CAN BE JUSTIFIABLY DISMISSED AS AN ALTERNATIVE.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative S1

- SEE THE ABOVE SECTION FOR THE MITIGATION MEASURES FOR EACH OF THE ASPECTS IDENTIFIED FOR THE CONSTRUCTION PHASE OF THE PROJECT. ALSO SEE THE ATTACHED ENVIRONMENTAL MANAGEMENT PLAN IN APPENDIX G.

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the construction
phase:

Alternative A1 (preferred alternative)

Direct impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

Indirect impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

Cumulative impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

No-go alternative (compulsory)

Direct impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

Indirect impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

Cumulative impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative A1:	**Alternative A2:**	**Alternative A3:**
NONE REQUIRED	N/A – APPLIED FOR EXEMPTION	N/A – APPLIED FOR EXEMPTION

3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE OF THE CEMETERY

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the operational phase:

Alternative S1 (preferred alternative)

Direct impacts:

SOIL AND GROUND WATER POLLUTION

- POSSIBILITY OF WATER POLLUTION DUE TO THE SITE BEING USED FOR BURIALS.
- POSSIBILITY OF CONTAMINATION OF THE SOIL, SURFACE AND GROUND WATER AS A RESULT OF PEOPLE LITTERING, ACCIDENTAL SPILLAGES, PETROCHEMICAL LEAKS FROM VEHICLES AND MAINTENANCE EQUIPMENT ETC.
- POSSIBLE POLLUTION OF STORM WATER AND SUBSEQUENT DOWNSTREAM WATER RESOURCES SHOULD THE SEWERAGE INFRASTRUCTURE (BLOCKED PIPES) NOT BE MAINTAINED.

FLORA & FAUNA

- POSSIBLE INCREASE IN VERMIN POPULATIONS.

WASTE GENERATION & DISPOSAL

- THE PRESENCE OF VISITORS ON SITE WILL INCREASE THE LIKELIHOOD OF LITTERING AND THE DUMPING OF SOLID WASTE. WASTE HAS THE POTENTIAL TO MAKE ANY DEVELOPMENT LOOK UNTIDY AND UNHYGIENIC.
- POSSIBILITY OF LITTER SPREADING BY WIND TO ADJACENT AREAS. ESPECIALLY IF REFUSE BAGS IS PUT OUT FOR DELIVERY BEFORE THE DAY SCHEDULED FOR PICKUP BY MMM. STRAY DOGS WILL MOST LIKELY RIP THE BAGS LEADING TO LITTER BEING BLOWN INTO SURROUNDING AREAS.

Indirect impacts:

ATMOSPHERE POLLUTION AND ODOURS

- INCREASED LEVELS OF GAS EMISSIONS FROM VEHICLES ACCESSING AND LEAVING THE CEMETERY DEVELOPMENT.
- AIR POLLUTION FROM BURNING OF GARDEN WASTE.

NOISE POLLUTION

- INCREASE IN AMBIENT NOISE OF THE AREA DUE TO MORE PEOPLE ACCESSING AND MAKING USE OF THE CEMETERY. ADDITIONAL NOISE SOURCES WILL INCLUDE NOISE FROM MAINTENANCE ACTIVITIES AND VEHICLES ACCESSING AND LEAVING THE CEMETERY. THEREFORE NORMAL NOISE SOURCES AS CAN BE FOUND IN DIRECTLY ADJACENT RESIDENTIAL AREA.

VISUAL INTRUSION & LIGHT POLLUTION

- THE OPERATIONAL PHASE OF THE CEMETERY (BUILDINGS) WILL ALTER THE VISUAL CHARACTERISTICS OF THE SITE AND THE SURROUNDINGS. VISUAL IMPACT ON SURROUNDING LANDOWNERS AND PEOPLE MAKING USE OF ROADS RUNNING PAST CEMETERY.
- POSSIBLE LITTERING, RUBBISH AND ILLEGAL DUMPING ON THE SITE WILL BE VISUALLY INTRUSIVE.
- LIGHTS FROM THE CEMETERY MAY BE VISUALLY INTRUSIVE TO SURROUNDING RESIDENTS.

TRAFFIC & ACCESS

- THE REGULAR MOVEMENT OF VISITOR VEHICLES AT TRAVELLING TOWARDS THE CEMETERY, WOULD INCREASE TRAFFIC FLOW AND IMPEDE MOVEMENT.

SAFETY & SECURITY

- POSSIBILITY OF AN INCREASE IN CRIME IN THE AREA DUE TO MORE PEOPLE ACCESSING THE CEMETERY AS WELL AS WORKERS FOR MAINTENANCE ACTIVITIES OF THE PROPOSED NEW DEVELOPMENT.

SPREAD OF ALIEN VEGETATION

- DUE TO THE DISTURBANCE OF THE SITE, ALIEN PLANTS MIGHT BE ABLE TO ESTABLISH, AND COULD BECOME A PROBLEM BY INFESTING NEIGHBOURING LAND.

SOCIO ECONOMIC

- JOB CREATION. THE PROPOSED CEMETERY WILL LEAD TO THE INCREASE IN THE LEVEL OF LOCAL EMPLOYMENT. BOTH SHORT-TERM AND LONG-TERM EMPLOYMENT WILL BE CREATED.
- THE DEVELOPMENT WILL LEAD TO AN INCREASE IN MMM'S INCOME FROM RATES AND TAXES.
- POSITIVE IMPACT ON CURRENT SHORTAGE OF BURIAL SPACE IN SURROUNDING.
- INCREASE IN THE ECONOMIC POTENTIAL OF LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO CEMETERY.

Cumulative impacts:

SURFACE AND WATER POLLUTION

- POTENTIAL POLLUTION OF SURFACE AND GROUNDWATER WATER FROM BURIAL TAKING PLACE AT CEMETERY.
- SPILLAGES OF OIL, LUBRICANTS AND FUEL FROM VEHICLES AND MAINTENANCE EQUIPMENT HAVE THE POTENTIAL TO CONTAMINATE STORM WATER AND SUBSEQUENTLY DOWNSTREAM WATER RESOURCES.
- POTENTIAL POLLUTION OF SURFACE WATER FROM PESTICIDES AND HERBICIDES USED DURING THE OPERATIONAL PHASE OF THE CEMETERY.

INCREASED RUN OFF OF WATER

- THE INCREASE IN DEVELOPED AREAS AS WELL AS PAVED AREAS SUCH AS THE ROADS AND DRIVEWAYS WILL INCREASE THE AMOUNT OF STORM WATER RUNOFF AND THUS REDUCE THE INFILTRATION OF WATER INTO THE GROUNDWATER. THIS MAY RESULT IN LOWER RECHARGE RATE OF GROUNDWATER RESOURCES AS WELL AS EROSION OF AREAS THAT ARE NOT PAVED. STORM WATER RUN-OFF THEREFORE HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION OF DOWNSTREAM WATER RESOURCES IF NOT CONTROLLED.

GROUND WATER POLLUTION

- POTENTIAL POLLUTION OF SURFACE AND GROUNDWATER WATER FROM BURIAL TAKING PLACE AT CEMETERY.
- THE OPERATIONAL PHASE CAN RESULT IN INCREASED INFILTRATION OF CONTAMINANTS INTO THE GROUND WATER AND SOIL RESOURCES. SPILLAGES OF OIL, LUBRICANTS AND FUEL FROM VEHICLES AND MAINTENANCE EQUIPMENT HAVE THE POTENTIAL TO CONTAMINATE THE SOIL AND GROUNDWATER.
- POTENTIAL POLLUTION OF GROUNDWATER FROM PESTICIDES AND HERBICIDES USED DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT.

SOCIO ECONOMIC

- THE PROPOSED DEVELOPMENT WILL LEAD TO AN INCREASE IN THE LOCAL EMPLOYMENT LEVEL OF SURROUNDING AREAS. THE DEVELOPMENT WILL ALSO HAVE A POSITIVE ECONOMIC IMPACT ON LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO THE CEMETERY. BOTH SHORT-TERM AND LONG-TERM EMPLOYMENT WILL BE CREATED IN THIS CASE.

DISTURBANCE OF FAUNA

- THE DISTURBANCE OF FAUNA IN SURROUNDING AREAS DUE TO AN INCREASE IN AMBIENT NOISES AND VIBRATIONS RESULTING FROM THE PROPOSED CEMETERY. DISTURBANCE IS LIKELY TO REMAIN EVEN WITH MITIGATION.

THE MITIGATION MEASURES IN THIS BAR OFFER AN IDEAL OPPORTUNITY TO INCORPORATE PRO-ACTIVE ENVIRONMENTAL MANAGEMENT MEASURES WITH THE GOAL OF ATTAINING SUSTAINABLE DEVELOPMENT. PRO-ACTIVE ENVIRONMENTAL MEASURES MINIMIZE THE CHANCE OF IMPACTS TAKING PLACE DURING THE OPERATIONAL PHASE OF THE PROPOSED CEMETERY. THERE IS STILL THE CHANCE OF ACCIDENTAL IMPACTS TAKING PLACE; HOWEVER, THROUGH THE INCORPORATION OF CONTINGENCY PLANS (I.E. THE MITIGATION MEASURES IN THIS BAR) THE NECESSARY CORRECTIVE ACTION CAN BE TAKEN TO FURTHER LIMIT OR PREVENT POTENTIAL IMPACTS.

No-go alternative (compulsory)

Direct impacts:

THE DIRECT IMPACTS ASSOCIATED WITH THE DEVELOPMENT NOT BEING ALLOWED INCLUDE:

- NO ADDED POSSIBILITY OF CONTAMINATION OF STORM WATER AND SUBSEQUENTLY DOWNSTREAM WATER RESOURCES FROM THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT. AS MENTIONED EARLIER IN THIS REPORT, THE EXISTING SITE IS CURRENTLY PRONE TO EROSION DUE TO LARGE AREAS THAT EXISTS WITHOUT ANY VEGETATION.
- NO ADDED POSSIBILITY OF LITTERING, RUBBISH AND ILLEGAL DUMPING ON THE SITE.
- NO POSSIBLE INCREASE IN VERMIN POPULATIONS.
- THE SITE WILL STAY IN ITS CURRENT DILAPIDATED STATE DUE TO LARGE AMOUNTS OF BUILDING AND OTHER RUBBLE THAT CAN BE FOUND LYING AROUND ON THE SITE. THIS IS THE IDEAL AREAS FOR VERMIN POPULATIONS TO INFESTATE AND BECOMING A HUGE PROBLEM TO THE SURROUNDING AREAS. THIS WILL BE ERADICATED DURING THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT AS LAND WILL BE COVERED WITH BUILDINGS, ROADS, PAVED AREAS AND GARDENS. VERY LIMITED FAUNA IS FOUND ON THE SITE DUE TO THE PROPOSED SITE BEING SMALL IN SIZE, FRAGMENTED AND SITUATED DIRECTLY NEXT TO EXISTING RESIDENTIAL AREA. FAUNA ON THE PROPOSED SITE IS MAINLY LIMITED TO RODENTS AND SOME AVIFAUNA LIKE NORMAL GARDEN BIRDS.

Indirect impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING INDIRECT IMPACTS ASSOCIATED WITH THE OPERATIONAL PHASE OF THE DEVELOPMENT WILL NOT OCCUR:

- NO ALTERATION OF THE EXISTING VISUAL CHARACTERISTICS OF THE SITE AND THE SURROUNDINGS.
- NO ADDED POSSIBILITY OF LIGHTS FROM THE CEMETERY DEVELOPMENT BEING VISUALLY INTRUSIVE TO SURROUNDING RESIDENTS. IT IS OUR OPINION THAT THE SITE IN ITS CURRENT DILAPIDATED STATE HAS A MUCH LARGER VISUAL IMPACT ON THE SURROUNDINGS AREAS THAN WHAT IT WILL HAVE DURING THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT.
- NO INCREASED LEVELS OF GAS EMISSIONS FROM VEHICLES ACCESSING AND LEAVING THE PROPOSED CEMETERY DEVELOPMENT.

- NO ADDED POSSIBILITY OF AIR POLLUTION FROM RESIDENTS BURNING THEIR GARDEN WASTE.
- NO ADDITIONAL JOBS CREATION IN THE AREA. THUS THERE WILL BE A LOSS OF INCOME IN THE LOCAL ECONOMY.
- THE PROPOSED SITE WILL NOT LEAD TO AN INCREASE IN MMM'S INCOME FROM RATES AND TAXES.
- NO CREATION OF NEW GRAVE SITES.
- NO INCREASE IN TRAFFIC VOLUMES AS A RESULT OF THE PROPOSED DEVELOPMENT.
- NO INCREASE IN EXISTING AMBIENT NOISE LEVELS OF THE AREA DUE TO THE OPERATIONAL PHASE OF THE PROPOSED CEMETRY DEVELOPMENT NOT TAKING PLACE. IT MUST BE SAID THAT THE SURROUNDING AREAS IS ALREADY SUBJECTED TO CERTAIN NOISE LEVELS, ESPECIALLY THOSE ASSOCIATED FROM RESIDENTS LIVING IN THE AREA, MAINTENANCE ACTIVITIES TAKING PLACE, AS WELL AS NOISE ORIGINATING FROM VEHICLES USING THE ROADS IN THE AREA.
- NO ADDED POSSIBILITY THAT THE PROPOSED DEVELOPMENT WILL LEAD TO AN INCREASE IN CRIME RATES OF THE SURROUNDING AREA.
- LOCAL BUSINESSES AND INDUSTRIES THAT PROVIDE GOODS AND MAINTENANCE SERVICES WILL NOT BENEFIT FROM THE PROPOSED DEVELOPMENT. RESULTING IN FURTHER LOSS OF POTENTIAL INCOME TO THE LOCAL ECONOMY. THE PROPOSED SITE WILL STAY IN ITS CURRENT DILAPIDATED STATE AND WILL NOT CONTRIBUTE ANYTHING TO THE LOCAL ECONOMY AS IT IS TOO SMALL TO USE FOR AGRICULTURAL PURPOSES.
- NO ADDED POSSIBILITY DUE TO THE DISTURBANCE OF THE SITE, THAT ALIEN PLANTS MIGHT BE ABLE TO ESTABLISH AND COULD BECOME A PROBLEM BY INFESTING NEIGHBOURING LAND. THE CURRENT CONDITION OF LARGE PARTS OF THE PROPOSED SITE IS THAT OF BEING HEAVILY DISTURBED WITH LARGE AMOUNTS OF ALIEN PLANTS AND WEEDS OCCURRING ON THE SITE. THE PROBLEM OF ALIEN PLANTS SPREADING TO ADJACENT LAND IS THEREFORE ALREADY A BIG PROBLEM THAT CAN BE RESOLVED BY ALLOWING THE SITE TO BE DEVELOPED.

Cumulative impacts:

- NO ADDED POSSIBILITY OF WATER POLLUTION OF DOWNSTREAM WATER RESOURCES AS WELL AS AN INCREASE STORM WATER RUNOFF. NO ADDED DISTURBANCE TO FAUNA PRESENT ON SURROUNDING AREAS. FURTHER CUMULATIVE IMPACTS ASSOCIATED WITH NOT DEVELOPING THE SITE ARE A LOSS OF REVENUE IN THE LOCAL ECONOMY AND THE LOSS OF POTENTIAL JOBS CREATION.

IMPACT CLASSIFICATION - OPERATIONAL PHASE OF PROPOSED CEMETERY

IMPACT	ASSESSMENT				POINTS	SIGNIFICANCE		STATUS
	DURATION	MAGNITUDE	EXTENT	PROBABILITY		WITH MITIGATION	WITHOUT MITIGATION	
BIOPHYSICAL ENVIRONMENT:								
FAUNA & FLORA								
THE DISTURBANCE OF FAUNA PRESENT IN SURROUNDING AREAS DUE TO NOISE AND VIBRATIONS	4	2	2	2	16	LOW	LOW	NEGATIVE
SPILLAGES OF PETROCHEMICALS, PESTICIDES AND HERBICIDES MIGHT LEAD TO POLLUTED SOIL AND WATER RESOURCES. FAUNA AND FLORA IN THESE AREAS WHERE CONTAMINATION OCCURS WILL DIE.	4	4	3	3	33	LOW	MODERATE	NEGATIVE
INJURY OR EVEN LOSS OF FAUNA IN THE AREA AND SSURROUNDINGS THROUGH POACHING AND HUNTING.	4	4	2	2	20	LOW	LOW	NEGATIVE
INVASION OF SURROUNDING AREAS BY ALIEN PLANT SPECIES.	4	4	3	2	22	LOW	LOW	NEGATIVE
THE INCREASE IN VERMIN POPULATIONS AS A RESULT OF ILLEGAL WASTE DUMPING.	4	4	2	3	30	LOW	MODERATE	NEGATIVE
MITIGATION OR MANAGEMENT MEASURES:								
• WASTE SORTING AND SEPARATION BINS SHOULD BE PLACED AT ALL PUBLIC FACILITIES, TO ENCOURAGE VISITORS TO DISPOSE WASTE PAPER, GLASS AND GENERAL WASTE SEPARATELY. • AN ADEQUATE NUMBER OF SCAVENGER PROOF LITTER BINS ARE TO BE PLACED THROUGHOUT THE SITE. • WEEDS AND ALIEN VEGETATION MUST BE CLEARED ON REGULAR BASIS AS PART OF ROUTINE MAINTENANCE. • AN ECOLOGIST SHOULD BE CONSULTED ON THE USE OF HERBICIDES/ECO-FRIENDLY PRODUCTS TO CONTROL THE EXOTIC TREE AND SHRUB SPECIES THAT MIGHT ESTABLISH ITSELF ON SITE AS A RESULT OF THE CONSTRUCTION ACTIVITIES. • ALL THE STAFF MUST BE ADEQUATELY TRAINED TO ASSIST WITH THE CONTROLLING OF FIRES. • THE DISTURBED AREAS SHOULD BE REHABILITATED AND MONITORED AFTERWARDS TO INSPECT THE SUCCESSION OF THE VEGETATION WHERE REQUIRED, UNTIL IT IS SELF-SUSTAINABLE.								

AIR QUALITY								
INCREASED LEVELS OF GAS EMISSIONS FROM VEHICLES ACCESSING OR LEAVING THE PROPOSED DEVELOPMENT.	4	2	3	2	18	LOW	LOW	NEGATIVE
AIR POLLUTION DUE TO BURNING OF GARDEN WASTE.	4	4	3	3	33	LOW	MODERATE	NEGATIVE
MITIGATION OR MANAGEMENT MEASURES:								
• THE RELEASE OF EMISSIONS FROM VEHICLES IS CONTROLLED UNDER THE AIR QUALITY ACT (ACT NO 39 OF 1998). • THE BURNING OR BURYING OF SOLID WASTE ON SITE IS PROHIBITED. DO NOT BURN PVC PIPES OR OTHER PLASTIC MATERIALS, AS THIS IS REGARDED AS HAZARDOUS WASTE; AND, • MINIMISE WASTE BY SORTING WASTES INTO RECYCLABLE AND NON-RECYCLABLE WASTE. • MAINTENANCE ARE NOT ALLOWED TO BURN ANY WASTE AS PER MMM BYLAWS AND AIR QUALITY LEGISLATION. ALL GARDEN WASTE MUST BE REMOVED AND DISPOSED OF AT THE REGISTERED LANDFILL SITE. • NO SMOKING IS TO BE ALLOWED BY MAINTENANCE PERSONAL IN ORDER TO PREVENT ACCIDENTAL VELDT FIRES. • THE DISTURBED AREAS SHOULD BE REHABILITATED WHERE REQUIRED AND MONITORED AFTERWARDS TO INSPECT THE SUCCESSION OF THE VEGETATION, UNTIL IT IS SELF-SUSTAINABLE.								
NOISE								
INCREASE IN NOISE LEVELS CAUSED BY OPERATIONAL & MAINTENANCE ACTIVITIES OF THE CEMETERY.	4	4	3	4	44	LOW	MODERATE	NEGATIVE
MITIGATION OR MANAGEMENT MEASURES:								
• NOISE LEVELS MUST BE KEPT WITHIN ACCEPTABLE LIMITS AND RESIDENTS ETC MUST ABIDE BY NATIONAL NOISE LAWS AND MMM'S BY-LAWS REGARDING NOISE. • NO LOUD MUSIC TO BE PERMITTED AT THE CEMETERY. • NO BURIAL TO BE PERMITTED AFTER 17:00. • ALL EQUIPMENT MUST BE WELL MAINTAINED IN ORDER TO ENSURE THAT NOISE LEVELS ARE KEPT TO A MINIMUM.								
AESTHETIC ENVIRONMENT								
VISUAL DISTURBANCE TO SURROUNDING RESIDENTS AND ROAD USERS AS A RESULT OF THE PLANNED CEMETERY.	4	3	2	5	45	MODERATE	MODERATE	NEGATIVE
VISUAL DISTURBANCE DUE TO LITTERING FROM BAD WASTE REMOVAL PRACTICES.	4	3	3	3	22	LOW	LOW	NEGATIVE
LIGHT POLLUTION FROM PROPOSED CEMETERY.	4	3	2	3	27	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- KEEP ALL BURIAL SITES NEAT AND TIDY.
- WASTE SORTING AND SEPARATION BINS SHOULD BE PLACED AT ALL PUBLIC FACILITIES, TO ENCOURAGE VISITORS TO DISPOSE WASTE PAPER, GLASS AND GENERAL WASTE SEPARATELY.
- AN ADEQUATE NUMBER OF SCAVENGER PROOF LITTER BINS ARE TO BE PLACED THROUGHOUT THE SITE.
- WASTE BINS MUST BE PLACED NEXT TO WALK WAYS AS WELL AS AT ALL PUBLIC FACILITIES TO ENSURE THAT THE AREA REMAINS CLEAN.
- LANDSCAPING MUST BE DONE TO ENSURE THAT THE CEMETERY BLENDS IN WITH THE SENSE OF PLACE BY ENHANCING NATURAL FEATURES SUCH AS TREES AND VEGETATION.
- A VISUAL SCREEN OF INDIGENOUS TREES CAN BE PLANTED. THE PLANTING OF THESE TREES ADDS TO THE ECOLOGICAL INTEGRITY OF THE AREA AND ACTS AS PIONEER SPECIES.
- EQUIPMENT MUST BE STORED NEATLY IN DEDICATED AREAS WHEN NOT IN USE.
- THE AREA MUST BE KEPT CLEAR OF ANY GENERAL WASTE.
- STAFF TO CONDUCT A DAILY WALK THROUGH THE SITE TO ENSURE THAT NO WASTE IS PRESENT.
- LIGHT POLLUTION SHOULD BE MINIMIZED AS FAR AS POSSIBLE.
- LIGHTING ON SITE IS TO BE SUFFICIENT FOR SAFETY AND SECURITY PURPOSES, BUT SHALL NOT BE INTRUSIVE TO NEIGHBOURING RESIDENTS OR INTERFERE WITH ROAD TRAFFIC.
- LITTERING, RUBBISH AND ILLEGAL DUMPING ON THE SITE IS NOT ALLOWED AD SHOULD BE WELL MANAGED.
- REFUSE MUST BE CONTAINED AND DISPOSED OF AT THE MUNICIPAL LAND FILL SITE.
- THE BUILDINGS PLANNED MAY NOT BE VISUALLY INTRUSIVE.
- ALL LIGHTS USED FOR NON-SECURITY PURPOSES SHOULD BE ENERGY EFFICIENT FOR EXAMPLE COMPACT FLUORESCENT LIGHTS (CFL).
- OUTSIDE LIGHTS WILL HAVE TO BE DOWNWARD SHINING (EYELID TYPE) AND LOW WATTAGE. FLUORESCENT LAMPS GIVE FIVE TIMES THE LIGHT AND LAST UP TO 10 TIMES AS LONG AS ORDINARY BULBS.
- SIGNS MUST CONFORM TO THE STANDARDS OF SOUTH AFRICAN MANUAL FOR OUTDOOR ADVERTISING CONTROL (SAMOAC).
- THE DEVELOPMENT AS WELL AS AREAS THAT HAVE BEEN LANDSCAPED MUST BE WELL MAINTAINED.
- THE DISTURBED AREAS SHOULD BE REHABILITATED AND MONITORED AFTERWARDS TO INSPECT THE SUCCESSION OF THE VEGETATION, UNTIL IT IS SELF-SUSTAINABLE.
- REGULAR CLEAN-UP PROGRAMS MUST BE APPLIED.

SOILS								
CONTAMINATION OF THE SOIL A RESULT OF MINOR SPILLAGES DURING THE OPERATIONAL AND MAINTENANCE PHASE OF THE CEMETERY.	4	4	3	3	33	LOW	MODERATE	NEGATIVE
WIND AND WATER EROSION OF BARES SOIL SURFACES.	4	4	1	2	18	LOW	LOW	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- THE REHABILITATION AND MAINTENANCE OF CLEARED AREAS MUST BE CONTINUED (E.G. STABILIZED) TO LIMIT EROSION. AREAS WITH BARE SOIL SHOULD BE VEGETATED OR PAVED.
- THE SURFACE DRAINAGE SYSTEM MUST BE REGULARLY INSPECTED, CLEANED AND DAMAGE REPORTED AND REPAIRED, ESPECIALLY AFTER HEAVY PRECIPITATION EVENTS.

WATER								
WATER POLLUTION DUE TO BURIALS AND CONTAMINANTS SEEPING INTO GROUNDWATER.	4	5	2	2	22	LOW	LOW	NEGATIVE
GROUNDWATER USAGE DURING THE OPERATIONAL PHASE.	4	4	1	2	18	LOW	LOW	NEGATIVE
POLLUTION OF STORM WATER BY SPILLAGES OF OIL, LUBRICATIONS AND FUEL FROM VEHICLES AND MAINTENANCE EQUIPMENT.	4	4	3	3	33	LOW	MODERATE	NEGATIVE
POLLUTION OF WATER RESOURCES DUE TO MAKING USE OF PESTICIDES AND HERBICIDES.	4	4	3	3	33	LOW	MODERATE	NEGATIVE
THE INCREASE IN DEVELOPED AREAS AS WELL AS PAVED AREAS SUCH AS THE ROADS AND DRIVEWAYS WILL INCREASE THE AMOUNT OF STORM WATER RUNOFF AND THUS REDUCE THE RECHARGE OF GROUNDWATER.	4	4	3	2	22	LOW	LOW	NEGATIVE
STORM WATER RUN-OFF HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION OF DOWNSTREAM WATER RESOURCES.	4	3	2	3	27	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- NO GRAVES MUST BE ALLOWED OUTSIDE OF THE SAFE DISTANCE ZONE AS INDICATED IN THE GEOTECHNICAL REPORT. THE LAYOUT MAP FOR THE CEMETERY WAS DONE TAKING THIS INTO ACCOUNT.
- A MONITORING BOREHOLE MUST BE DRILLED DOWNGRADIENT OF THE SITE BEFORE ANY BURIALS IS ALLOWED IN THE CEMETERY. WATER SAMPLES SHOULD BE TAKEN AND BACTERIAL AND CHEMICAL ANALYSIS DONE THEREON. THIS MUST BE USED AS BENCHMARK BEFORE ANY BURIALS IS ALLOWED. WATER SAMPLES SHOULD BE TAKEN AND ANALYSED EVERY 6 MONTHS DURING THE OPERATIONAL PHASE OF THE CEMETERY.
- IF CONTAMINATION OR LEAKAGE IS DETECTED A REHABILITATION PLAN MUST BE COMPILED AND EXECUTED.
- INFORM AUTHORITIES OF ANY LEAKS OR SPILLAGES.
- THE SURFACE DRAINAGE SYSTEM MUST BE REGULARLY INSPECTED AND DAMAGE REPORTED AND REPAIRED, ESPECIALLY AFTER HEAVY PRECIPITATION EVENTS.
- ALL HAZARDOUS SUBSTANCES MUST BE STORED IN SUITABLE CONTAINERS. THE CONTAINERS WILL BE CLEARLY MARKED TO INDICATE CONTENTS, QUANTITIES AND SAFETY REQUIREMENTS.

- SERVICING OF VEHICLES AND MACHINERY SHOULD NOT BE ALLOWED WITHIN THE CEMETERY AREA.
- WATER SHOULD BE USED SPARINGLY AND IT SHOULD BE ENSURED THAT NO WATER IS WASTED.
- GROUNDWATER RESOURCES MAY NOT BE USED AS POTABLE WATER RESOURCE FOR THE PROPOSED DEVELOPMENT.

SOCIO-ECONOMIC IMPACT ASSESSMENT:								
PROVISION OF GRAVE SITES TO SURROUNDING AREAS.	4	4	2	5	50	HIGH	HIGH	POSITIVE
INCREASE IN MMM'S RATES AND TAXES IF DEVELOPMENT IS APPROVED.	4	4	2	5	50	HIGH	HIGH	POSITIVE
TRAFFIC IMPACT DUE TO THE PROPOSED DEVELOPMENT.	4	3	3	4	40	LOW	MODERATE	NEGATIVE
INCREASE IN THE ECONOMIC POTENTIAL OF LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO RESIDENTS OF THE PROPOSED DEVELOPMENT.	4	3	3	4	40	MODERATE	MODERATE	POSITIVE
JOB CREATION	4	4	3	4	44	MODERATE	MODERATE	POSITIVE
DISTURBANCE TO ADJACENT LANDOWNERS DUE TO OPERATIONAL PHASE OF DEVELOPMENT, MAINTENANCE ACTIVITIES AND VEHICLES ACCESSING AND LEAVING THE DEVELOPMENT.	4	3	2	4	36	LOW	MODERATE	NEGATIVE
INCREASE IN CRIME DUE TO THE EXISTENCE OF THE PROPOSED DEVELOPMENT.	4	3	2	3	27	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- A COMPLAINT REGISTER THAT RECORDS ALL COMPLAINTS RAISED BY LANDOWNERS, COMMUNITIES OR THE GENERAL PUBLIC ABOUT THE OPERATION ACTIVITIES SHOULD BE RECORDED. THE REGISTER SHALL BE UPDATED REGULARLY, RECORDING NAMES OF THE COMPLAINANTS, THEIR DOMICILE AND CONTACT DETAILS, INCLUDING ACTIONS TAKEN TO RECTIFY THE COMPLAINT.
- NO WASTE MAY BE BURNED ON SITE, THE WASTE GENERATED ON SITE, MUST BE MANAGED IN ACCORDANCE WITH THE MEASURES PROVIDED IN THE SECTION ABOVE.
- TRAFFIC AND ROADS:
  - ACCESS ROADS SHOULD BE KEPT IN A GOOD CONDITION.
  - U-TURNS ARE PROHIBITED ON ALL ROADS.
  - ROAD SURFACES IN THE IMMEDIATE VICINITY OF THE SITE SHOULD BE MONITORED. IF THE ROAD IS DAMAGED THE RELEVANT AUTHORITY MUST BE NOTIFIED.
  - ADVERTISING BOARDS MUST NOT BLOCK THE VISIBILITY OF ANY ROAD USERS.

- ALL CONDITIONS AS PER THE TIS MUST BE COMPLIED WITH.
- IT IS SUGGESTED THAT PROVISION IS MADE FOR PEDESTRIANS AT THE PREFERRED ACCESS TO THE DEVELOPMENT AND PEDESTRIAN CROSSING LINES IMPLEMENTED.
- ANY DAMAGE TO PUBLIC ROADS IS TO BE REPORTED TO THE MANAGEMENT AUTHORITY AND REPAIRED TO ITS ORIGINAL CONDITION; AND,
- SPEED RESTRICTIONS MUST BE ENFORCED.

- WASTE GENERATION & DISPOSAL:
  - SOLID WASTE MUST BE DISPOSED OF ON A WEEKLY BASIS AT A REGISTERED LANDFILL SITE. MMM WILL BE COLLECTING THE WASTE ON A WEEKLY BASIS.
  - RESIDENTS MUST PUT ON THEIR REFUSE ONLY ON THE DAY MMM IS TO COLLECT IT TO AVOID STRAY DOGS RIPPING THE BAGS LEADING TO LITTERING OF THE SURROUNDINGS.
  - THE NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT (ACT NO. 59 OF 2008) COVERS ALL ASPECTS RELATING TO WASTE MANAGEMENT AND MUST BE ADHERED TO AT ALL TIMES. ANY OTHER RELEVANT LEGISLATION MUST ALSO BE ADHERED TO.
  - NO BURNING, ON-SITE BURYING OR DUMPING OF WASTE MUST BE ALLOWED.

CULTURAL & HERITAGE IMPACT ASSESSMENT:

DAMAGE OR LOSS TO CULTURAL AND HISTORIC RESOURCES.	4	2	1	2	14	LOW	LOW	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- ANY PERSON WHO CAUSES INTENTIONAL DAMAGE TO ARCHAEOLOGICAL OR HISTORICAL SITES OR ARTEFACTS COULD BE PENALISED OR LEGALLY PROSECUTED IN TERMS OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999). ALL ARCHAEOLOGICAL OR HISTORICAL ARTEFACTS THAT ARE UNCOVERED MUST BE REPORTED TO THE SOUTH AFRICAN HERITAGE RESOURCE AGENCY (SAHRA).
- ALL KNOWN AND IDENTIFIED ARCHAEOLOGICAL AND HISTORICAL SITES MUST BE LEFT UNTOUCHED.

ENVIRONMENTAL AWARENESS:

INCREASING ENVIRONMENTAL AWARENESS BY EDUCATING FUTURE RESIDENTS IN A WAY TO PROTECT OUR RESOURCES AND THEIR ENVIRONMENT.	4	4	2	4	40	MODERATE	MODERATE	POSITIVE
PROMOTING CONSERVATION OF SENSITIVE RESOURCES E.G. WATER.	4	4	4	4	48	MODERATE	MODERATE	POSITIVE

MITIGATION OR MANAGEMENT MEASURES:

- AN ENVIRONMENTAL AWARENESS EDUCATION PROGRAMME NEEDS TO BE COMPILED.
  - THE IMPORTANCE OF PRESERVING AND PROTECTING INDIGENOUS VEGETATION SPECIES;
  - THE SIGNIFICANCE OF GEOLOGICAL, ARCHAEOLOGICAL AND HISTORICAL FEATURES OF THE SITE AND SURROUNDINGS;
  - THE IMPORTANCE OF NOT LITTERING.
  - THE IMPORTANCE OF USING WATER SPARINGLY.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative S1

SEE THE ABOVE SECTION FOR THE MITIGATION MEASURES FOR EACH OF THE ASPECTS IDENTIFIED FOR THE OPERATIONAL PHASE OF THE PROPOSED CEMETERY. ALSO SEE THE ATTACHED ENVIRONMENTAL MANAGEMENT PLAN.

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the operational phase:

Alternative A1 (preferred alternative)

Direct impacts:

NONE IDENTIFIED

Indirect impacts:

NONE IDENTIFIED

Cumulative impacts:

NONE IDENTIFIED

No-go alternative (compulsory)

Direct impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING POTENTIAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT WILL NOT OCCUR:

- NO ADDED POSSIBILITY OF SOIL AND GROUND WATER POLLUTION. THE EXISTING SITE IS HOWEVER CURRENTLY PRONE TO EROSION DUE TO AREAS THAT EXISTS WITHOUT ANY VEGETATION.
- NO ADDED INCREASE IN TRAFFIC VOLUMES DUE TO CONSTRUCTION VEHICLES ACCESSING THE SITE.
- NO ADDED NOISE POLLUTION THAT CAN BE ASSOCIATED WITH CONSTRUCTION RELATED ACTIVITIES, MACHINERY AND CONSTRUCTION VEHICLES ACCESSING THE SITE.
- NO ADDED IMPACT ON ATMOSPHERE POLLUTION AND ODOURS FROM CONSTRUCTION ACTIVITIES AND VEHICLES.
- NO ADDED VISUAL INTRUSION & LIGHT POLLUTION ON SURROUNDING AREAS. IT IS OUR OPINION THAT THE SITE IN ITS CURRENT STATE HAS A MUCH LARGER VISUAL IMPACT ON THE SURROUNDINGS AREAS THAN WHAT IT WILL HAVE DURING THE OPERATIONAL PHASE OF THE PROPOSED CEMETERY DEVELOPMENT.
- FAUNA ON THE PROPOSED SITE IS MAINLY LIMITED TO RODENTS AND SOME AVIFAUNA LIKE NORMAL GARDEN BIRDS. NO ADDED IMPACT ON THE LIMITED FLORA & FAUNA THAT CURRENTLY EXISTS ON THE SITE. VERY LIMITED FAUNA IS FOUND ON THE SITE DUE TO THE PROPOSED SITE BEING SMALL IN SIZE, FRAGMENTED AND LOCATED DIRECTLY ADJACENT TO EXISTING RESIDENTIAL AREA.
- CONSTRUCTION SITE HYGIENE WILL NOT BE A FACTOR AS THERE WILL BE NO STAFF ON THE SITE. CERTAIN AREAS OF THE PROPOSED SITE IS HOWEVER IN A BAD STATE DUE TO LARGE AMOUNTS OF BUILDING AND OTHER RUBBLE. THIS IS THE IDEAL AREAS FOR VERMIN POPULATIONS TO INFESTATE AND BECOMING A HUGE PROBLEM TO THE SURROUNDING AREAS.
- THE SAFETY AND SECURITY OF THE STAFF AND THE SITE WILL NOT BE A PROBLEM.

THE DIRECT IMPACTS ASSOCIATED WITH THE DEVELOPMENT NOT BEING APPROVED:

- NO JOBS WILL BE CREATED. THUS THERE WILL BE A LOSS OF INCOME IN THE LOCAL ECONOMY.
- THE PROPOSED SITE WILL STAY IN ITS CURRENT DILAPIDATED STATE AND WILL NOT CONTRIBUTE ANYTHING TO THE LOCAL ECONOMY AS IT IS TOO SMALL TO USE FOR AGRICULTURAL PURPOSES.

- ADDITIONAL BURIAL SPACE WILL NOT BE PROVIDED IN THE AREA. SHORTAGE OF GRAVES SITES IN THE AREA WILL CONTINUE AS THE EXISTING CEMETERY IS AT FULL CAPACITY.

Indirect impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING INDIRECT IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE WILL NOT OCCUR:

- INCREASE IN CONSTRUCTION TRAFFIC VOLUMES.
- THE SAFETY AND SECURITY OF THE STAFF AND THE SITE WILL NOT BE A PROBLEM.
- POSSIBLE CRIME FROM MORE PEOPLE ACCESSING THE AREA DURING CONSTRUCTION PHASE WILL NOT BE A PROBLEM.
- MMM WILL NOT GET MORE IN RATES AND TAXES FROM DEVELOPING THE PROPOSED SITE.

THE INDIRECT IMPACTS ASSOCIATED WITH THE PROPOSED CEMETERY DEVELOPMENT NO TACKING PLACE INCLUDE:

- INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES WILL NOT BENEFIT FROM THE CONSTRUCTION. RESULTING IN FURTHER LOSS OF INCOME IN THE LOCAL ECONOMY.
- SITE WILL STAY UNDEVELOPED.

Cumulative impacts:

- THE CUMULATIVE IMPACTS ASSOCIATED WITH NOT DEVELOPING THE SITE, ARE A LOSS OF REVENUE TO THE LOCAL ECONOMY AND THE LOSS OF POTENTIAL JOBS.
- SITE WILL STAY UNDEVELOPED. STATE OF SITE WILL JUST GET WORSE DUE TO CONTINUED ILLEGAL DUMPING OF REFUSE AND BUILDING RUBBLE. THIS WILL LEAD TO VISUAL IMPACT, MORE ALIEN SPECIES AND VERMIN ESTABLISHING ITSELF ON THE SITE.

THE CEMETERY DEVELOPMENT IS CLASSIFIED AS AN ACTIVITY, WHICH MAY HAVE SIGNIFICANT DETRIMENTAL EFFECTS ON THE ENVIRONMENT. HOWEVER, IN THIS PARTICULAR CASE, IF ALL THE MITIGATION MEASURES INCLUDED IN THIS REPORT AND ATTACHED EMP ARE ADHERED TO, THE RISK OF NEGATIVE ENVIRONMENTAL IMPACTS WILL BE GREATLY REDUCED AND MANAGED TO ACCEPTABLE LEVELS. THEREFORE THE CONSIDERATION OF THE NO-GO OPTION DURING THE OPERATIONAL PHASE CAN BE JUSTIFIABLY DISMISSED AS AN ALTERNATIVE.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative A1

- NO REQUIRED.

4. IMPACTS THAT MAY RESULT FROM THE DECOMISSIONING AND CLOSURE PHASE

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the decommissioning or closure phase:

Alternative S1 (preferred alternative)

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative S1

THE ACTIVITY WILL NOT BE DECOMMISSIONED IN THE FUTURE AND THEREFORE THE PROPOSED IMPACTS THEREOF WERE NOT ASSESSED.

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the decommissioning and closure phase:

Alternative A1 (preferred alternative)

Direct impacts: NONE IDENTIFIED *Indirect impacts:* NONE IDENTIFIED *Cumulative impacts:* NONE IDENTIFIED

No-go alternative (compulsory)

Direct impacts: NONE IDENTIFIED *Indirect impacts:* NONE IDENTIFIED *Cumulative impacts:* NONE IDENTIFIED

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative A1	Alternative A2	Alternative A3
NONE REQUIRED	NONE REQUIRED	NONE REQUIRED

5. CUMULATIVE IMPACTS IDENTIFIED FOR THE PROPOSED DEVELOPMENT

CUMULATIVE IMPACTS REFERS TO THE TOTAL IMPACT THAT A SERIES OF ACTIVITIES OR DEVELOPMENTS, EITHER PRESENT, PAST OR FUTURE, WILL HAVE ON THE ENVIRONMENT WITHIN A SPECIFIC LOCALITY OR REGION OVER A PARTICULAR PERIOD OF TIME. CUMULATIVE IMPACTS ASSOCIATED WITH THE ACTIVITY, AND INCLUDE SPACE CROWDING, FRAGMENTATION, TRIGGERS AND THRESHOLDS.

A NUMBER OF CUMULATIVE NEGATIVE IMPACTS HAVE BEEN IDENTIFIED IN EARLIER SECTIONS OF THIS REPORT. THEY INCLUDE AMONGST OTHERS FOR EXAMPLE SURFACE AND GROUND WATER POLLUTION; INCREASED RUN OFF OF WATER ETC. SEE THE ENVIRONMENTAL IMPACT ASSESSMENT CLASSIFICATION IN BOTH THE CONSTRUCTION AND OPERATIONAL PHASES EARLIER IN THIS REPORT. IF THE MITIGATION MEASURES OUTLINED IN THE REPORT ARE IMPLEMENTED THE CUMULATIVE IMPACTS SHOULD BE MITIGATED TO ACCEPTABLE LEVELS WITH THE EXCEPTION BEING THE FAUNAL DISPLACEMENT.

6. PROPOSED MANAGEMENT OF IMPACTS AND MITIGATION

Indicate how identified impacts and mitigation will be monitored and/or audited.

Alternative S1

ENVIRONMENTAL MANAGEMENT PLAN (EMP)

THE DEVELOPER AND THE CONTRACTORS MUST SIGN THAT THEY HAVE READ AND UNDERSTAND THE ATTACHED ENVIRONMENTAL MANAGEMENT PLAN.

ENVIRONMENTAL LAIISON OFFICER (ELO)

THE CONTRACTOR MUST APPOINT AN ENVIRONMENTAL LIAISON OFFICER (ELO) TO ASSIST WITH DAY-TO-DAY MONITORING OF THE CONSTRUCTION ACTIVITIES. ANY ISSUES RAISED BY THE ECO WILL BE ROUTED TO THE ELO FOR THE CONTRACTOR'S ATTENTION. THE ELO SHALL BE PERMANENTLY ON SITE DURING THE CONSTRUCTION PHASE TO ENSURE DAILY ENVIRONMENTAL COMPLIANCE WITH THE EMP AND SHOULD IDEALLY BE A SENIOR AND RESPECTED MEMBER OF THE CONSTRUCTION CREW. PAST EXPERIENCE HAS REVEALED THAT ELO'S THAT CAN RELATE TO THE WORK FORCE ARE THE MOST EFFECTIVE FOR INFORMATION TRANSFER AND ENSURING COMPLIANCE WITH THE EMP.

ENVIRONMENTAL CONTROL OFFICER (ECO)

AN INDEPENDENT ENVIRONMENTAL CONTROL OFFICER (ECO) MUST BE APPOINTED. THE ECO IS RESPONSIBLE FOR THE IMPLEMENTATION OF THE EMP DURING THE CONSTRUCTION PHASE. THE ECO'S RESPONSIBILITIES INCLUDE THE FOLLOWING:

1. COMPLIANCE MONITORING

ENVIRONMENTAL MONITORING OF THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT WILL BE UNDERTAKEN BY THE ECO ON A WEEKLY BASIS DURING THE FIRST MONTH WHERE AFTER MONTHLY AUDITS WILL BE CONDUCTED BY THE ECO DURING THE CONSTRUCTION PHASE. THESE AUDITS CAN BE CONDUCTED RANDOMLY AND DO NOT REQUIRE PRIOR ARRANGEMENT WITH THE PROJECT MANAGER. THE ECO IS RESPONSIBLE FOR THE COMPLIANCE MONITORING ON THE SITE, SPECIFICALLY:

- UNDERTAKING ROUTINE MONITORING AND APPOINTING A COMPETENT PERSON/INSTITUTION TO BE RESPONSIBLE FOR SPECIALIST MONITORING, IF NECESSARY.
- ENSURING COMPLIANCE WITH THE EMP, ENVIRONMENTAL AUTHORISATION, SPECIALIST REPORTS AND ANY OTHER CONDITIONS WHICH MAY BE IMPOSED FROM TIME TO TIME.
- COMPILATION OF AN AUDIT REPORT WITH A RATING OF COMPLIANCE WITH THE EMP. THIS REPORT WILL BE SUBMITTED TO DESTEA.

- REPORTING ON ANY TRANSGRESSIONS BY THE CONTRACTOR.
- COMPLETING START-UP, WEEKLY, MONTHLY AND SITE CLOSURE CHECKLISTS.
- MONITORING AND VERIFYING THAT ENVIRONMENTAL IMPACTS ARE KEPT TO A MINIMUM.
- MONITORING THE UNDERTAKING BY THE CONTRACTOR OF ENVIRONMENTAL AWARENESS TRAINING FOR ALL NEW PERSONNEL COMING ONTO SITE.
- MONITORING THE REMOVAL OF PERSON(S) AND/OR EQUIPMENT NOT COMPLYING WITH THE SPECIFICATIONS.
- ENSURING THAT ACTIVITIES ON SITE COMPLY WITH LEGISLATION OF RELEVANCE TO THE ENVIRONMENT.
- CHECK THAT THE ENVIRONMENTAL DAILY CHECKLISTS ARE FILLED OUT ON A DAILY BASIS.
- ENSURE THAT THE INCIDENT AND ENVIRONMENTAL LOG ARE UP TO DATE AND ALL INCIDENCES HAVE BEEN DEALT WITH CORRECTLY AND TIMEOUSLY.
- ENSURE THAT THE ENVIRONMENTAL COMPLAINTS REGISTER IS UP TO DATE AND ALL COMPLAINTS HAVE BEEN DEALT WITH CORRECTLY AND TIMEOUSLY.
- UNDERTAKING A CONTINUAL INTERNAL REVIEW OF THE EMP AND SUBMITTING A REPORT TO THE DEVELOPER AND DESTEA ENVIRONMENTAL OFFICIAL AT THE END OF THE PROJECT.
- MONTHLY AUDITS MUST BE DONE AND SUBMITTED TO DESTEA DURING THE CONSTRUCTION PHASE. ONCE CONSTRUCTION IS COMPLETED (BEFORE OPERATION OF CEMETERY STARTS) A POST CONSTRUCTION AUDIT MUST BE DONE AND SUBMITTED TO DESTEA.
- DURING OPERATIONAL PHASE OF THE CEMETERY OPERATIONAL AUDITS MUST BE DONE AND SUBMITTED TO DESTEA EVERY 6 MONTHS. IMPORTANT IN THIS AUDITS WILL BE THE BIOLOGICAL AND CHEMICAL TESTS FROM THE MONITORING BOREHOLE.

2. EMP MONITORING

THE MAIN OBJECTIVE OF THE EMP IS TO ENSURE THAT THE ACTIVITIES CARRIED OUT DURING THE VARIOUS PHASES OF THE DEVELOPMENT HAVE A MINIMAL NEGATIVE EFFECT ON THE NATURAL ENVIRONMENT. IT IS THEREFORE IMPORTANT TO ENSURE THAT THE EMP IS REACHING THAT OBJECTIVE. THIS CAN BE DONE THROUGH VARIOUS MONITORING PROGRAMS DESIGNED FOR SUCH A PURPOSE. THE ECO IS RESPONSIBLE FOR THESE MONITORING PROGRAMMES:

- THE EMP MUST BE CONTINUALLY MONITORED TO DETERMINE ITS EFFECTIVENESS AND EFFICIENCY.
- RECORDS OF ALL ACTIVITIES DISCUSSED IN THE EMP SHOULD BE KEPT. THESE RECORDS SHOULD INCLUDE ANY EXCEPTIONS THAT MAY HAVE BEEN MADE (UNDER PERMISSION OF THE ECO AND APPROPRIATE AUTHORITIES), PROBLEMS THAT WERE EXPERIENCED, METHODS USED TO RECTIFY PROBLEMS AS WELL AS THE FINAL OUTCOME. THIS INFORMATION CAN THEN BE USED TO DETERMINE FLAWS IN THE EMP. THESE FLAWS WOULD BE GUIDELINES OR RECOMMENDATIONS THAT ARE INEFFECTIVE AND INEFFICIENT. THEY WOULD THEN NEED TO BE REMOVED OR CHANGED/ADAPTED UNTIL THEY ARE EFFECTIVE AND EFFICIENT.
- RECORDS OF NON-COMPLIANCE MUST BE KEPT. THESE RECORDS MUST INCLUDE DETAILS OF THE OFFENCE, OFFENDER AND PENALTY.
- ALL ASPECTS OF THE EMP NEED TO BE MONITORED/AUDITED TO ENSURE COMPLIANCE AND IN ORDER TO REMEDY ANY PROBLEMS WITH EITHER THE IMPLEMENTATION OR INTERPRETATION OF THE EMP. THESE AUDITS WILL ASSIST IN STREAMLINING METHODS TO AVOID FUTURE CONFLICT SITUATIONS.

3. CONSTRUCTION PLANNING

THE ECO WILL BE RESPONSIBLE FOR:

- ENSURING THAT METHOD STATEMENT'S ARE SUBMITTED FOR THE ACTIVITIES OCCURRING ON THE SITE.
- INFORMING THE CONTRACTORS OF ANY DECISIONS THAT ARE TAKEN CONCERNING THE NATURAL AND SOCIAL ENVIRONMENT DURING THE CONSTRUCTION PHASE OF THE DEVELOPMENT.
- INFORMING THE CONTRACTORS OF THE NECESSARY CORRECTIVE ACTIONS TO BE TAKEN AGAINST EMPLOYEES TRANSGRESSING THE MANAGEMENT ACTIVITIES STIPULATED IN THIS EMP.

- LIAISON WITH CONTRACTORS REGARDING ENVIRONMENTAL MANAGEMENT.
- ASSISTING THE CONTRACTOR IN FINDING ENVIRONMENTALLY RESPONSIBLE SOLUTIONS TO PROBLEMS.

4. METHOD STATEMENT (MS)

MS'S ARE TO BE COMPLETED BY THE PERSON UNDERTAKING THE WORK, THE CONTRACTOR. THE ECO WILL USE THE MS TO AUDIT COMPLIANCE BY THE CONTRACTOR WITH THE REQUIREMENTS OF THE APPROVED MS.

5. SITE HANDOVER

THE ECO WILL ATTEND THE SITE HANDOVER MEETING, WHERE THE EMP WILL FORM PART OF THE AGENDA. KEY ENVIRONMENTAL MATTERS DISCUSSED AT THIS MEETING WILL BE MINUTED AND SUBMITTED AS PART OF THE ENVIRONMENTAL REPORTING. THE CONSTRUCTION SITE LAYOUT PLAN IS A KEY COMPONENT OF SITE HANDOVER AND MUST BE FINALIZED BEFORE SITE HANDOVER CAN BE COMPLETED. THE APPROVED PLAN MUST BE ATTACHED TO THE SITE HANDOVER MEETING MINUTES. AMENDMENTS TO THIS PLAN MUST BE DISCUSSED AND APPROVED AT SUBSEQUENT SITE MEETINGS.

6. SITE INSPECTIONS AND MEETINGS

THE ECO WILL CONDUCT REGULAR COMPLIANCE INSPECTIONS AND MUST ATTEND KEY SITE MEETINGS. THE EMP WILL BE AN AGENDA ITEM OF THE MONTHLY SITE MEETINGS, AND THE RESPONSIBLE DESTEA ENVIRONMENTAL OFFICIAL MAY ATTEND THESE MEETINGS IN ORDER TO PROVIDE INPUT WITH RESPECT TO COMPLIANCE WITH THE EMP. THE ECO IS RESPONSIBLE FOR:

- GIVING A REPORT BACK ON THE ENVIRONMENTAL ISSUES AT THE MONTHLY SITE MEETINGS AND OTHER MEETINGS THAT MAY BE CALLED REGARDING ENVIRONMENTAL MATTERS.
- VISITING THE SITE ON A REGULAR BASIS TO DETERMINE WHETHER COMPLIANCE WITH THE TERMS AND CONDITIONS OF THE ENVIRONMENTAL AUTHORISATION AND THE EMP ARE BEING MAINTAINED.
- INSPECTING THE SITE AND SURROUNDING AREAS REGULARLY WITH REGARD TO COMPLIANCE WITH THE EMP AND WILL RECORD THE FINDINGS OF THE SITE INSPECTION IN A SITE INSPECTION CHECKLIST, WHICH WILL SERVE AS THE ENVIRONMENTAL COMPLIANCE REPORT.
- IF ANY ENVIRONMENTAL MATTERS OCCUR AT OR IN BETWEEN THE SITE MEETINGS THEY MUST BE REFLECTED IN WRITTEN CORRESPONDENCE (EMAIL/FAX/LETTER) DIRECTED OR COPIED TO THE ECO. A COPY OF THIS CORRESPONDENCE MUST BE PLACED IN THE ENVIRONMENTAL MANAGEMENT FILES. SHOULD IT BE DEEMED NECESSARY THE ECO MUST CONDUCT A SITE VISIT AND THE MATTER MUST BE RECORDED IN THE NEXT INSPECTION CHECKLIST.

7. SUBSTANTIAL COMPLETION

THE ECO WILL ATTEND THE SUBSTANTIAL COMPLETION INSPECTIONS.

8. FINAL COMPLETION AND ENVIRONMENTAL PERFORMANCE CERTIFICATE

ONCE THE ENVIRONMENTAL ITEMS ON THE PROBLEM LIST HAVE BEEN ADDRESSED TO THE SATISFACTION OF THE ECO, THE ECO WILL PROVIDE WRITTEN SIGNOFF CONFIRMING THAT THE ENVIRONMENTAL SPECIFICATIONS APPLICABLE TO THE CONTRACTOR(S) HAVE BEEN MET. THIS WILL BE SUBMITTED TO THE PROJECT MANAGER PRIOR TO THE FINAL CERTIFICATE OF COMPLETION BEING ISSUED.

Alternative A1

NONE REQUIRED.

6. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

THE CONSTRUCTION PHASE HAS THE GREATEST IMPACT ON THE ENVIRONMENT EVEN WITH MITIGATION. CLASSIFICATION OF THESE IMPACTS CAN BE FOUND IN THE SECTIONS EARLIER IN THIS REPORT. THE NEGATIVE IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE INCLUDE:

- SOIL AND GROUND WATER POLLUTION.
- EROSION.
- SURFACE WATER POLLUTION.
- INCREASED STORM WATER RUNOFF.
- VISUAL INTRUSION & LIGHT POLLUTION.
- DISTURBANCE OF FLORA & FAUNA.
- CONSTRUCTION TRAFFIC & ACCESS.
- NOISE POLLUTION.
- ATMOSPHERE POLLUTION AND ODOURS RESULTING FROM DUST AND CONSTRUCTION EQUIPMENT.
- SAFETY & SECURITY ON THE SITE.
- HYGIENE.
- SPREAD OF ALIEN VEGETATION.

A NUMBER OF MITIGATION MEASURES TO REDUCE OR IMPROVE THESE IMPACTS HAVE BEEN IDENTIFIED AND ARE PRESENTED IN THE TABLES EARLIER IN THIS REPORT. A KEY ENVIRONMENTAL IMPERATIVE OF THE CONSTRUCTION PHASE WOULD BE TO PREVENT SOIL, AIR, WATER AND NOISE POLLUTION AND EROSION ON THE SITE.

THE CONSTRUCTION PHASE WILL BE ASSOCIATED WITH SOME POSITIVE SOCIO-ECONOMIC IMPACTS IN TERMS OF JOB CREATION AS WELL AS AN INCREASE IN THE ECONOMIC POTENTIAL OF LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS DURING THE CONSTRUCTION PHASE OF THE CEMETERY.

A NUMBER OF CUMULATIVE IMPACTS HAVE BEEN IDENTIFIED IN THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT. THEY INCLUDE THE FOLLOWING:

- SURFACE WATER POLLUTION - SPILLAGES OF CEMENT, OIL, LUBRICANTS AND FUEL FROM CONSTRUCTION VEHICLES, PLANT AND MACHINERY HAS THE POTENTIAL TO CONTAMINATE WATER RESOURCES. THIS SURFACE WATER WILL FLOW INTO THE DRAINAGE LINES POLLUTING DOWNSTREAM WATER RESOURCES. FLORA AND FAUNA IN THESE AREAS WHERE CONTAMINATION OCCURS WILL DIE.
- INCREASED RUN OFF OF WATER - THE INCREASE IN PAVED AREAS SUCH AS THE CONSTRUCTION CAMP, ROADS AND PARKING AREAS WILL INCREASE THE AMOUNT OF STORM WATER RUNOFF AND THUS REDUCE THE INFILTRATION OF WATER INTO THE GROUNDWATER. THIS MAY RESULT IN EROSION OF AREAS THAT ARE NOT PAVED. STORM WATER RUN-OFF HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION OF DOWNSTREAM WATER RESOURCES.
- GROUND WATER POLLUTION - THE CONSTRUCTION PHASE WILL RESULT IN INCREASED POSSIBILITY OF INFILTRATION OF CONTAMINANTS INTO THE GROUND WATER AND SOIL. THE CLEARING OF THE SITE WILL RESULT IN EXPOSED SOIL SURFACES WHICH MAY BE PRONE TO EROSION AND SEDIMENTATION OF DOWNSTREAM WATER

RESOURCES. SPILLAGES OF CEMENT, OIL, LUBRICANTS AND FUEL FROM CONSTRUCTION VEHICLES, PLANT AND MACHINERY HAS THE POTENTIAL TO CONTAMINATE THE SOIL AND GROUNDWATER RESOURCES.

- SOCIO ECONOMIC - THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT WILL RESULT IN DIRECT JOBS BEING CREATED FOR THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT. INDIRECTLY, JOBS ARE ALSO CREATED IN INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES, FOR EXAMPLE, AN ADDITIONAL AMOUNT OF GOODS USED IN CONSTRUCTION WILL BE REQUIRED FROM BUSINESS AND INDUSTRIES RELATED TO THE CONSTRUCTION SECTOR.
- FAUNAL DISPLACEMENT - THE DISPLACEMENT OF FAUNA ON SITE AND SURROUNDINGS AS A RESULT OF AN INCREASE IN AMBIENT NOISES AND VIBRATIONS IS LIKELY TO REMAIN EVEN WITH MITIGATION.

THE NEGATIVE IMPACTS RELATING TO THE OPERATIONAL PHASE INCLUDE THE FOLLOWING (CLASSIFICATION OF THESE IMPACTS CAN BE FOUND IN THE SECTIONS EARLIER IN THIS REPORT):

- SOIL AND GROUND WATER POLLUTION.
- EROSION.
- INCREASED STORM WATER RUNOFF.
- POSSIBLE INCREASE IN VERMIN POPULATIONS.
- DISTURBANCE OF FLORA & FAUNA.
- WASTE GENERATION AND DISPOSAL - LITTERING.
- ATMOSPHERE POLLUTION AND ODOURS RESULTING FROM DUST, VEHICLE ENGINES AND BURNING OF GARDEN WASTE ON SITE.
- NOISE POLLUTION.
- VISUAL INTRUSION & LIGHT POLLUTION.
- TRAFFIC & ACCESS.
- CRIME AND SAFETY & SECURITY.
- SPREAD OF ALIEN VEGETATION.

A NUMBER OF MITIGATION MEASURE HAVE BEEN IDENTIFIED TO REDUCE THE POTENTIAL NEGATIVE IMPACTS DURING THE OPERATIONAL PHASE TO ACCEPTABLE LEVELS SHOULD THEY BE IMPLEMENTED.

POSITIVE IMPACTS RELATED TO THE PROPOSED OPERATIONAL PHASE OF THE CEMETERY DEVELOPMENT INCLUDE:

- JOB CREATION. THE PROPOSED DEVELOPMENT WILL LEAD TO THE INCREASE IN THE LEVEL OF LOCAL EMPLOYMENT. BOTH SHORT-TERM AND LONG-TERM EMPLOYMENT WILL BE CREATED.
- THE DEVELOPMENT WILL LEAD TO AN INCREASE IN MMM'S INCOME FROM RATES AND TAXES.
- AVAILABILITY OF NEW GRAVES SITES TO SURROUNDING COMMUNITIES.
- INCREASE IN THE ECONOMIC POTENTIAL OF LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO THE PROPOSED CEMETERY DEVELOPMENT.

A NUMBER OF CUMULATIVE IMPACTS HAVE BEEN IDENTIFIED IN THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT. THEY INCLUDE THE FOLLOWING:

- SURFACE WATER POLLUTION - SPILLAGES OF OIL, LUBRICANTS AND FUEL FROM VEHICLES AND MAINTENANCE EQUIPMENT HAVE THE POTENTIAL TO CONTAMINATE STORM WATER AND SUBSEQUENTLY DOWNSTREAM WATER RESOURCES. POTENTIAL POLLUTION OF SURFACE WATER FROM PESTICIDES AND HERBICIDES USED DURING THE OPERATIONAL PHASE OF THE CEMETERY DEVELOPMENT.
- INCREASED RUN OFF OF WATER - THE INCREASE IN DEVELOPED AREAS AS WELL AS AREAS PAVED SUCH AS THE ROADS AND PARKING AREAS WILL INCREASE THE AMOUNT OF STORM WATER RUNOFF AND THUS REDUCE THE INFILTRATION OF WATER INTO THE GROUNDWATER. THIS MAY RESULT IN LOWER RECHARGE RATE OF GROUNDWATER RESOURCES AS WELL AS EROSION OF AREAS THAT ARE NOT PAVED. STORM WATER RUN-OFF

THEREFORE HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION OF DOWNSTREAM WATER RESOURCES IF NOT CONTROLLED.

- GROUND WATER POLLUTION - THE OPERATIONAL PHASE CAN RESULT IN INCREASED INFILTRATION OF CONTAMINANTS INTO THE GROUND WATER AND SOIL RESOURCES DUE TO BURIALS TAKING PLACE ON SITE. SPILLAGES OF OIL, LUBRICANTS AND FUEL FROM VEHICLES AND MAINTENANCE EQUIPMENT HAVE THE POTENTIAL TO CONTAMINATE THE SOIL AND GROUNDWATER. POTENTIAL POLLUTION OF GROUNDWATER FROM PESTICIDES AND HERBICIDES USED DURING THE OPERATIONAL PHASE OF THE CEMETERY DEVELOPMENT.
- SOCIO ECONOMIC - THE PROPOSED DEVELOPMENT WILL LEAD TO AN INCREASE IN THE LOCAL EMPLOYMENT LEVEL OF SURROUNDING AREAS. THE DEVELOPMENT WILL ALSO HAVE A POSITIVE ECONOMIC IMPACT ON LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO CEMETERY DEVELOPMENT.
- DISTURBANCE OF FAUNA - THE DISTURBANCE OF FAUNA IN SURROUNDING AREAS DUE TO AN INCREASE IN AMBIENT NOISES AND VIBRATIONS RESULTING FROM THE PROPOSED DEVELOPMENT. DISTURBANCE IS LIKELY TO REMAIN EVEN WITH MITIGATION.

IF THE MITIGATION MEASURES OUTLINED IN THE REPORT ARE IMPLEMENTED THE CUMULATIVE IMPACTS SHOULD BE MITIGATED TO ACCEPTABLE LEVELS DURING BOTH THE CONSTRUCTION AND OPERATIONAL PHASES OF THE PROPOSED DEVELOPMENT.

THE CONSTRUCTION PHASE WILL BE OF SHORT DURATION AND OPERATIONAL PHASE WILL HAVE LIMITED ENVIRONMENTAL IMPACTS IF DEVELOPED ACCORDING TO THE CONDITIONS OUTLINED IN THIS AND OTHER ATTACHED SPECIALIST REPORTS. IT IS THEREFORE CONCLUDED THAT THE PROJECT WILL NOT HAVE ANY MAJOR NEGATIVE IMPACTS ON THE RECEIVING ENVIRONMENT DURING BOTH THE CONSTRUCTION AND OPERATIONAL PHASES OF THE PROPOSED DEVELOPMENT, SHOULD THE MITIGATIONS MEASURES PROPOSED BE IMPLEMENTED.

Alternative B

NONE IDENTIFIED

Alternative C

NONE IDENTIFIED

No-go alternative (compulsory)

THE IMPACTS ASSOCIATED WITH THE PROPOSED CEMETERY DEVELOPMENT NOT BEING ALLOWED INCLUDE:

- NO ADDED POSSIBILITY OF CONTAMINATION OF STORM WATER AND SUBSEQUENTLY DOWNSTREAM WATER RESOURCES FROM THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT. AS MENTIONED EARLIER IN THIS REPORT, THE EXISTING SITE IS CURRENTLY PRONE TO EROSION DUE TO AREAS THAT EXISTS WITHOUT ANY VEGETATION. IT IS OUR OPINION THAT THE PROPOSED DEVELOPMENT WILL MITIGATE THIS EXISTING EROSION AND SEDIMENTATION IMPACT THAT IS CURRENTLY TAKING PLACE ON SITE DURING RAINFALL EVENTS.
- THE SITE WILL STAY IN ITS CURRENT STATE DUE TO LARGE AMOUNTS OF REFUSE AND BUILDING RUBBLE THAT CAN BE FOUND LYING AROUND ON THE SITE. THIS IS THE IDEAL AREAS FOR VERMIN POPULATIONS TO INFESTATE AND BECOMING A HUGE PROBLEM TO THE SURROUNDING AREAS. THIS WILL BE ERADICATED DURING THE OPERATIONAL PHASE OF THE PROPOSED CEMETERY DEVELOPMENT AS LAND WILL BE COVERED WITH BUILDINGS, ROADS, PAVED AREAS AND GARDENS. VERY LIMITED FAUNA IS FOUND ON THE SITE DUE TO THE PROPOSED SITE BEING SMALL IN SIZE, FRAGMENTED AND SITUATED DIRECTLY NEXT TO EXISTING RESIDENTIAL AREA. FAUNA ON THE PROPOSED SITE IS MAINLY LIMITED TO RODENTS AND SOME AVIFAUNA LIKE NORMAL GARDEN BIRDS.
- NO ALTERATION OF THE EXISTING VISUAL CHARACTERISTICS OF THE SITE AND THE SURROUNDINGS. NO ADDED POSSIBILITY OF LIGHTS FROM THE DEVELOPMENT BEING VISUALLY INTRUSIVE TO SURROUNDING RESIDENTS AND ROAD USERS. IT IS OUR OPINION THAT THE SITE IN ITS CURRENT STATE HAS A MUCH LARGER VISUAL IMPACT ON THE SURROUNDINGS AREAS THAN WHAT IT WILL HAVE DURING THE OPERATIONAL PHASE OF THE PROPOSED PRIVATE CEMETERY DEVELOPMENT.

- NO INCREASED LEVELS OF GAS EMISSIONS FROM VEHICLES ACCESSING AND LEAVING THE PROPOSED DEVELOPMENT.
- NO ADDITIONAL JOBS CREATION IN THE AREA. THUS THERE WILL BE A LOSS OF INCOME IN THE LOCAL ECONOMY.
- THE PROPOSED SITE WILL NOT LEAD TO AN INCREASE IN MMM'S INCOME FROM RATES AND TAXES.
- NO CREATION OF NEW GRAVE SITES. PEOPLE WILL STILL NEED TO BURY THEIR LOVED ONES FAR FROM HOME DUE TO THE FACT THAT EXISTING CEMETERIES ARE AT FULL CAPACITY.
- NO INCREASE IN TRAFFIC VOLUMES AS A RESULT OF THE PROPOSED DEVELOPMENT.
- NO INCREASE IN EXISTING AMBIENT NOISE LEVELS OF THE AREA DUE TO THE OPERATIONAL PHASE OF THE PROPOSED CEMETERY DEVELOPMENT NOT TAKING PLACE. IT MUST BE SAID THAT THE SURROUNDING AREAS IS ALREADY SUBJECTED TO NOISE LEVELS, ESPECIALLY THOSE ASSOCIATED FROM RESIDENTS LIVING IN THE AREA, MAINTENANCE ACTIVITIES TAKING PLACE, AS WELL AS NOISE ORIGINATING FROM VEHICLES USING THE ROADS IN THE AREA.
- NO ADDED POSSIBILITY THAT THE PROPOSED DEVELOPMENT MIGHT LEAD TO AN INCREASE IN CRIME RATES OF THE SURROUNDING AREA.
- LOCAL BUSINESSES AND INDUSTRIES THAT PROVIDE GOODS AND MAINTENANCE SERVICES WILL NOT BENEFIT FROM THE PROPOSED CEMETERY DEVELOPMENT. RESULTING IN FURTHER LOSS OF POTENTIAL INCOME TO THE LOCAL ECONOMY. THE PROPOSED SITE WILL STAY IN ITS CURRENT UNDEVELOPED AND POLLUTED STATE AND WILL NOT CONTRIBUTE ANYTHING TO THE LOCAL ECONOMY.
- NO ADDED POSSIBILITY DUE TO THE DISTURBANCE OF THE SITE, THAT ALIEN PLANTS MIGHT BE ABLE TO ESTABLISH AND COULD BECOME A PROBLEM BY INFESTING NEIGHBOURING LAND. THE CURRENT CONDITION OF LARGE PARTS OF THE PROPOSED SITE IS THAT OF BEING HEAVILY DISTURBED WITH LARGE AMOUNTS OF ALIEN PLANTS AND WEEDS OCCURRING ON THE SITE. THE PROBLEM OF ALIEN PLANTS SPREADING TO ADJACENT LAND IS THEREFORE ALREADY A BIG PROBLEM THAT CAN BE RESOLVED BY ALLOWING THE SITE TO BE DEVELOPED.

THE CUMULATIVE IMPACTS ASSOCIATED WITH THE CEMETERY DEVELOPMENT NOT BEING ALLOWED INCLUDE:

- NO ADDED POSSIBILITY OF WATER POLLUTION OF DOWNSTREAM WATER RESOURCES AS WELL AS AN INCREASE STORM WATER RUNOFF. NO ADDED POSSIBILITY OF GROUNDWATER POLLUTION DUE TO BURIALS TAKING PLACE AT THE NEW CEMETERY. FURTHER CUMULATIVE IMPACTS ASSOCIATED WITH NOT DEVELOPING THE SITE ARE A LOSS OF REVENUE IN THE LOCAL ECONOMY AND THE LOSS OF POTENTIAL JOBS CREATION.

THE PROPOSED ALTERNATIVE WAS CONSIDERED BASED ON THE LOCATION WITHIN LAND OWNED BY THE APPLICANT, AVOIDANCE OF ANY SENSITIVITY ON SITE, AND ALIGNS THE PROPOSED PROJECT WITH THE SURROUNDING LAND USES.

OTHER LOCATION ALTERNATIVES WERE ASSESSED EARLIER IN THE REPORT AND THE PROPOSED SITE WAS CHOSEN AFTER IDENTIFYING POSITIVES AND NEGATIVES FOR EACH SITE.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES	~~NO~~

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

N/A

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

REGULATIONS RELATING TO THE MANAGEMENT OF HUMAN REMAINS MUST BE ADHERED TO AND RELAXATION APPROVED FROM MMM REGARDING DISTANCES FROM RESIDENTIAL AREAS AND WATER BODIES AS PER DEPARTMENT OF HEALTH REGULATIONS. THE PLANNED CEMETERY IS NOT 500M AS REQUIRED FROM NEAREST HABITABLE BUILDINGS. THE CLIENT MUST THEREFORE APPLY FOR THE RELAXATION OF DISTANCES FROM RESIDENTIAL AREAS AND WATER BODIES AS CONTEMPLATED IN SECTION 2 (2) (A) OF THE NATIONAL HEALTH ACT REGULATIONS, NO 61 OF 2003. THE CEMETERY CAN ONLY BE ALLOWED SHOULD MMM RELAX THESE DISTANCES AS PER THAT OF THE PLANNED CEMETERY.

- AS PER REGULATIONS RELATING TO MANAGEMENT OF HUMAN REMAINS (HEALTH ACT, NO 61 OF 2003) ALL BURIALS MUST COMPLY WITH THE FOLLOWING ENVIRONMENTAL REQUIREMENTS AND MUST ME MADE CONDITIONS WITHIN THE ENVIRONMENTAL AUTHORIZATION AS WELL. THEY INCLUDE:
    - CEMETERIES MUST BE LOCATED OUTSIDE THE 1:100 YEAR FLOODLINE;
    - CEMETERIES MUST BE LOCATED AT LEAST 350M FROM GROUND WATER RESOURCES FOR DRINKING PURPOSES AND AT LEAST 500M FROM THE NEAREST HABITABLE BUILDING.
    - FOR A PREFERRED BURIAL SITE WITH SOIL OF SANDY-CLAY MIX OF LOW POROSITY AND A SMALL AND FINE GRAIN TEXTURE, THE WATER TABLE SHOULD BE AT LEAST 2.5M DEEP IN ORDER TO ALLOW FOR TRADITIONAL GRAVE DEPTH OF SIX FEET (1.8M);
    - FOR AREAS WITH HIGHER WATER TABLES, THE LOCAL GOVERNMENT MAY DETERMINE A REASONABLE DEPTH WITH ADDITIONAL WALLING RECOMMENDATIONS TO PROTECT UNDERGROUND WATER; AND
    - THE COVERING SOIL SHALL NOT BE LESS THAN 1M, SHOULD 2 BODIES BE BURIED IN THE SAME GRAVE, 300MM OF SOIL SHALL BE MAINTAINED BETWEEN THE COFFINS.

OUR RECOMMENDATION, BASED ON THE ASSESSMENT OF THE AVAILABLE INFORMATION, IS THAT APPLICATION FOR THE PROPOSED CEMETERY DEVELOPMENT SHOULD BE AUTHORISED PROVIDED THAT MMM RELAX THE DISTANCE BETWEEN CEMETERY AND NEAREST HABITABLE BUILDING, SENSITIVE PLANNING, DESIGN AND GOOD ENVIRONMENTAL MANAGEMENT BE CARRIED OUT BY THE PROPONENT DURING ALL PHASES OF CEMETERY DEVELOPMENT. A VARIETY OF MITIGATION MEASURES HAVE BEEN IDENTIFIED THAT WILL SERVE TO MITIGATE THE SCALE, INTENSITY, DURATION OR SIGNIFICANCE OF THE IMPACTS IDENTIFIED. THESE INCLUDE GUIDELINES TO BE APPLIED DURING THE CONSTRUCTION AND OPERATIONAL PHASES OF THE CEMETERY PROJECT.

IT IS SUBMITTED THAT THE PROPOSED MITIGATORY MEASURES, IF IMPLEMENTED, WILL REDUCE THE SIGNIFICANCE OF THE IDENTIFIED IMPACTS TO "LOW", AND THAT THE PROPOSED PROJECT SHOULD PROCEED. THE RECOMMENDATIONS MADE IN THE FOLLOWING SPECIALIST STUDY MUST BE ADHERED TO.

- SERVICES REPORT;
- TRAFFIC IMPACT ASSESSMENT;

- HERITAGE AND PALAEONTOLOGICAL IMPACT ASSESSMENT;
- GEOTECHNICAL REPORT;
- GEOHYDROLOGICAL REPORT.

THE DEVELOPMENT MUST ALSO COMPLY WITH ALL OTHER ENVIRONMENTAL LEGISLATION, GUIDELINES AND REQUIREMENTS THAT ARE RELATED TO ISSUES SUCH AS NOISE AND LIGHT POLLUTION, AIR QUALITY, WATER USE AND MANAGEMENT, SOLID WASTE MANAGEMENT, SEWAGE AND STORM WATER MANAGEMENT.

IN LIGHT OF THE FINDINGS OF THIS REPORT AND SPECIALIST REPORTS ATTACHED, IT IS OUR SUBMISSION THAT A SUSTAINABLE ENVIRONMENT CAN BE CREATED CONTAINING DIRECT AND INDIRECT BENEFITS TO THE LARGER COMMUNITY AND AREA THAT OUTWEIGHS THE POTENTIAL ENVIRONMENTAL IMPACTS/DISRUPTION IDENTIFIED DURING BOTH THE CONSTRUCTION AND OPERATIONAL PHASE OF THE PLANNED CEMETERY.

Is an EMPr attached?	YES	~~NO~~

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

_____
NAME OF EAP

_____ _____
SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information