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 **07 April 2017**. 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.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	YES	~~NO~~

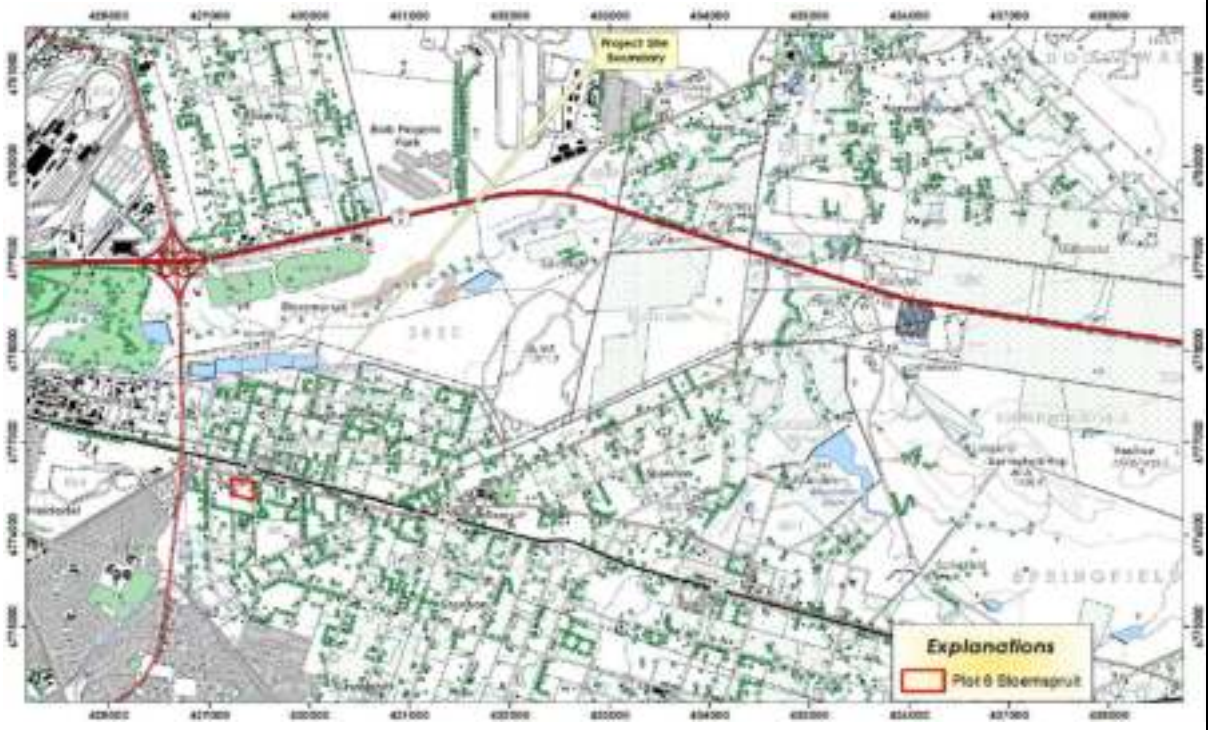
If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

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

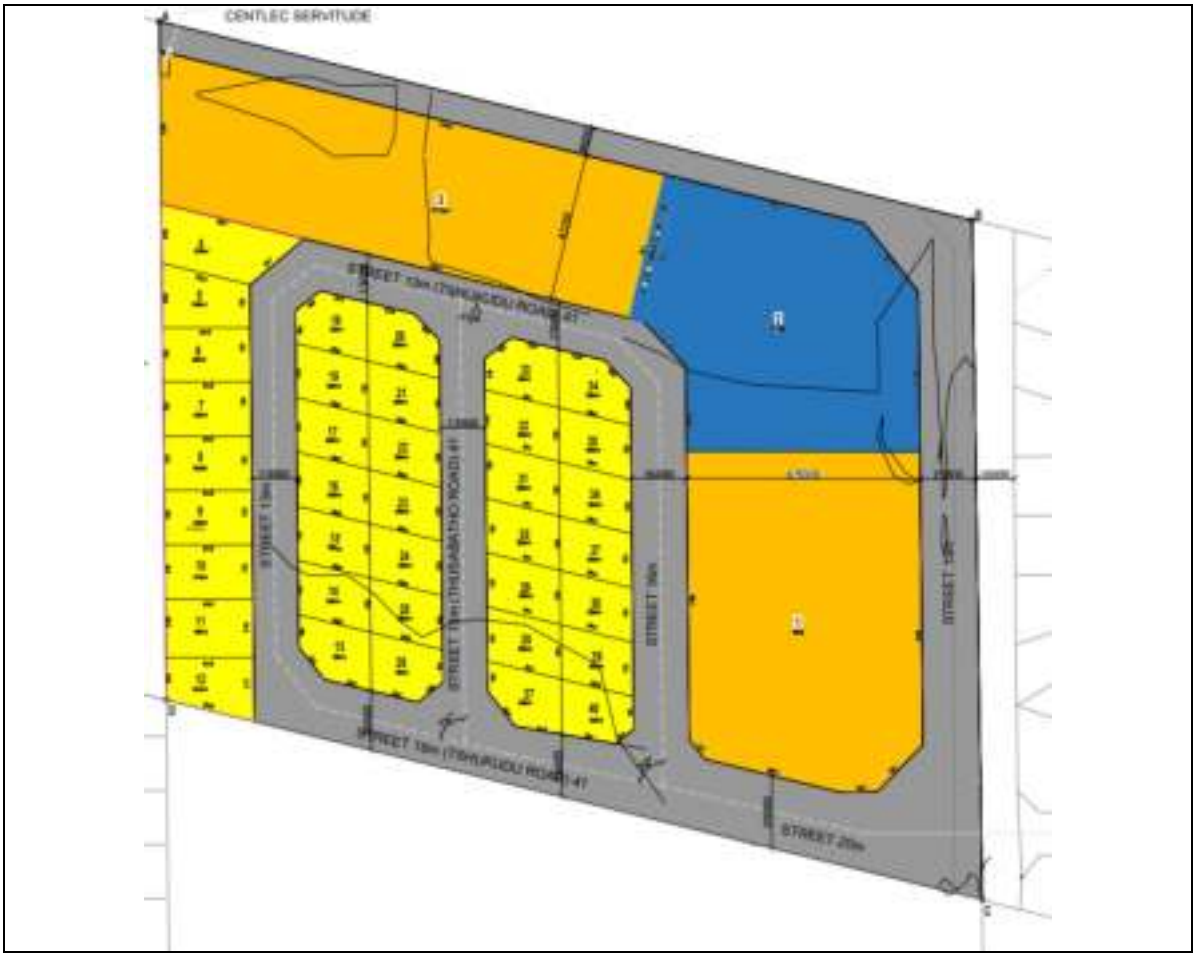
THIS APPLICATION DEALS WITH THE PROPOSED ESTABLISHMENT OF A TOWN ON PLOT 6, BLOEMSPRUIT, BLOEMFONTEIN. THE SITE IS ABOUT 4.34HA IN EXTENT AND IS LOCATED ON THE SOUTHWESTERN CORNER OF THE EEUFEES AVENUE / SHANNON ROAD INTERSECTION. THE ABOVE-MENTIONED PROPERTY CAN BE SEEN ON THE PLANS BELOW AND ATTACHED APPENDIX A & C.

FIGURE 1 – LOCALITY OF THE PROPOSED SITES SHOWING THE RELEVANT PLOTS



THE DEVELOPER (JRB TRUST (PTY) LTD) WISHES TO DO AN APPLICATION FOR A TOWNSHIP ESTABLISHMENT IN ORDER TO ENABLE HIM TO SET OUT ERVEN WITH DIFFERENT ZONINGS. THE MAIN AIM OF THE TOWNSHIP ESTABLISHMENT IS TO DO A RESIDENTIAL AND BUSINESS DEVELOPMENT.

FIGURE 2 – LAYOUT MAP OF THE PROPOSED TOWNSHIP DEVELOPMENT



THE PROPOSED TOWNSHIP DEVELOPMENT WILL CONSIST OF 41 ERVEN AND STREETS BROKEN DOWN INTO:

TABLE 1: LAND USE ALLOCATION

LAND USE

ZONING	LAND USE	ERF NUMBERS	No. OF STANDS	AREA OF STANDS& STREETS	% OF AREA
SPECIAL RES	RESIDENTIAL 300m ²ERVEN	4-40	37	11989m(	29.00
STREETS		41	1	14552m(	33.00
GENERAL RESIDENTIAL	TOWN HOUSES	1,3	2	11593m(	27.00
GENERAL BUSINESS		2	1	4798m(	11.00
TOTAL			41	42932m(	100

THE LAND USES WILL BE CONTROLLED IN TERMS OF THE PROVISIONS OF 'ANNEXURE F' OF THE LAND USE REGULATIONS AS DETERMINED BY THE MUNICIPALITY AND THE FOLLOWING LAND USE CONTROLS WILL BE

APPLICABLE AS INDICATED IN TABLE 2 BELOW.

A TOWNSHIP ESTABLISHMENT APPLICATION WILL BE COMPILED BY A REGISTERED TOWN AND REGIONAL PLANNER. PROVISION WILL BE MADE FOR THE ESTABLISHMENT OF A TOWNSHIP CONSISTING OF 41 ERVEN WHICH EQUATES TO 37 SINGLE RESIDENTIAL DWELLINGS AND APPROXIMATELY 35 TOWNHOUSE UNITS. IN TOTAL AND ESTIMATED 72 RESIDENTIAL UNITS. ONE ERF WILL BE ZONED FOR GENERAL BUSINESS PURPOSES AND THE REMAINING ERF AS "STREET". THE ERVEN OF THE TOWN WILL BE CLASSIFIED IN THE UNDER-MENTIONED USE ZONES AS STIPULATED IN THE BLOEMSPRUIT TOWN PLANNING SCHEME (NO. 1 OF 1986). THE ERVEN WILL CONSIST OF THE FOLLOWING:

TABLE 2: LAND USE CONTROLS

Use Zone	No. of Stands	Land Use	Area
Special Residential	37	As per Scheme	11 989m² (29%)
General Residential	2	As per scheme but a max of 30 Units per HA	11 593m² (27%)
General Business	1	As per Scheme	4 798m ² (11%)
Street	1	As per Scheme	14 552m² (33%)
TOTAL	41		

THE FOLLOWING TITLE CONDITIONS ARE RESTRICTIVE AND HEREBY APPLIED FOR TO BE REMOVED – TITLE DEED NO. T1219/2019:

1. TITLE CONDITIONS A: ONDERWORPE AAN DIE VOLGENDE KONDISIES SOOS UITEENGESIT IN AKTE VAN TRANSPORT NO T4174/1918 GEREGISTREER OP 5 SEPTEMBER 1918:

(A) THAT THE SAID LOT SHALL BE SUBJECT TO A PERMANENT UNOBSTRUCTED "RIGHT OF WAY" IN FAVOUR OF THE GENERAL PUBLIC AS INDICATED ON THE GENERAL PLAN, AND ALSO THE DIAGRAM ON THE SAID LOT.
(B) THAT THE SAID LOT SHALL NOT BE SUBDIVIDED WITHOUT THE CONSENT OF THE GOVERNMENT.
(C) THAT THE SAID LOT SHALL BE USED ONLY FOR RESIDENTIAL AND AGRICULTURAL PURPOSES, AND NO TRADE OR BUSINESS SHALL BE CARRIED ON THEREON WITHOUT THE CONSENT OF THE GOVERNMENT.

AND

2. TITLE CONDITION B: EN VERDER ONDERWORPE KRAGTENS NOTARIELE AKTE VAN SERWITUUT NR 515S/1964 GEREGISTREER OP 23 SPETMBER 1984 AAN 'N REG VAN WEG, 153 VIERKANTE VOET, SOOS MEER TEN VOLLE SAL BLYK UIT DIE GESEGDE NOTARIELE AKTE MET KAART DAARBY AANGEHEG.

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

Listed activity as described in GN 983,984 and 985	Description of project activity
Example: ***GN 983 Item xx xx): The construction of a bridge where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.***	***A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river***
GN 983 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 DEVELOPMENT WILL REQUIRE CLEARANCE OF MORE THAN 1 HA OF INDIGENOUS VEGETATION. THE SITE IS FURTHERMORE SITUATED WITHIN THE URBAN EDGE.
GN 983 ITEM 28: RESIDENTIAL, MIXED, RETAIL, COMMERCIAL, INDUSTRIAL OR INSTITUTIONAL DEVELOPMENTS WHERE SUCH LAND WAS USED FOR AGRICULTURE OR AFFORESTATION ON OR AFTER 01 APRIL 1998 AND WHERE SUCH DEVELOPMENT: (II) WILL OCCUR OUTSIDE AN URBAN AREA, WHERE THE TOTAL LAND TO BE DEVELOPED IS BIGGER THAN 1 HECTARE; EXCLUDING WHERE SUCH LAND HAS ALREADY BEEN DEVELOPED FOR RESIDENTIAL, MIXED, RETAIL, COMMERCIAL, INDUSTRIAL OR INSTITUTIONAL PURPOSES.	THE SITE IS 4.34HA IN EXTENT.

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

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
PROPOSED SITE	29 08 17.00 S	26 16 24.74 E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
NO SITE ALTERNATIVE		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
NO SITE ALTERNATIVE		

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)
PREFERRED ALTERNATIVE	29 08 17.00 S	26 16 24.74 E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
NO ALTERNATIVE		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
NO ALTERNATIVE		

c) Technology alternatives

Alternative 1 (preferred alternative)
THE LAYOUT AS DESCRIBED EARLIER IN THIS REPORT.
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 DILAPIDATED 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 DILAPIDATED 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)	± 4.34Ha
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

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	~~NO~~
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 FROM EEUFEES AVENUE.

A TRAFFIC IMPACT STUDY (TIA) WAS DONE AS PART OF THE APPLICATION AND CAN BE FOUND ATTACHED IN APPENDIX D.

THE FOLLOWING CONCLUSIONS WERE MADE IN THE TIA ATTACHED:

- THE DEVELOPMENT CAN POTENTIALLY GENERATE 109 AND 306 NEW TRIPS DURING THE MORNING AND AFTERNOON PEAK HOURS RESPECTIVELY.
- AS A RESULT OF THE IMMINENT CLOSURE OF THE ROSE AVENUE / SHANNON ROAD INTERSECTION, THE EXTENT OF LATENT RIGHTS AND THE TRIP GENERATION OF THE AREAS UNDER CONSIDERATION, THE EEUFEES AVENUE / SHANNON ROAD INTERSECTION WILL HAVE TO BE SIGNIFICANTLY UPGRADED AND SIGNALISED.
- BASED ON THE CAPACITY ANALYSIS NO IMPROVEMENTS ARE REQUIRED AT THE NASSAU STREET / SHANNON ROAD, BUT 95TH PERCENTILE QUEUES WILL BECOME EXTENSIVE AND IT ADVISABLE THAT THE INTERSECTION BE UPGRADED WITH TURNING LANES.
- THE, YET TO BE ESTABLISHED, EEUFEES AVENUE / ROSE AVENUE INTERSECTION SHOULD BE ESTABLISHED WITH TURNING LANES. CLOSURE OF THE ROSE AVENUE / SHANNON ROAD INTERSECTION WILL RESULT IN A MAJOR INCREASE IN TRAFFIC VOLUMES AND IN THE LONGER TERM THE INTERSECTION WILL PROBABLY WARRANT SIGNALISATION.
- THE INTERSECTION ON EEUFEES AVENUE PROVIDING ACCESS TO THE DEVELOPMENT SHOULD BE DEVELOPED WITH TURNING LANES
- THE INTERSECTION OF SONNEBLOM STREET WITH THE "COROBRIK" M10 INTERCHANGE PROBABLY ALREADY REQUIRES SIGNALISATION. LATENT RIGHTS WILL ESCALATE THE NEED FOR SIGNALISATION AND IT IS IMPORTANT TO DO A QUEUE LENGTH STUDY TO DETERMINE WHEN SIGNALISATION IS REQUIRED.
- F) THE SITE LAYOUT IS IN PRINCIPLE ACCEPTABLE BASED ON THE SPECIFIC FINDINGS OF THE STUDY THE DEVELOPMENT CAN BE APPROVED FROM A TRAFFIC POINT OF VIEW.

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.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES		Please explain
THE LOCAL AUTHORITY HAS EARMARKED THE AREA FOR NEIGHBOURHOOD DEVELOPMENT IN THE SPATIAL DEVELOPMENT FRAMEWORK.			
(b) Urban edge / Edge of Built environment for the area	YES		Please explain
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?).	YES		Please explain
IN TERMS OF THE IDP, THE AREA IN WHICH THE PROPERTY OF APPLICATION IS LOCATED HAS BEEN EARMARKED FOR "NEIGHBOURHOOD DISTRICT". THIS MEANS THAT THE FOLLOWING DEVELOPMENTS WILL BE REGARDED AS COMPLIANT TO THE POLICY AND COULD BE ALLOWED TO TAKE PLACE IN THE FUTURE: • MIXED LAND USE DEVELOPMENT WITH ECONOMIC AND RECREATIONAL FACILITIES SHOULD BE ENCOURAGED. • NEW TOWNSHIP ESTABLISHMENTS SHOULD BE GOVERNED IN TERMS OF EXISTING LEGISLATION.			
(d) Approved Structure Plan of the Municipality	YES		Please explain
IN TERMS OF THE GENERAL LAND USE ADMINISTRATION THE PROPERTY IN QUESTION IS FALLING UNDER THE JURISDICTION OF THE BLOEMSPRUIT TOWN PLANNING SCHEME. THE MAJORITY OF PROPERTIES IN THIS AREA ARE ZONED "HOLDINGS" IN TERMS OF THE BLOEMSPRUIT TOWN PLANNING SCHEME. THIS MEANS THAT THEIR PRIMARY LAND USE IS RESIDENTIAL AND AGRICULTURAL PURPOSES.			

(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?)		NO	Please explain
NO IMPACT ON THE EMF.			
(f) Any other Plans (e.g. Guide Plan)		NO	Please explain
THE SOUTH EASTERN AREAS STRUCTURE PLAN WAS DEVELOPED TO CATER FOR THE MEDIUM-TERM GROWTH OF RESIDENTIAL EXPANSION IN THIS SECTOR OF THE CITY. DEVELOPMENT STRATEGIES WERE COUCHED IN ORDER TO DEAL WITH THE RESTORATION OF BALANCE IN THE CITY. AMONG THE STRATEGIES THE CITY DEVELOPED WAS THE N8 CORRIDOR; MANGAUNG ACTIVITY CORRIDOR; URBAN RENEWAL OF BATHO, BOCHABELA, PHAHAMENG; FORMALIZATION OF INFORMAL SETTLEMENTS. PLANNING FOR INFRASTRUCTURAL PROVISION TO DEAL WITH THE EXPECTED POPULATION GROWTH WAS DONE AND CULMINATED IN THE INFRASTRUCTURE MASTER PLAN. THIS DOCUMENT REPRESENTED A GUIDE FOR MUNICIPAL INVESTMENT PLANNING AND SERVED TO OPEN DEVELOPMENT OPPORTUNITIES IN THE TARGETED AREAS WERE COMMUNITIES TEND TO SETTLE.			
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)?	YES		Please explain
THE SDF HAS INDICATED THIS SECTION OF THE CITY AS AN AREA OF FUTURE NEIGHBOURHOOD DEVELOPMENT, A NUMBER OF PLOTS IN THE VICINITY HAVE ALREADY BEEN DEVELOPED AS NEW TOWNSHIP EXTENSIONS. THESE ARE POPULAR IN THE MARKET AND FAMILIES ARE SETTLING TO START UP NEW LIFE IN THE NEW AREA.			
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
IN THE NORMAL COURSE OF EVENTS, THE CITY OF BLOEMFONTEIN HAS BEEN EXPANDING IN ALL DIRECTIONS AND THERE IS A DEFINITE TENDENCY TOWARDS THE SOUTH-EASTERN AREA AFTER THE OLD TOWNSHIP AREAS AND HEIDEDAL REACHED WHAT CAN REFER TO AS "SATURATION" POINT. THE AREAS WHICH WERE RESERVED AS "BUFFER ZONES" WERE THE FIRST TO BE TAKEN OVER BY SPONTANEOUS OCCUPATION AND THIS PHENOMENON CONTINUED TO MANIFEST IN THE SURROUNDING LAND.			

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
ELECTRICITY, WATER AND SEWER CONNECTIONS ARE AVAILABLE AT THE SITE. SEE THE SERVICES REPORTS ATTACHED TO THIS REPORT.			
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.)	YES		Please explain
PLANNING FOR INFRASTRUCTURAL PROVISION TO DEAL WITH THE EXPECTED POPULATION GROWTH WAS DONE AND CULMINATED IN THE INFRASTRUCTURE MASTER PLAN. THIS DOCUMENT REPRESENTED A GUIDE FOR MUNICIPAL INVESTMENT PLANNING AND SERVED TO OPEN DEVELOPMENT OPPORTUNITIES IN THE TARGETED AREAS WERE COMMUNITIES TEND TO SETTLE. THE SERVICES REQUIRED FOR THE NEW DEVELOPMENT PLANNED ARE ALREADY IN PLACE AND IT MAKES THE DEVELOPMENT TO BE FULLY FUNCTIONAL WITHIN A DESIGNATED AREA. THIS NEW EXTENSION OF THE CITY IS MAKING ORDERLY DEVELOPMENT POSSIBLE AND WILL ENSURE THE SUSTAINABILITY OF THE CITY IN THE LONG TERM.			
7. Is this project part of a national programme to address an issue of national concern or importance?		NO	Please explain
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 SDF HAS INDICATED THIS SECTION OF THE CITY AS AN AREA OF FUTURE NEIGHBOURHOOD DEVELOPMENT, A NUMBER OF PLOTS IN THE VICINITY HAVE ALREADY BEEN DEVELOPED AS NEW TOWNSHIP EXTENSIONS. THESE ARE POPULAR IN THE MARKET AND FAMILIES ARE SETTLING TO START UP NEW LIFE IN THE NEW AREA. THE SERVICES REQUIRED FOR THE NEW EXTENSIONS ARE ALREADY IN PLACE AND IT MAKES THE DEVELOPMENT TO BE FULLY FUNCTIONAL WITHIN A DESIGNATED AREA. THIS NEW EXTENSION OF THE CITY IS MAKING ORDERLY DEVELOPMENT POSSIBLE AND WILL ENSURE THE SUSTAINABILITY OF THE CITY IN THE LONG TERM. THE GROUPING OF VARIOUS LAND USES HAS BEEN DONE TAKING AREAS OF MAJOR TRAFFIC FLOWS AND CONCENTRATION OF PEOPLE INTO ACCOUNT. THE SINGLE RESIDENTIAL AREAS WERE AGGREGATED IN QUIET AREAS AWAY FROM THE MAJOR ARTERIAL ROAD RUNNING NORTH OF THE DEVELOPMENT.			

9. Is the development the best practicable environmental option for this land/site?	YES		Please explain

SURROUNDING AREAS HAVE ALREADY BEEN DEVELOPED WITH RESIDENTIAL UNITS. ALL SERVICES ARE ALSO AVAILABLE AT THE PROPOSED SITE. THE SITE IS FURTHERMORE ALREADY EARMARKED FOR RESIDENTIAL DEVELOPMENT IN THE MMM SDF. NO ENVIRONMENTAL CONSTRAINTS WERE IDENTIFIED TO EXIST ON THE PROPOSED SITE.

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 AND RESIDENCE ON IT IS CURRENTLY IN A DILAPIDATED STATE.

LOTS OF RUBBISH, OLD BUILDING RUBBLE AND RUINS CAN BE FOUND ON THE SITE.

11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?		NO	Please explain
THE SITE IS ALREADY EARMARKED FOR RESIDENTIAL DEVELOPMENT IN THE MMM SDF. RESIDENTIAL DEVELOPMENTS ALREADY EXIST IN THE ADJACENT SURROUNDINGS.			
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
THE DEVELOPMENT WILL PROVIDE MUCH NEEDED RESIDENTIAL AND BUSINESS DEVELOPMENT.			
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
PROMOTE MIXED HOUSING STRATEGIES AND MORE COMPACT URBAN DEVELOPMENT TO HELP PEOPLE ACCESS PUBLIC SPACES AND FACILITIES, STATE AGENCIES, AND WORK AND BUSINESS OPPORTUNITIES.			

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

THE GENERAL OBJECTIVE OF INTEGRATED ENVIRONMENTAL MANAGEMENT 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.

THE PRINCIPLES SET OUT IN SECTION 2 OF NEMA WERE APPLIED AND INCORPORATED. THEY INCLUDED:

(A) RELEVANT CONSIDERATIONS, INCLUDING THE STATE'S RESPONSIBILITY TO RESPECT, PROTECT, PROMOTE AND FULFIL THE SOCIAL AND ECONOMIC RIGHTS IN CHAPTER 2 OF THE CONSTITUTION AND IN PARTICULAR THE BASIC NEEDS OF CATEGORIES OF PERSONS DISADVANTAGED BY UNFAIR DISCRIMINATION;
(B) SERVED AS THE GENERAL FRAMEWORK WITHIN WHICH THIS EIA AND EMP WERE FORMULATED;
(2) THE EIA AND EMP PLACED PEOPLE AND THEIR NEEDS AT THE FOREFRONT OF ITS CONCERN, AND SERVED THEIR PHYSICAL, PSYCHOLOGICAL, DEVELOPMENTAL, CULTURAL AND SOCIAL INTERESTS EQUITABLY.
(3) DEVELOPMENT MUST BE SOCIALLY, ENVIRONMENTALLY AND ECONOMICALLY SUSTAINABLE.
(4) (A) ALL RELEVANT FACTORS OF SUSTAINABLE DEVELOPMENT WERE CONSIDERED INCLUDING THE FOLLOWING:
(I) THAT THE DISTURBANCE OF ECOSYSTEMS AND LOSS OF BIOLOGICAL DIVERSITY ARE AVOIDED, OR, WHERE THEY CANNOT BE ALTOGETHER AVOIDED, ARE MINIMISED AND REMEDIED;
(II) THAT POLLUTION AND DEGRADATION OF THE ENVIRONMENT ARE AVOIDED, OR, WHERE THEY CANNOT BE ALTOGETHER AVOIDED, ARE MINIMISED AND REMEDIED;
(III) THAT THE DISTURBANCE OF LANDSCAPES AND SITES THAT CONSTITUTE THE NATION'S CULTURAL HERITAGE IS AVOIDED, OR WHERE IT CANNOT BE ALTOGETHER AVOIDED, IS MINIMISED AND REMEDIED;
(IV) THAT WASTE IS AVOIDED, OR WHERE IT CANNOT BE ALTOGETHER AVOIDED, MINIMISED AND RE-USED OR RECYCLED WHERE POSSIBLE AND OTHERWISE DISPOSED OF IN A RESPONSIBLE MANNER;
(V) THAT THE USE AND EXPLOITATION OF NON-RENEWABLE NATURAL RESOURCES IS RESPONSIBLE AND EQUITABLE, AND TAKES INTO ACCOUNT THE CONSEQUENCES OF THE DEPLETION OF THE RESOURCE;
(VI) THAT THE DEVELOPMENT, USE AND EXPLOITATION OF RENEWABLE RESOURCES AND THE ECOSYSTEMS OF WHICH THEY ARE PART DO NOT EXCEED THE LEVEL BEYOND WHICH THEIR INTEGRITY IS JEOPARDISED;
(VII) THAT A RISK-AVERSE AND CAUTIOUS APPROACH IS APPLIED, WHICH TAKES INTO ACCOUNT THE LIMITS OF CURRENT KNOWLEDGE ABOUT THE CONSEQUENCES OF DECISIONS AND ACTIONS; AND
(VIII) THAT NEGATIVE IMPACTS ON THE ENVIRONMENT AND ON PEOPLE'S ENVIRONMENTAL RIGHTS BE ANTICIPATED AND PREVENTED, AND WHERE THEY CANNOT BE ALTOGETHER PREVENTED, ARE MINIMISED AND REMEDIED.
(B) INTEGRATED ENVIRONMENTAL MANAGEMENT WAS APPLIED IN THIS STUDY, 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.
(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.
(D) EQUITABLE ACCESS TO ENVIRONMENTAL RESOURCES, BENEFITS AND SERVICES TO MEET BASIC HUMAN NEEDS AND ENSURE HUMAN WELL-BEING MUST BE PURSUED AND SPECIAL MEASURES MAY BE TAKEN TO ENSURE ACCESS THERETO BY CATEGORIES OF PERSONS DISADVANTAGED BY UNFAIR DISCRIMINATION.
(E) RESPONSIBILITY FOR THE ENVIRONMENTAL HEALTH AND SAFETY CONSEQUENCES OF A POLICY, PROGRAMME, PROJECT, PRODUCT, PROCESS, SERVICE OR ACTIVITY EXISTS THROUGHOUT ITS LIFE CYCLE.
(F) THE PARTICIPATION OF ALL INTERESTED AND AFFECTED PARTIES IN ENVIRONMENTAL GOVERNANCE WERE PROMOTED, AND ALL HAD THE OPPORTUNITY TO DEVELOP THE UNDERSTANDING, SKILLS AND CAPACITY NECESSARY FOR ACHIEVING EQUITABLE AND EFFECTIVE PARTICIPATION, AND PARTICIPATION BY VULNERABLE AND DISADVANTAGED PERSONS WERE ENSURED.
(G) DECISIONS TOOK INTO ACCOUNT THE INTERESTS, NEEDS AND VALUES OF ALL INTERESTED AND AFFECTED PARTIES, INCLUDING RECOGNISING ALL FORMS OF KNOWLEDGE, INCLUDING TRADITIONAL AND ORDINARY KNOWLEDGE.
(H) COMMUNITY WELLBEING AND EMPOWERMENT WERE PROMOTED THROUGH ENVIRONMENTAL EDUCATION, THE RAISING OF ENVIRONMENTAL AWARENESS, THE SHARING OF KNOWLEDGE AND EXPERIENCE AND OTHER APPROPRIATE MEANS.

(I) THE SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS OF ACTIVITIES, INCLUDING DISADVANTAGES AND BENEFITS, WERE CONSIDERED, ASSESSED AND EVALUATED, AND DECISIONS WERE APPROPRIATE IN THE LIGHT OF SUCH CONSIDERATION AND ASSESSMENT.
(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.
(K) DECISIONS WERE TAKEN IN AN OPEN AND TRANSPARENT MANNER AND ACCESS TO INFORMATION WERE PROVIDED IN ACCORDANCE WITH THE LAW.
(L) THERE MUST BE INTERGOVERNMENTAL CO-ORDINATION AND HARMONISATION OF POLICIES, LEGISLATION AND ACTIONS RELATING TO THE ENVIRONMENT.
(M) ACTUAL OR POTENTIAL CONFLICTS OF INTEREST BETWEEN ORGANS OF STATE SHOULD BE RESOLVED THROUGH CONFLICT RESOLUTION PROCEDURES.
(N) GLOBAL AND INTERNATIONAL RESPONSIBILITIES RELATING TO THE ENVIRONMENT MUST 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.
(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.
(Q) THE VITAL ROLE OF WOMEN AND YOUTH IN ENVIRONMENTAL MANAGEMENT AND DEVELOPMENT WERE RECOGNISED AND THEIR FULL PARTICIPATION THEREIN WHERE PROMOTED.
(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.

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)	GNR543, 544, 545 AND 546 – LISTED DEVELOPMENT ACTIVITIES REQUIRING ENVIRONMENTAL AUTHORISATION – THE PROPOSED DEVELOPMENT COMPRISES LISTED DEVELOPMENT ACTIVITIES UNDER LISTING NOTICES 1 AND 3. 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.	DEPARTMENT OF ENVIRONMENTAL AFFAIRS	2014
ENVIRONMENT CONSERVATION ACT 1989 (ACT NO. 73 OF 1989)	CONSERVATION OF THE ENVIRONMENT WHERE THE MAST IS PLANNED.	DEPARTMENT OF ENVIRONMENTAL AFFAIRS	1989
EIA REGULATIONS 2014	GN 983 ITEM 27: THE CLEARANCE OF AN AREA OF 1 HA OR MORE, BUT LESS THAN 20HA OF INDIGENOUS VEGETATION LISTED ACTIVITY ACCORDING TO DESTEA. MORE THAN 1 HA OF INDIGENOUS VEGETATION WILL BE REMOVED. ITEM 28: RESIDENTIAL, MIXED, RETAIL, COMMERCIAL, INDUSTRIAL OR INSTITUTIONAL DEVELOPMENTS WHERE SUCH LAND WAS USED FOR AGRICULTURE OR AFFORESTATION ON OR AFTER 01 APRIL 1998 AND WHERE SUCH DEVELOPMENT: (II) WILL OCCUR OUTSIDE AN URBAN AREA, WHERE THE TOTAL LAND TO BE DEVELOPED IS BIGGER THAN 1 HECTARE; EXCLUDING WHERE SUCH LAND HAS	DEPARTMENT OF ENVIRONMENTAL AFFAIRS	2014

	ALREADY BEEN DEVELOPED FOR RESIDENTIAL, MIXED, RETAIL, COMMERCIAL, INDUSTRIAL OR INSTITUTIONAL PURPOSES.		
NATIONAL WATER ACT (ACT 36 OF 1998)	THE PROPOSED CONSTRUCTION OF DAMS, STORAGE OF WATER, TREATMENT AND RELEASE OF WASTEWATER EFFLUENT, IRRIGATION, CROSSING AND INFILLING OF WETLANDS REQUIRES AUTHORISATION FROM THE COMPETENT AUTHORITY	DEPARTMENT OF WATER AFFAIRS	1998
CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT 43 OF 1983)	LISTED INVASIVE ALIEN PLANTS IN TERMS OF THIS ACT MUST BE REMOVED FROM THE DEVELOPMENT PROPERTY.	DEPARTMENT OF AGRICULTURE	1983
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.	NATIONAL DEPARTMENT OF ENVIRONMENTAL AFFAIRS	2004
NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)	LISTS DEVELOPMENT ACTIVITIES THAT REQUIRE AUTHORISATION FROM RELEVANT HERITAGE AUTHORITIES.	SAHRA	1999
REMOVAL OF RESTRICTIONS ACT 84 OF 1967	AN APPLICATION IS ALSO BEING SUBMITTED IN TERMS SECTION 2(1)(A) OF THE REMOVAL OF RESTRICTIONS ACT 84 OF 1967 FOR THE REMOVAL OF RESTRICTIVE TITLE CONDITIONS (A); (C); AND (E) ON PAGE 2 OF THE DEED OF TRANSFER NUMBER T029634/2000.		1967

MORE DETAILED DESCRIPTION OF APPLICABLE LEGISLATION:

NEMA AND ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS

THE PROPOSED DEVELOPMENT WILL POSSIBLY INVOLVE THE FOLLOWING LISTED ACTIVITIES AS STIPULATED IN THE EIA REGULATIONS OF 4 DECEMBER 2014:

AS PER GOVERNMENT NOTICE NUMBER R. 983 OF 2014, THE FOLLOWING LISTED ACTIVITIES ARE INCLUDED FOR THE PROPOSED DEVELOPMENT:

27. THE CLEARANCE OF AN AREA OF 1 HECTARE 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.

28: RESIDENTIAL, MIXED, RETAIL, COMMERCIAL, INDUSTRIAL OR INSTITUTIONAL DEVELOPMENTS WHERE SUCH LAND WAS USED FOR AGRICULTURE OR AFFORESTATION ON OR AFTER 01 APRIL 1998 AND WHERE SUCH DEVELOPMENT:
(II) WILL OCCUR OUTSIDE AN URBAN AREA, WHERE THE TOTAL LAND TO BE DEVELOPED IS BIGGER THAN 1 HECTARE; EXCLUDING WHERE SUCH LAND HAS ALREADY BEEN DEVELOPED FOR RESIDENTIAL, MIXED, RETAIL, COMMERCIAL, INDUSTRIAL OR INSTITUTIONAL PURPOSES.

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.

INTEGRATED ENVIRONMENTAL MANAGEMENT

INTEGRATED ENVIRONMENTAL MANAGEMENT (IEM) IS A PHILOSOPHY, WHICH PRESCRIBES A CODE OF PRACTICE FOR ENSURING THAT ENVIRONMENTAL CONSIDERATIONS ARE FULLY INTEGRATED INTO ALL STAGES OF THE DEVELOPMENT PROCESS. THIS PHILOSOPHY AIMS TO ACHIEVE A DESIRABLE BALANCE BETWEEN CONSERVATION AND DEVELOPMENT (DEPARTMENT OF ENVIRONMENTAL AFFAIRS, AND TOURISM (DEAT),1992). THE IEM GUIDELINES INTEND ENDEARING A PRO-ACTIVE APPROACH TO SOURCING, COLLATING AND PRESENTING INFORMATION AT A LEVEL THAT CAN BE INTERPRETED AT ALL LEVELS.

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 PURPOSE 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.

WATER SERVICES ACT (ACT 108 OF 1997)

NO PERSON MAY OBTAIN WATER FOR INDUSTRIAL USE FROM ANY SOURCE OTHER THAN A WATER SERVICES PROVIDER NOMINATED BY THE WATER SERVICES AUTHORITY. APPLICABLE TO DEVELOPMENTS WHERE THE WATER REQUIRED FOR THE PROJECT WILL BE OBTAINED FROM A SOURCE OTHER THAN FROM AN ESTABLISHED MUNICIPAL SUPPLY SYSTEM.

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. MR COBUS DREYER PREVIOUSLY FROM THE NATIONAL MUSEUM, HAS BEEN 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.

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.

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.

CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT 43 OF 1983)

THIS ACT PROVIDE FOR THE CONTROL OVER THE UTILIZATION OF THE NATURAL AGRICULTURAL RESOURCES OF THE REPUBLIC IN ORDER TO PROMOTE THE CONSERVATION OF THE SOIL, THE WATER SOURCES AND THE VEGETATION AND THE COMBATING OF WEEDS AND INVADER PLANTS. THE FOLLOWING IMPACTS OF DEVELOPMENTS ARE ALL SUBJECT TO THE CONTROL MEASURES PRESCRIBED BY THE MINISTER IN TERMS OF THE ACT.

- SOIL SURFACE EROSION AND DETERIORATION OF SOIL QUALITY AND PRODUCTIVITY;
- FLOODING POTENTIAL;
- SOIL POLLUTION;
- SUBSIDENCE, WATER LOGGING AND MASS MOVEMENTS SUCH AS LANDSLIDES AND ROCK FALLS;
- DEGRADATION, DESTRUCTION OR ELIMINATION OF ECOSYSTEMS;
- INTRODUCTION OF ELEMENTS THAT IS UNCHARACTERISTIC WITH THE AESTHETICS AND LANDSCAPE CHARACTER OF THE AREA.

WITH REGARD TO THE POTENTIAL FOR THE DEVELOPMENT TO INTRODUCE NEW SPECIES TO AN AREA, OR WHERE DEVELOPMENTS TAKE PLACE ON LAND WHERE WEEDS AND INVASIVE PLANTS OCCUR, REGULATIONS RELATING TO WEEDS AND INVASIVE PLANTS MAY BE APPLICABLE.
ALSO SEE THE REVISED TARIFFS FOR SERVICES RENDERED IN TERMS OF THE SUB DIVISION OF AGRICULTURAL LAND ACT, ACT NO 70 OF 1970 AND CONSERVATION OF AGRICULTURAL RESOURCES ACT, ACT NO. 43 OF 1983.

NATIONAL VELD AND FIRES ACT (ACT 101 OF 1998)

THIS ACT PROVIDES FOR THE CONTROL OF VELD FIRES. THE REGULATIONS IN TERMS OF THIS ACT SET CERTAIN CONDITIONS FOR THE OWNER OF A PROPERTY FOR EMERGENCY PREPAREDNESS FOR THE CONTROL OF VELD FIRES. IT ALSO DESCRIBES THE COMPULSORY MAKING OF FIREBREAKS TO CONTROL VELDT FIRES THAT ORIGINATES ON THE OWNER'S PROPERTY AS WELL AS ON ADJACENT PROPERTIES.

OTHER IMPORTANT LEGISLATION, FRAMEWORK PLANS, REGULATIONS

THIS INCLUDES THE FOLLOWING:

- SPATIAL PLANNING AND LAND USE MANAGEMENT ACT OF 2013;
- MMM URBAN OPEN SPACE POLICY AND FRAMEWORK PLAN;
- MMM SPATIAL DEVELOPMENT FRAMEWORK;
- MANUAL FOR TRAFFIC IMPACT STUDIES", NATIONAL DEPARTMENT OF TRANSPORT, (1995).
- SOUTH AFRICAN TRIP GENERATION MANUAL (2ND EDITION, 1995);
- THE GUIDELINES SET OUT BY THE NATIONAL DEPARTMENT OF HOUSING; GEOTECHNICAL SITE INVESTIGATIONS FOR HOUSING DEVELOPMENTS, PROJECT LINKED TO GREENFIELD SUBSIDY PROJECT DEVELOPMENTS, GENERIC SPECIFICATION GFSH-2, SEPTEMBER 2002, SECTION 5.2: PRELIMINARY GEOTECHNICAL SITE INVESTIGATIONS.
- 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);
- ROADS ORDINANCE, 1968 (ORDINANCE 4 OF 1968)
- 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;
- DEVELOPMENT FACILITATION ACT 67 OF 1995;
- BASIC CONDITIONS OF EMPLOYMENT ACT 75 OF 1997.
- 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.

THE ECOLOGICAL SPECIALIST STUDIES TO BE CONDUCTED FOR THE PROPOSED SITE WILL DETERMINE THE PRESENCE OF PROTECTED OR VULNERABLE SPECIES. IF PROTECTED AND/OR VULNERABLE SPECIES ARE INDEED LOCATED ON SITE, THESE SPECIES WILL BE MANAGED AS PART OF AN ECOLOGICAL FRAMEWORK FOR THE SITE, IN ORDER TO ENSURE THE VIABLE GENETIC DISTRIBUTION AND MIGRATION OF THE PROTECTED SPECIES FROM THE APPLICATION SITES TO CONNECTING OPEN SPACES AND RIPARIAN SYSTEMS.

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES	~~NO~~
If YES, what estimated quantity will be produced per month?		10m^3

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	~~NO~~
If YES, what estimated quantity will be produced per month?		

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

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.

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

BLOEMFONTEIN'S SOUTHERN LANDFILL SITE.

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

BLOEMFONTEIN'S SOUTHERN 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?	~~YES~~	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?	~~YES~~	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

IN ORDER TO JUSTIFY THE PROPOSED DEVELOPMENT, IT BECAME IMPORTANT TO INVESTIGATE THE AVAILABILITY OF CIVIL SERVICES AND TO THIS EFFECT, A SERVICES REPORT FROM THUSABATHO CONSULTING ENGINEERS CONSULTING IS ATTACHED AS APPENDIX "D" TO THIS REPORT.

ACCORDING TO THE REPORT THE NORTH-EASTERN WWTW HAS SUFFICIENT CAPACITY, BUT SEVERAL SECTIONS OF THE BULK PIPELINE DOWNSTREAM OF THE DEVELOPMENT HAVE INSUFFICIENT CAPACITY TO ACCOMMODATE THE WASTEWATER EFFLUENT FROM THE DEVELOPMENT. ACCORDING THE MMM THIS WILL HOWEVER BE ADDRESSED BY REDUCING THE VOLUME OF RAW WASTEWATER BYPASSING THE BLOEMSPRUIT WWTW TO THE NORTH-EASTERN WWTW.

SEE THE FINAL FEEDBACK FROM MMM ON THE SERVICES REPORT IN APPENDIX D.

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	~~YES~~	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?	~~YES~~	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	~~NO~~

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:

SEE THE SERVICES REPORT FROM THUSABATHO CONSULTING ENGINEERS IS ATTACHED AS APPENDIX "D" TO THIS REPORT.

IN TERMS OF THE SERVICES REPORT, THE SERVICES ARE DEEMED TO BE ADEQUATE TO SUSTAIN THE NEW DEVELOPMENT.

c) Emissions into the atmosphere

~~YES~~	NO
YES	NO

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?

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 ACTIVITIES WILL RESULT IN EMISSIONS IN THE FORM OF DUST AND FUEL. 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 HAVE INCLUDED IN THE ENVIRONMENTAL MANAGEMENT PLAN.

DUST: THE ONLY INCREASE IN DUST DURING THE OPERATIONAL PHASE WILL BE FROM THE INCREASE IN VEHICLE MOVEMENT ON THE ACCESS ROADS.

EMISSIONS: VEHICLE EMISSIONS WILL INCREASE DURING THE OPERATIONAL PHASE AS A RESULT OF INCREASED TRAFFIC TO THE DEVELOPMENT. THIS WILL HAVE A NEGATIVE IMPACT BUT WILL BE SHORT TERM AND LOW IN NATURE.

d) Waste permit

~~YES~~	NO

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

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

e) Generation of noise

YES	~~NO~~
YES	~~NO~~

Will the activity generate noise?

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

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. NOISE DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT WILL BE TYPICALLY THAT FOUND IN RESIDENTIAL NEIGHBORHOODS.

13. WATER USE

SEE THE SERVICES REPORT FROM THUSABATHO CONSULTING ENGINEERS IS ATTACHED AS APPENDIX "D" TO THIS REPORT.

ACCORDING TO THE REPORT THE EXISTING INFRASTRUCTURE DOES NOT HAVE SUFFICIENT CAPACITY TO ACCOMMODATE THE DEVELOPMENT. THERE IS SUFFICIENT CAPACITY IN THE EXISTING INFRASTRUCTURE TO ACCOMMODATE THE DEVELOPMENT IN TERMS OF NORMAL OPERATING PRESSURE. THERE ARE CURRENTLY NO MUNICIPAL FIRE HYDRANTS IN THIS DEVELOPMENTS AREA.

MMM RECOMMENDED THAT THE DEVELOPER MAKES ON-SITE PROVISION FOR THE DEVELOPMENTS WATER STORAGE AND MINIMUM FIRE REQUIREMENTS UNTIL THE MUNICIPAL NETWORK IS UPGRADED.

SEE THE FINAL FEEDBACK FROM MMM ON THE SERVICES REPORT IN APPENDIX D.

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?	~~YES~~	NO

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:

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. RESIDENTS WILL BE ASKED TO SWITCH LIGHTS OFF IF THEY ARE NOT BEING USED. STREETLIGHTS WILL WORK ON TIMERS OR LIGHT SENSITIVE SENSORS, WHICH WILL AUTOMATICALLY SWITCH OFF WHEN THE SUN RISES.

THE PROPOSED DEVELOPMENT WILL COMPLY WITH THE ENERGY RESTRICTIONS IMPOSED BY ESKOM AND SANS 204. IN ADDITION, THE DESIGNS AND ELECTRICAL WORK WILL 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~~ | NO

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)	WARD 16
Farm name and number	BLOEMSPRUIT SMALLHOLDINGS, DISTRICT BLOEMFONTEIN, FREE STATE PROVINCE
Portion number	PLOT 6
SG Code	F00300190000000600000

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:

HOLDINGS

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 | ~~NO~~

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

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

THE PROPOSED PROJECT SITE IS CHARACTERISED BY A RELATIVELY FLAT TOPOGRAPHY. FIELD OBSERVATIONS HAVE REVEALED THAT SLOPE ANGLES AT THE PROPOSED CONSTRUCTION SITE ARE LESS THAN 2°. BASED ON A REVIEW OF AVAILABLE INFORMATION (COUPLED WITH THE RESULTS OF THE SITE WALKOVER), NO INDICATION OF THE PRESENCE OF UNSTABLE NATURAL SLOPES IS ASSOCIATED WITH THE PROPOSED CONSTRUCTION SITE. HOWEVER, THE RELATIVELY FLAT TOPOGRAPHY MAY CAUSE DRAINAGE PROBLEMS AS IT IS LIKELY TO PROMOTE THE PONDING OF WATER IN THE PROJECT AREA.

ACCORDING TO THE ATTACHED GEOTECHNICAL STUDY ATTACHED IN APPENDIX D NO MAJOR SLOPE FAILURES HAVE BEEN RECORDED WITHIN THE PROJECT AREA ON A REGIONAL SCALE AND THEREFORE THE PROBABILITY OF ANY MASS MOVEMENT EVENTS (SUCH AS LANDSLIDES, MUDSLIDES, DEBRIS FLOWS, ROCK FALLS, ROCKSLIDES ETC.) OCCURRING AT THE PROPOSED CONSTRUCTION SITE IS VERY LOW. IN ADDITION, THE SIDEWALL STABILITY HAD REMAINED STABLE AT ALL THE TEST PIT LOCALITY SITES DURING THE DURATION OF THE FIELD INVESTIGATIONS AND HENCE, THE SITE GENERALLY OFFERS SIDEWALL STABILITY ACROSS THE SITE.

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): N/A

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): N/A

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)	~~YES~~	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	~~YES~~	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	~~YES~~	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	~~YES~~	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	~~YES~~	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	~~YES~~	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	~~YES~~	NO	YES	NO	YES	NO
An area sensitive to erosion	~~YES~~	NO	YES	NO	YES	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.

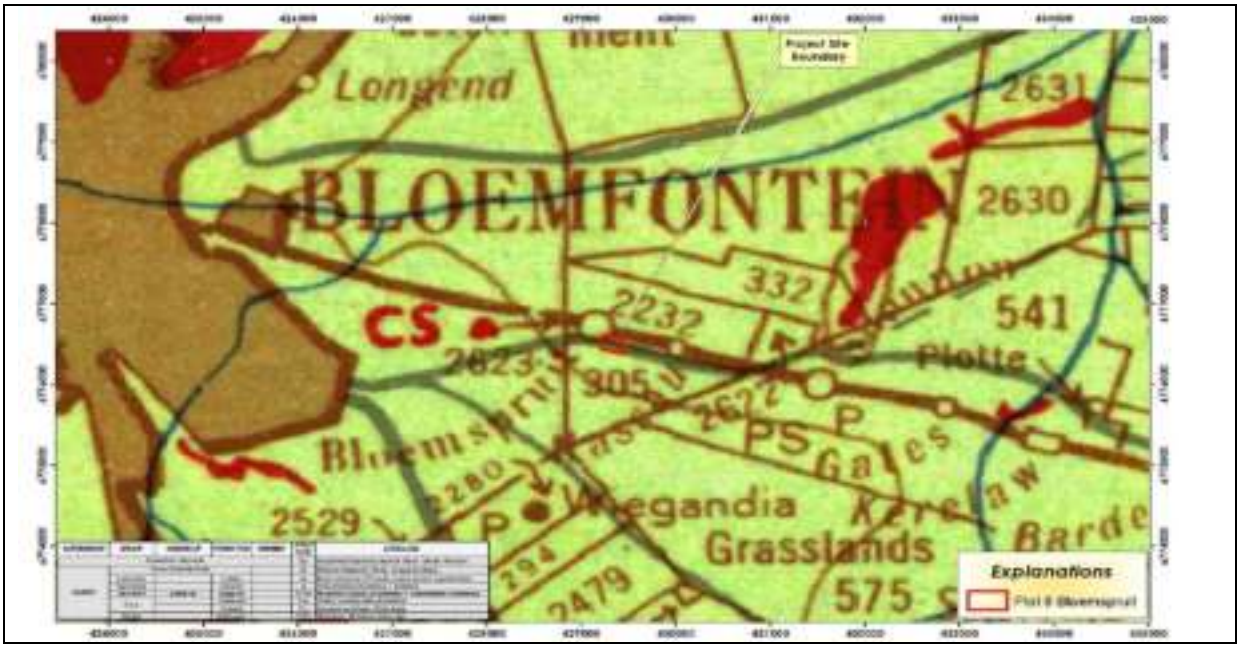
SEE THE GEOTECHNICAL STUDY ATTACHED IN APPENDIX D.

REGIONAL GEOLOGY

THE FOLLOWING DESCRIPTION OF THE REGIONAL AND SITE GEOLOGY OF THE AREA HAS BEEN INTERPRETED FROM BOTH THE SITE OBSERVATIONS AND A DESKTOP REVIEW OF THE PUBLISHED GEOLOGICAL MAP OF THE BLOEMFONTEIN AREA (SHEET 2926) AND WHICH COVERS THE PROPOSED CONSTRUCTION SITE. THE REGIONAL GEOLOGICAL MAP OF THE AREA IS SHOWN IN FIGURE 3 BELOW.

THE ROCKS ASSIGNED TO THE KAROO SUPERGROUP UNDERLIE MUCH OF THE PROJECT SITE AREA. REGIONALLY, THE KAROO SUPERGROUP IS DIVIDED INTO THE DWYKA, ECCA, BEAUFORT AND THE STOMBERG GROUPS. THE KAROO ROCKS ARE EXTENSIVELY INTRUDED BY POST DEPOSITIONAL DOLERITE (IN FORM OF SILLS, DYKES AND SHEETS).

FIGURE 3 – REGIONAL GEOLOGY OF THE PROPOSED SITE.



SITE GEOLOGY

THE ROCKS FOUND AT THE SITE ARE ASSIGNED TO THE ADELAIDE SUBGROUP (PA) OF THE BEAUFORT GROUP. ROCKS OF THE ADELAIDE SUBGROUP ARE ESSENTIALLY COMPRISED OF MUDROCKS (SHALE AND MUDSTONE) AND SUBORDINATE SANDSTONE.

THE ROCKS OF THE ADELAIDE SUBGROUP ARE CHARACTERISED BY GREENISH-GREY, MUD-RICH ROCKS (MUDSTONE AND SHALE) OCCURRING IN 1 TO 10 M LAYERS AND OFTEN INTERCALATED BY SUBORDINATE, SANDRICH LAYERS (GRIT AND SILTSTONE) THAT ARE 1 TO 2 M THICK.

DOLERITE INTRUSIONS (JD) IN THE FORM OF SILLS, SHEETS AND DYKES COVER THE UPPER PARTS OF THE PROJECT SITE. ON A REGIONAL SCALE, DOLERITE OCCURS AS A NETWORK OF DYKES, SILLS OR SHEETS INTRUDED INTO THE SEDIMENTARY STRATA ALONG THE BEDDING PLANES AND FRACTURES. LOCALLY, DOLERITE OCCURS MAINLY IN THE FORM OF SILLS AND INCLINED SHEETS INTRUDED CONCORDANTLY INTO THE HOST SEDIMENTS THAT MAY VARY IN THICKNESS FROM A FEW METERS TO OVER 200 M OR MORE. ON SURFACE EXPOSURE, DYKES ARE COMMONLY MAPPED AS BEING GENERALLY ONLY A FEW METERS WIDE (3 – 10 M WIDE) BUT EXTENDING FOR SEVERAL KILOMETRES (5 – 30 KM) LONG. WHEN INTERCEPTED IN TEST PITS, DOLERITE IS USUALLY OBSERVED IN FIVE DIFFERENT CATEGORIES, NAMELY; SOLID OR FRESH; FRACTURED; BOULDERS; GRAVELLY; GRANULAR (OR SUGARY) AND AS RESIDUAL DOLERITE SOIL.

BASED ON INFORMATION OBTAINED FROM THE DRILLING PROFILE, A TYPICAL SECTION DOWN-DIP MAY INCLUDE A TOPSOIL THAT IS POTENTIALLY COMPRISED OF COLLUVIUM (CLAYEY TO SILTY SANDS) INTERPRETED TO HAVE BEEN TRANSPORTED FROM ELSEWHERE, RESIDUAL SOILS (REWORKED AND NORMAL) AND A WEATHERED BEDROCK OF SANDSTONE AND MUDROCKS (SHALE AND SILTSTONE).

3.1 Site Geotechnical Assessment as per Attached Geotechnical Report

The major different engineering geological classifications that could potentially pose direct engineering-related problems and/or fatalities at the proposed site are reviewed and compared to the typical geotechnical constraints for development. Generally, the project site shows a strong affinity to the following site geotechnical conditions depicted in table below.

Plot 6 - Bloemspruit Residential Townhouse Development Project
Geotechnical Classification for Development

	Geotechnical Constraint	Site Condition	Severity Class
A	*Collapsible Soil*	*Moderate to low potential of collapsible soils anticipated*	*2 / 1*
B	Seepage	No water seepage was encountered on site	1 / 2
C	*Active soil*	*Low to moderate soil heave anticipated*	*2*
D	*Highly compressible soil*	*Low to moderate soil compressibility anticipated*	*2 / 1*
E	Erodibility of soil	Low risk	1
F	Difficulty of excavation to 1.5 m depth	Hard bedrock interception likely (at certain locations)	1 / 2
G	Undermined ground	Site is not undermined	1
H	Instability in areas of soluble rock	Site is not underlain by dolomite bedrock	1
I	Steep slopes	Slopes between 1° - 5°	1
J	Areas of unstable natural slopes	Low risk	1
K	Areas subject to seismic activity	Low risk	1
L	Areas subject to flooding	Site is not adjacent to drainage features	1

- Zone 1: Most favourable site and normal development can take place without considering precautionary measures.
- Zone 2: Intermediate site where development can proceed provided certain precautionary
- measures are adhered to.
- Zone 3: Least favourable site where conditions are such that individual investigations for a stand or structure (i.e. project site) are required and prescribed standard precautions be taken.
- Zone 4: Conditions are so poor that no development is recommended.

NHBRC has proposed a residential development classification based on the type and severity of the geotechnical problems and the likely impacts they would cause to the founding solutions required to solve the problems. The proposed site classification indicates that the proposed site falls within Zone 1 (albeit with consideration for Zone 2 in certain instances).

3.2 Site Classification

3.2.1 Collapsible and Compressible Soils

The transported soils exhibit typical characteristics associated with collapsibility and potential compressibility. Collapsible soils can withstand relatively large imposed stresses with small settlements at low insitu moisture content, but this can increase rapidly when saturation wetting occurs under loaded (house) conditions.

SOIL COLLAPSE CAN OCCUR IN ANY OPEN-TEXTURED, CLAYEY TO SILTY SANDY SOILS, WITH A HIGH VOID RATIO AND GENERALLY LOW IN-SITU DRY DENSITY. COLLAPSIBLE SOILS WILL EXPERIENCE SETTLEMENT UPON SATURATION FROM AN EXTERNAL SOURCE. THIS SETTLEMENT WILL TAKE PLACE RAPIDLY IF THE SOIL IS FREE DRAINING AND GRADUALLY IF IT IS NOT FREE DRAINING. DAMAGE CAUSED BY HEAVE / SHRINKAGE MOVEMENTS DIFFERS FROM THAT DUE TO COLLAPSE OR CONSOLIDATION SETTLEMENTS.

THE RESULTS OF THE LABORATORY TESTING INDICATE THAT GENERALLY, MODERATE TROUBLES ASSOCIATED WITH THE COLLUVIAL SOILS SHOULD BE EXPECTED WITH A MARGINALLY LOW COLLAPSE POTENTIAL RANGING BETWEEN 0.21 - 1.47 %. IN ADDITION, THE MOISTURE SATURATION OF THE COLLUVIAL SOILS RANGE BETWEEN 63.6 – 67.5 %, A SCENARIO THAT WOULD INFLUENCE THE ACTUAL MAXIMUM SWELL / HEAVE OF THE SOILS ON SITE AND THUS EXTRA CARE WILL BE REQUIRED PRIOR TO THE COMMENCEMENT OF THE CONSTRUCTION PHASE ON SITE.

THE NHBRC SITE CLASS FOR AREAS COVERED WITH COLLUVIUM IS C1 AND FOUNDING IN THESE SOIL MATERIALS WILL REQUIRE PRE-COMPACTION OF THE FOUNDATION EXCAVATIONS (WITH STIFFENED SOIL RAFTS AND / OR REINFORCED STRUCTURES).

3.2.2 POTENTIAL SETTLEMENT

THE POTENTIAL OF EXPERIENCING SOIL SETTLEMENT DUE TO THE CONSOLIDATION OF SOILS RESULTING FROM IMPOSED LOADS IN THE SOILS IS GENERALLY CONSIDERED LOW. HOWEVER, THE MATERIALS IN THE UPPER PARTS OF THE TRANSPORTED SOIL PROFILES ARE ASSOCIATED WITH A POTENTIAL SOIL SETTLEMENT THAT RESULT FROM IMPOSED STRUCTURAL LOADS.

HENCE, FOUNDING IN THESE SOIL MATERIALS WILL REQUIRE PRE-COMPACTION OF THE FOUNDATION EXCAVATIONS (WITH STIFFENED SOIL RAFTS AND / OR REINFORCED STRUCTURES). THE NHBRC SITE CLASS FOR AREAS COVERED WITH COLLUVIUM AT THIS SITE IS S.

3.2.3 ACTIVE CLAYS

HEAVING IS THE PROCESS THAT ACCOMPANIES THE WETTING OF ACTIVE SOILS ABOVE A DEEP WATER TABLE WITH A CHANGE IN VOLUME. THE ACTIVITY OF A SOIL (I.E. ITS SUSCEPTIBILITY TO VOLUME CHANGE UPON CHANGES IN THE MOISTURE CONTENT) IS THE RATIO OF THE PLASTICITY INDEX (PI) TO THE CLAY FRACTION. SUBSTANTIAL SHRINKAGE (THE REVERSE PROCESS) CAN OCCUR WHEN THE WATER TABLE IS LOWERED UNDER DROUGHT CONDITIONS, A SCENARIO THAT IS LIKELY TO PRODUCE DIFFERENTIAL SETTLEMENT IN BUILDINGS. BY FAR THE MOST COMMONLY USED METHOD FOR ASSESSING HEAVE POTENTIAL FOR LIGHT BUILDINGS REMAINS THAT DEVISED BY VAN DER MERWE (1964) AND REVISED BY SAVAGE (2007).

THE POTENTIAL VOLUME CHANGE (EXPANSIVENESS) OF THE SOILS FOUND AT THE PROPOSED CONSTRUCTION SITE IS CONSIDERED MEDIUM AND THUS, POTENTIAL HEAVING IS ANTICIPATED. THE NHBRC SITE CLASS FOR AREAS COVERED WITH RESIDUAL SOILS IS H2 – H3. BASHAN GEOTECHNICS RECOMMENDS THAT FOUNDING IN THIS SOIL LAYER SHOULD BE DONE WITH EXTRA CAUTION.

3.2.4 Erodibility Potential

No evidence of erosion (such as gulleys and erosional channels) was observed on site during the site investigations and Bashan Geotechnics is of the opinion that the materials found at the project site have a very low erodibility potential.

Bashan Geotechnics recommend that adequate precautions be considered during the construction phase as certain cohesive soils are likely to be generated and may generally cause problems associated with erodible / slippery conditions.

3.2.5 Undermined Ground

Although the proposed construction site is located within the vicinity of a mining operation, the side effects of undermining are not likely to cause negative geotechnical impacts associated with mining activities. Therefore, the proposed construction site is not shallowly undermined and as such, there is no risk of surface settlements that may be caused by mining activities.

3.2.6 Sinkhole Formation

Based on the data extracted from the published, regional geological map, the site is set upon an area that is not potentially underlain by dolomite bedrock at depth. In using both the National Home Builders Registration Council (NHBRC) and the Council for Geoscience (CGS) land classification guidelines, the proposed project site is classified as non-dolomite land.

3.2.7 Soil Permeability and Flooding

The majority of the soils found at the proposed site are predominantly fine grained, granular soils. The soils are generally associated with good permeability aspects and as such, it is highly anticipated that erosion of the exposed surface will be low.

Drainage of surface water would therefore need proper consideration. Shaping of the ground will be required to improve drainage and encourage run-off. In addition, deep stormwater and sewer lines will probably be required in many areas to ensure that the pipelines have an adequate fall.

3.2.8 Shallow Seepage

Shallow seepage was not observed at any of the test pit localities. It must be noted however, that the test pits were excavated during the dry, season when evaporation is generally high and rainfall often very low.

However, the fact that slightly moist to moist conditions were observed in the soils excavated at most of the test pit positions at the project site indicate that shallow seepage may be experienced during rainy days.

The residual soil materials are moderately to fairly porous making it easier for water infiltration to occur in these soil horizons as well. Hence, Bashan Geotechnics is of the opinion

THAT SPECIAL CARE WILL BE REQUIRED DURING THE CONSTRUCTION PHASE SO AS TO PROTECT THE WALLS FROM WATER INFILTRATION.

3.2.9 STEEP STABILITY

THE PROPOSED PROJECT SITE IS CHARACTERISED BY A RELATIVELY FLAT TOPOGRAPHY. FIELD OBSERVATIONS HAVE REVEALED THAT SLOPE ANGLES AT THE PROPOSED CONSTRUCTION SITE ARE LESS THAN 2°. BASED ON A REVIEW OF AVAILABLE INFORMATION (COUPLED WITH THE RESULTS OF THE SITE WALKOVER), NO INDICATION OF THE PRESENCE OF UNSTABLE NATURAL SLOPES IS ASSOCIATED WITH THE PROPOSED CONSTRUCTION SITE. HOWEVER, THE RELATIVELY FLAT TOPOGRAPHY MAY CAUSE DRAINAGE PROBLEMS AS IT IS LIKELY TO PROMOTE THE PONDING OF WATER IN THE PROJECT AREA.

NO MAJOR SLOPE FAILURES HAVE BEEN RECORDED WITHIN THE PROJECT AREA ON A REGIONAL SCALE AND THUS THE PROBABILITY OF ANY MASS MOVEMENT EVENTS (SUCH AS LANDSLIDES, MUDSLIDES, DEBRIS FLOWS, ROCK FALLS, ROCKSLIDES ETC.) OCCURRING AT THE PROPOSED CONSTRUCTION SITE IS VERY LOW. IN ADDITION, THE SIDEWALL STABILITY HAD REMAINED STABLE AT ALL THE TEST PIT LOCALITY SITES DURING THE DURATION OF THE FIELD INVESTIGATIONS AND HENCE, THE SITE GENERALLY OFFERS SIDEWALL STABILITY ACROSS THE SITE.

3.2.10 EXCAVATIBILITY

DIFFICULTY OF EXCAVATION OR EXCAVATIBILITY GENERALLY OCCURS WHERE SHALLOW BEDROCK AND/OR PEDOCRETES ARE ENCOUNTERED WITHIN THE TOP 1.50 M DEPTH OF THE SOIL PROFILE OR WHERE TLB REFUSAL OCCURS (WHICH-EVER IS FIRST).

THE SITE CATEGORY FALLS WITHIN THE SOFT TO INTERMEDIATE EXCAVATIONS. HOWEVER, HARD EXCAVATIONS INVOLVING AREAS UNDERLAIN BY MODERATELY WEATHERED BEDROCK (SANDSTONE) SHOULD BE EXPECTED AT DEPTHS GREATER THAN 3.00 M.

A COMBINED US OF A PICK AND / OR SHOVEL WITH TLB MECHANICAL EXCAVATION OPERATIONS WILL BE ADEQUATE TO EXCAVATE THROUGH THE SITE SOILS (ALBEIT UPTO A SUITABLE FOUNDING MATERIAL FOR SINGLE STOREY STRUCTURES). HOWEVER, DEEPER SERVICE TRENCHES WITHIN SHALLOW BEDROCK WILL REQUIRE HARD RIPPING WITH POWERFUL EXCAVATORS.

3.3 CONCLUSIONS OF GEOTECHNICAL REPORT

THE ATTACHED GEOTECHNICAL REPORT PRESENTS THE FINDINGS OF A SITE INVESTIGATION SURVEY CARRIED OUT AT THE PROPOSED CONSTRUCTION SITE OF A RESIDENTIAL DEVELOPMENT AT PLOT 6 - BLOEMSPRUIT IN BLOEMFONTEIN. THE FINAL GEOTECHNICAL ASSESSMENTS CONTAINED IN THIS REPORT ARE LARGELY BASED ON THE RESULTS OF TRIAL PITTING, DCP SOUNDINGS AND LABORATORY TESTING.

BASED ON THESE SET OF RESULTS, IT IS OUR OPINION THAT FUTURE SITE DEVELOPMENT AT THE PROPOSED CONSTRUCTION ZONE IS FEASIBLE (FROM AN ENGINEERING GEOLOGICAL / GEOTECHNICAL STANDPOINT). THE FINDINGS ARE BASED ON A SET OF RESULTS OBTAINED DURING A SITE VISIT TO THE PROPOSED CONSTRUCTION SITE (COUPLED WITH THE INTERPRETATION OF THE GENERATED LABORATORY AND OTHER INFORMATION).

- GENERALISED SOIL PROFILE: THE PROJECT SITE IS CHARACTERISED BY A VARIABLE SOIL PROFILE ACROSS THE SITE. HOWEVER, THE PROJECT SITE IS COVERED BY AT TWO (02) MAJOR SOIL HORIZONS, THE

TRANSPORTED SOIL MATERIALS (BETWEEN 0.00 – 1 180 MM) COMPRISED OF A TOPSOIL AND COLLUVIAL SOILS AND THE RESIDUAL SOILS COMPRISED OF A REWORKED RESIDUAL AND THE RESIDUAL SOIL HORIZONS (BETWEEN 1 180 – 2 900 MM).

- PROPOSED CONSTRUCTION METHODS: BASED ON THE FINDINGS OF THE CURRENT GEOTECHNICAL INVESTIGATIONS FOR A SIMPLE (SINGLE-STOREY) BUILDING, THE PROPOSED FOUNDING DEPTH AT THE PROJECT SITE SHOULD BE 1 000 MM (BELOW THE EXISTING GROUND SURFACE). THE RECOMMENDED NHBRC SITE CLASS FOR FOUNDATIONS PLACED JUST AT THE TOP OF THE RESIDUAL SOILS (AT A DEPTH OF 1 000 MM) SHOULD BE H2 - H3 / C1 (ACROSS THE SITE). A SAFE BEARING CAPACITY OF 120 KPA IS RECOMMENDED AND A COMBINATION OF EXTRA MODIFIED, NORMAL CONSTRUCTION (COUPLED WITH SPECIALISED FOUNDING SOLUTIONS) WILL BE REQUIRED TO BE IMPLEMENTED ON SITE.
- SOIL CORROSIVITY: THE SOIL MATERIALS FOUND ON SITE ARE CHARACTERISED AS BEING HIGHLY CORROSIVE (TOWARDS METAL, CONCRETE AND FIBRE). BASHAN GEOTECHNICS HAS ESTABLISHED THAT ALL THE NECESSARY PRECAUTIONS SHOULD BE ADOPTED FOR ALL CONCRETE TO BE PLACED WITHIN ANY OF THE SOILS (IN ACCORDANCE WITH SANS 1200G: CONCRETE) AS A PRECAUTIONARY MEASURE. IN ADDITION, ALL SUBSURFACE SERVICES (NON-CONCRETE) SHOULD PREFERABLY BE TREATED OR SLEEVED IN ORDER TO PREVENT POSSIBLE DAMAGE THAT MAY BE CAUSED BY CORROSION.
- CONSTRUCTION MATERIALS: IT IS HIGHLY RECOMMENDED THAT THAT FOUNDING SOLUTIONS SHOULD NOT SPAN ACROSS THE INTERPHASE BETWEEN THE TRANSPORTED SOILS AND THE RESIDUAL SOILS. MODERATE COMPACTION OF THE BASE PRIOR TO THE CASTING OF THE FOUNDATIONS IS HIGHLY RECOMMENDED. IN ADDITION, ALL SOIL MATERIALS REQUIRED FOR USE AS CONSTRUCTION MATERIALS WILL HAVE TO BE SOURCED FROM COMMERCIAL RESOURCES (SUCH AS BORROW PITS). IN ADDITION, IT IS HIGHLY ANTICIPATED THAT WHEN FOUNDED WITHIN THE RESIDUAL SOILS, FOUNDATION SETTLEMENT IN THESE AREAS IS NOT EXPECTED TO EXCEED 5 MM. HOWEVER, MODERATE COMPACTION OF THE BASE PRIOR TO THE CASTING OF THE FOUNDATIONS IS HIGHLY RECOMMENDED. BASHAN GEOTECHNICS STRONGLY RECOMMENDS THE REMOVAL OF THE UPPER COHESIONLESS, UN-ENGINEERED, TOPSOIL PRIOR TO THE COMMENCEMENT OF THE CONSTRUCTION STAGE.

BASHAN GEOTECHNICS WISHES TO ELABORATE FURTHER THAT THIS INVESTIGATION WAS THOROUGH (AT THE REQUIRED LEVEL AND IN LINE WITH THE CLIENT'S OBJECTIVES). WHILST EVERY EFFORT HAS BEEN MADE DURING THE FIELDWORK PHASE OF THIS INVESTIGATION TO IDENTIFY THE VARIOUS SOIL HORIZONS (INCLUDING THE ASSOCIATED POTENTIAL PROBLEMS AND THEIR LIKELY DISTRIBUTION), IT IS HIGHLY IMPOSSIBLE TO GUARANTEE THAT ISOLATED ZONES OF POOR MATERIAL COULD HAVE BEEN MISSED.

IN ADDITION, IT SHOULD BE POINTED OUT THAT THE GROUND CONDITIONS DESCRIBED IN THIS REPORT REFER SPECIFICALLY TO THOSE CONDITIONS ENCOUNTERED IN THE TEST PIT EXCAVATED AT THE SITE. IT IS HIGHLY LIKELY THAT CERTAIN CONDITIONS THAT MAY BE AT VARIANCE WITH THOSE DISCUSSED ABOVE CAN BE ENCOUNTED AT THE SITE IN THE FUTURE.

IN VIEW OF THE INHERENT VARIABILITY OF THE NATURAL MATERIALS, A COMPETENT PERSON (SUCH AS THE ENGINEERING GEOLOGIST OR GEOTECHNICAL ENGINEER) SHOULD INSPECT ALL FOUNDATION EXCAVATIONS AT THE TIME OF THE CONSTRUCTION PHASE IN ORDER TO ENSURE THAT THE MATERIALS ARE ADEQUATE FOR THE PROPOSED STRUCTURES AND THAT THEY ARE IN ACCORDANCE WITH THE RECOMMENDATIONS STATED IN THIS REPORT.

- THE PROJECT SITE IS GENERALLY LOCATED IN AN AREA WHERE NO SERIOUS OR ADVERSE GEOLOGICAL HAZARDS ARE EXPECTED TO OCCUR. HOWEVER, THE PROPOSED CONSTRUCTION SITE HAS CONDITIONS THAT

REQUIRES CARE WHEN CORRELATING THE GENERAL AND / OR SITE-SPECIFIC SUBSOIL GEOTECHNICAL CONDITIONS AT THE PROJECT SITE.

- THEY STRONGLY RECOMMEND THAT CONFIRMATORY QUALITY ASSURANCE TESTING BE CARRIED OUT TO CONFIRM THE MATERIAL CLASSIFICATION DEVISED DURING THE CURRENT GEOTECHNICAL INVESTIGATION (AS WARRANTED). IT IMPORTANT THAT A COMPETENT PERSON (SUCH AS AN ENGINEERING GEOLOGIST OR GEOTECHNICAL ENGINEER) SHOULD BE ABLE TO CARRY OUT PERIODICAL INSPECTIONS OF THE EARTHWORKS AND OPEN FOUNDATIONS (ON SITE).
- THE PLACEMENT OF THE IRRIGATION SYSTEM FOR THE GARDENS CAN RESULT IN THE ADDITION OF SIGNIFICANT VOLUMES OF WATER ADJACENT TO AND ON THE CONCRETE AND BLOCK APRONS SURROUNDING THE STRUCTURES, LEADING TO DIFFERENTIAL MOVEMENT AND CRACKING.
- TO MITIGATE AGAINST POTENTIAL GEOTECHNICAL CHALLENGES ASSOCIATED WITH POTENTIAL SHALLOW WATER SEEPAGE, BASHAN GEOTECHNICS RECOMMENDS THE USE OF A DAMP PROOF (OR ANY OTHER MITIGATING MATERIAL) DURING THE CONSTRUCTION STAGE.
- SUBSOIL DRAINS WILL HAVE TO BE INSTALLED TO DRAW DOWN THE WATER TABLE IN LOCATIONS WHERE SUFFICIENT ACCUMULATIONS OF WATER CONSTANTLY RECUR AND IF IMPLEMENTED, IT IS RECOMMENDED THAT THESE BE DESIGNED ACCORDING TO THE FILTER CRITERIA OF THE IN-SITU SOILS TO PREVENT PIPING.
- SUBSURFACE SERVICES SHOULD HAVE BEEN LOCATED SUFFICIENTLY FAR (AT LEAST 1.50 M) AWAY FROM THE STRUCTURES FROM BUILDINGS SO THAT THAT THEIR BACKFILLED TRENCHES DO NOT INTERFERE WITH THE FOUNDATIONS FOR THE MAIN BUILDING INFRASTRUCTURE AND OTHER STRUCTURES.

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

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.

NO WETLAND OCCURS ON OR NEAR THE PROPOSED SITE.

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:

THE PROPOSED DEVELOPMENT WILL HAVE NO IMPACT ON THE RAILWAY LINE AND MAJOR ROAD SITUATED WITHIN 500M OF THE PROPOSED SITE.

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:

THE PROPOSED DEVELOPMENT WILL HAVE A POSITIVE IMPACT ON THE FILLING STATION SITUATED ABOUT 300M FROM THE PROPOSED DEVELOPMENT. THE DEVELOPMENT WILL LEAD TO MORE PEOPLE RESIDING IN THE AREA THAT POSSIBLY WILL MAKE USE OF THE FILLING STATION TO FILL UP THEIR VEHICLES.

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

Critical Biodiversity Area (as per provincial conservation plan)	~~YES~~	NO
Core area of a protected area?	~~YES~~	NO
Buffer area of a protected area?	~~YES~~	NO
Planned expansion area of an existing protected area?	~~YES~~	NO
Existing offset area associated with a previous Environmental Authorisation?	~~YES~~	NO
Buffer area of the SKA?	~~YES~~	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:	~~YES~~	NO
	Uncertain	
DR LOYD ROSSOUW WAS APPOINTED. SEE APPENDIX 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 DR LOYD ROSSOUW THE FOLLOWING:

SITE: PLOT 6 BLOEMSPRUIT, BLOEMFONTEIN
DISTRICT: MANGAUNG METROPOLITAN MUNICIPALITY
MAP REF.: 2926AB MASELSPOORT
SITE COORDINATES: 29° 8'17.35"S 26°16'24.04"E

PROPOSED DEVELOPMENT CALLS FOR RESIDENTIAL EXPANSION ON PLOT 6, BLOEMSPRUIT IN BLOEMFONTEIN (FIG. 1 OF THE ATTACHED HIA). THE SITE IS LOCATED IN THABA NCHU ROAD ABOUT 5 KM SOUTHEAST OF THE BLOEMFONTEIN CBD (FIG. 2 OF THE ATTACHED HIA). THE BLOEMSPRUIT RESIDENTIAL SMALLHOLDINGS WERE ESTABLISHED MORE THAN SIXTY YEARS AGO (FIG. 3 OF THE ATTACHED HIA), BUT MANY OF THE ORIGINAL RESIDENTIAL STRUCTURES HAVE BEEN REPLACED BY COMMERCIAL DEVELOPMENTS AND INDUSTRIAL PROPERTIES (FIG. 4 OF THE ATTACHED HIA). THE AFFECTED AREA IS COVERS 4 HA OF SEVERELY DEGRADED LAND (FIG. 5 OF THE ATTACHED HIA). BUILDING STRUCTURES POTENTIALLY OLDER THAN 60 YEARS OF AGE IS PRESENT AT THE SITE, BUT ARE NOT CONSIDERED HISTORICALLY SIGNIFICANT BY THE AUTHOR (FIG 6. OF THE ATTACHED HIA – GPS COORDINATES 29° 8'18.42"S 26°16'27.00"E).

EXISTING ROADS ALREADY PROVIDE ACCESS TO THE SITE. IT IS THE OPINION OF THIS AUTHOR THAT THE BUILDING STRUCTURES ARE ASSIGNED A SITE RATING OF GENERALLY PROTECTED B (GP.B, RECORDING BEFORE DESTRUCTION). THE REST OF THE STUDY AREA IS ASSIGNED A SITE RATING OF GENERALLY PROTECTED C. IT IS ADVISED THAT FOR THE BUILDING STRUCTURES, THE DEVELOPER FOLLOW PROPER PROCEDURES AS STIPULATED IN SECTION 34(1) OF THE NATIONAL HERITAGE RESOURCES ACT 25 OF 1999 ["NO PERSON MAY ALTER OR DEMOLISH ANY STRUCTURE OR PART OF A STRUCTURE WHICH IS OLDER THAN 60 YEARS WITHOUT A PERMIT ISSUED BY THE RELEVANT PROVINCIAL HERITAGE RESOURCES AUTHORITY"], BY APPLYING FOR A DESTRUCTION PERMIT FROM THE FREE STATE HERITAGE RESOURCES AUTHORITY (HERITAGEFREESTATE.CO.ZA); AND THAT THE LAYOUT OF THE BUILDING STRUCTURES ARE PROPERLY MAPPED AND PHOTOGRAPHED BEFORE DESTRUCTION TAKES PLACE.

THE PROPOSED DEVELOPMENT WILL TAKE PLACE ON LAND FORMERLY ALTERED BY MODERN INDUSTRIAL / COMMERCIAL ACTIVITIES. POTENTIAL ARCHAEOLOGICAL IMPACT AT EACH OF THE PROPOSED SITE IS CONSIDERED TO BE NON-EXISTENT.

UNDERLYING GEOLOGY AT THE SITE CONSISTS OF POTENTIALLY FOSSIL-BEARING KAROO SUPERGROUP STRATA (BEAUFORT GROUP, ADELAIDE SUBGROUP) WHILE SUPERFICIAL SEDIMENTS ARE MADE UP OF RESIDUAL SOILS OF VARYING DEPTH THAT ARE NOT CONSIDERED TO BE PALAEONTOLOGICALLY SIGNIFICANT IN THIS CASE. THE LIKELIHOOD OF PALAEONTOLOGICAL IMPACT ON BEDROCK SEDIMENTS UNDERNEATH THE DEGRADED OVERBURDEN IS CONSIDERED TO BE EXTREMELY LOW GIVEN THE LATTER'S OVERALL DEPTH AND THE LOW TOPOGRAPHY TERRAIN.

IT IS ADVISED THAT THE PROPOSED DEVELOPMENT IS EXEMPT FROM FURTHER HERITAGE IMPACT ASSESSMENTS PENDING OUTCOME OF LISTED RECOMMENDATIONS.

Will any building or structure older than 60 years be affected in any way?	YES	~~NO~~

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	~~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.

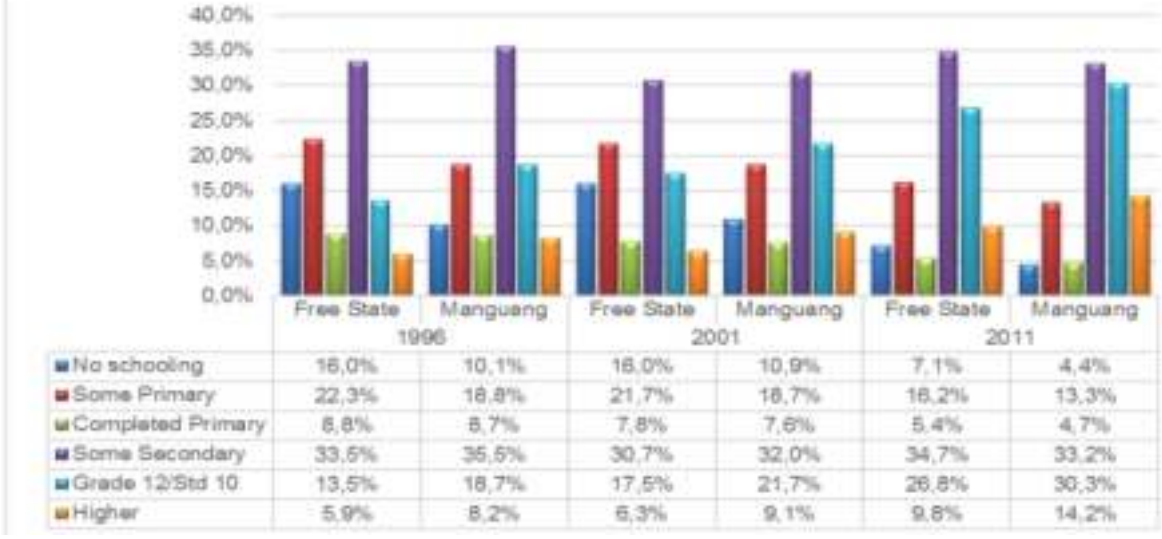
IN AN AREA SUCH AS MANGAUNG, WITH ITS RELATIVELY HIGH LEVELS OF UNEMPLOYMENT AND POVERTY, IT CAN BE EXPECTED THAT THE SMME SECTOR PLAYS AN EVEN MORE IMPORTANT ROLE IN JOB CREATION AND POVERTY ALLEVIATION. THE INFORMAL ECONOMY MAKES AN IMPORTANT CONTRIBUTION TO THE ECONOMIC AND SOCIAL LIFE OF MANGAUNG. 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:



	1996		2001		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	6,8%	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?	Unknown at this stage	
What is the expected yearly income that will be generated by or as a result of the activity?	Unknown at this stage	
Will the activity contribute to service infrastructure?	YES	~~NO~~
Is the activity a public amenity?	YES	~~NO~~
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown at this stage	
What is the expected value of the employment opportunities during the development and construction phase?	Unknown at this stage	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown at this stage	
How many permanent new employment opportunities will be created during the operational phase of the activity?	Unknown at this stage	
What is the expected current value of the employment opportunities during the first 10 years?	Unknown at this stage	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown at this stage	

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 AREA FOR THE PROPOSED SITE WAS PREVIOUSLY USED FOR GRAZING AND HEAVILY DISTURBED. A PORTION WAS ALSO USE BY SAND CITY.

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)	70%	THE PROPOSED SITE IS SITUATED WITHIN THE URBAN EDGE OF BLOEMFONTEIN ON A SMALLHOLDING THAT WAS PREVIOUSLY USED FOR FARMING ACTIVITIES. THE SITE IS CURRENTLY IN A DILAPIDATED STATE WITH LOTS OF LITTER AND BUILDING RUBBLE THAT CAN BE FOUND THEREON. THE HOUSE IS ALSO IN A STATE OF DISREPAIR.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	30%	BUILDINGS; ROADS ETC AS WELL AS THE AREA CLEARED OF VEGETATION THAT IS BEING USED BY SAND CITY.

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~~	~~Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)~~			~~Estuary~~		~~Coastline~~	
	~~Endangered~~							
	~~Vulnerable~~							
	Least Threatened	~~YES~~	NO	~~UNSURE~~	~~YES~~	NO	~~YES~~	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 IS HIGHVELD GRASSLAND. NO AQUATIC SYSTEMS ARE PRESENT ON OR NEAR THE PROPOSED SITE. 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	10 FEBRUARY 2021	
Site notice position	**Latitude**	**Longitude**
	29 08 14.67 S	26 16 28.50 E
Date placed	10 FEBRUARY 2021	

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.

FIGURE 4 – MAP SHOWING THE PUBLIC PARTICIPATION CONDUCTED WITHIN THE 400M RADIUS (RED CIRCLE) FROM CENTRE OF THE PROPOSED SITE.

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 KGANAKGA	WARD COUNCILLOR	083 886 9494
SEE LIST UNDER SECTION 3 BELOW.		

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
DESTEA • NONE AT THIS STAGE MMM COUNCILLORS - KGANAKGA • NONE AT THIS STAGE MMM – WATER AND SANITATION SECTION	
• THE EXISTING INFRASTRUCTURE DOES NOT HAVE SUFFICIENT CAPACITY TO ACCOMMODATE THE DEVELOPMENT. THERE IS SUFFICIENT CAPACITY IN THE EXISTING INFRASTRUCTURE TO ACCOMMODATE THE DEVELOPMENT IN TERMS OF NORMAL OPERATING PRESSURE. THERE ARE CURRENTLY NO MUNICIPAL FIRE HYDRANTS IN THIS DEVELOPMENTS AREA.	• AS PER ATTACHED SERVICES REPORT IN APPENDIX D.
• IT IS RECOMMENDED THAT THE DEVELOPER MAKES ON-SITE PROVISION FOR THE DEVELOPMENTS WATER STORAGE AND MINIMUM FIRE REQUIREMENTS UNTIL THE MUNICIPAL NETWORK IS UPGRADED.	• THIS WILL BE MADE A CONDITION IN THE ENVIRONMENTAL AUTHORISATION IF ISSUED BY DESTEA.
• THE NORTH-EASTERN WWTW HAS SUFFICIENT CAPACITY, BUT SEVERAL SECTIONS OF THE BULK PIPELINE DOWNSTREAM OF THE DEVELOPMENT HAVE INSUFFICIENT CAPACITY TO ACCOMMODATE THE WASTEWATER EFFLUENT FROM THE DEVELOPMENT.	• AS PER ATTACHED SERVICES REPORT IN APPENDIX D.
• ACCORDING THE MMM THIS WILL HOWEVER BE ADDRESSED BY REDUCING THE VOLUME OF	• NONE REQUIRED.

RAW WASTEWATER BYPASSING THE BLOEMSPRUIT WWTW TO THE NORTH EASTERN WWTW. MMM - NELSON MOFOKENG; BILLY BARNES; GEORGE MUSUABI; JEFF LETSIE; SONNET PIECHACZEK • NONE AT THIS STAGE DEPARTMENT OF POLICE, ROADS AND TRANSPORT • NONE AT THIS STAGE DESTEA – DR NACELLE COLLINS • NONE AT THIS STAGE MANGAUNG METRO MUNICIPALITY – PLANNING & ENVIRONMENTAL DIRECTORATE • NONE AT THIS STAGE CENTLEC • NONE AT THIS STAGE DEPARTMENT OF AGRICULTURE – JACK MORTON • NONE AT THIS STAGE DEPARTMENT OF HEALTH AND AIR POLLUTION MMM – JACO LAMPRECHT • NONE AT THIS STAGE DEPARTMENT OF RURAL DEVELOPMENT • NONE AT THIS STAGE SAHRA • NONE AT THIS STAGE DEPARTMENT OF HEALTH • NONE AT THIS STAGE	

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@DESTEA.GOV.ZA	PRIVATE BAG X20801 BLOEMFONTEIN 9300
DEPARTMENT OF AGRICULTURE	NOSISA NDUMO	0827107803	-	nosisa@fs.agric.za	-
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	MPOLOKENG.RAMONGALO@MANGAUNG.CO.ZA	P O BOX 3704 BLOEMFONTEIN 9300
MANGAUNG METRO MUNICIPALITY – HEALTH SECTION AND AIR QUALITY	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 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 DEVELOPMENT ON PLOT 6, BLOEMSPRUIT, BFN

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.	N/A	N/A	N/A
EROSION ON SITE AND DOWNSTREAM THERE WILL BE NO IMPACTS THAT WILL RESULT IN EROSION ON SITE AND DOWNSTREAM DURING THE PLANNING PHASE.	N/A	N/A	N/A
SERVICE INFRASTRUCTURE AND SERVICE PROVISION. NUMBER OF UNITS AND ABILITY OF LOCAL BULK INFRASTRUCTURE TO SUPPLY DEMAND.	N/A	N/A	COMPILE CIVIL SERVICES AND ELECTRICAL REPORTS.
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 IMPACTS 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 IN TERMS OF PROVIDING RESIDENTIAL AND BUSINESS DEVELOPMENT WITHIN THE AREA EARMARKED BY MMM IN THEIR SPATIAL DEVELOPMENT FRAMEWORK. THE RESULTANT DEVELOPMENT 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 DILAPIDATED STATE. LARGE AMOUNTS BUILDING AND OTHER RUBBLE CAN BE FOUND ON THE PROPERTY. 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. IT MUST ALSO BE SAID THAT THE EXISTING VEGETATION OF THE AREA IS HIGHLY INVADED BY ALIEN SPECIES/WEEDS.

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 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.

- THE COMPILATION OF AN ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR).
- IT IS ADVISED BY THE HIA THAT FOR THE BUILDING STRUCTURES, THE DEVELOPER FOLLOW PROPER PROCEDURES AS STIPULATED IN SECTION 34(1) OF THE NATIONAL HERITAGE RESOURCES ACT 25 OF 1999 ["NO PERSON MAY ALTER OR DEMOLISH ANY STRUCTURE OR PART OF A STRUCTURE WHICH IS OLDER THAN 60 YEARS WITHOUT A PERMIT ISSUED BY THE RELEVANT PROVINCIAL HERITAGE RESOURCES AUTHORITY"], BY APPLYING FOR A DESTRUCTION PERMIT FROM THE FREE STATE HERITAGE RESOURCES AUTHORITY (HERITAGEFREESTATE.CO.ZA); AND THAT THE LAYOUT OF THE BUILDING STRUCTURES ARE PROPERLY MAPPED AND PHOTOGRAPHED BEFORE DESTRUCTION TAKES PLACE.
- 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.
- 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.
- 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 STUDY MUST BE CONDUCTED TO DETERMINE THE SUB-SURFACE FEATURES, TO IDENTIFY THE SOIL AND ROCK CONDITIONS.
- A CIVIL SERVICES REPORT MUST BE CONDUCTED.
- A FIRST PHASE HERITAGE AND PALEONTOLOGICAL IMPACT ASSESSMENT MUST BE CONDUCTED.
- OBTAIN ALL THE REQUIRED PERMITS BEFORE TAKING DOWN BUILDINGS OLDER THAN 60 YEARS. STRUCTURES OLDER THAN 60 YEARS ARE PROTECTED BY THE NEW NATIONAL RESOURCES ACT OF 1999. ANY CHANGES TO SUCH BUILDINGS ARE SUBJECT TO PERMISSION FROM LOCAL HERITAGE BODIES.
- 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.
- 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 AND EMP.
- 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 AND EMP 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 ENDEAVOUR 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, AGRICULTURE, DWS ETC – PUBLIC PARTICIPATION PROCESS.
- THE ENVIRONMENTAL AUTHORISATION MUST HAVE BEEN ISSUED BY DESTEA AND THE APPEAL PERIOD MUST HAVE BEEN COMPLETED SUCCESSFULLY.
- THE DEVELOPMENT MUST BE DESIGNED IN AN ENERGY EFFICIENT MANNER, IN TERMS OF ITS 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

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

- LAND CLEARING;
- CONSTRUCTION OF ACCESS ROADS, BUILDINGS ETC;
- ESTABLISHMENT OF STOCKPILING AND SPOIL AREAS;
- CHEMICAL CONTAMINATION OF THE SOIL BY CONSTRUCTION VEHICLES AND MACHINERY;
- OPERATION OF TEMPORARY CONSTRUCTION CAMPS AND STORAGE OF MATERIALS REQUIRED FOR CONSTRUCTION.

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

- LAND CLEARING;
- CONSTRUCTION OF ACCESS ROADS;
- 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 CONSTRUCTION ACTIVITIES AND MACHINERY ETC. ON THE PROPOSED SITE.

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 DEVELOPMENT 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 ON 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. 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.
- 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.
- INJURY OR EVEN LOSS OF FAUNA IN THE AREA 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 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 & HIV-AIDS 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.

SOCIO ECONOMIC

- CONSTRUCTING THE PROPOSED DEVELOPMENT WILL RESULT IN DIRECT JOBS BEING CREATED FOR THE CONSTRUCTION OF THE VARIOUS RESIDENTIAL AND BUSINESS UNITS. 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 AND EMP 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 AND EMP) 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 LARGE 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 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.
- 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 AND BUSINESS AREA.
- CONSTRUCTION SITE HYGIENE WILL NOT BE A FACTOR AS THERE WILL BE NO STAFF TO OVERNIGHT 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 ANY AGRICULTURAL PURPOSES.
- ADDITIONAL RESIDENTIAL AND BUSINESS ERVEN AND UNITS WILL NOT BE PROVIDED. THE PROPOSED SITE THAT IS SITUATED WITHIN THE EARMARKED AREA FOR FUTURE DEVELOPMENT WILL NOT GIVE EFFECT TO MANGAUNG METRO MUNICIPALITY'S SDF.

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 RESIDENTIAL AND BUSINESS 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.

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.

IMPACT CLASSIFICATION - CONSTRUCTION PHASE OF DEVELOPMENT ON PLOT 6 BLOEMSPRUIT

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.
- 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 2M 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 AS WELL AS THE SITE TO BE SUBDIVIDED.
- 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 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).
- THE CLEARED VEGETATION SHOULD NOT BE BURNED ALONG THE DIFFERENT CONSTRUCTION AREAS, BUT TAKEN TO THE NEAREST AVAILABLE MUNICIPAL DISPOSAL SITE OR MADE AVAILABLE FOR USE IN A CONTROLLED MANNER.

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.
- ACTIVITIES THAT MAY DISRUPT NEIGHBOURS (E.G. DELIVERY TRUCKS, EXCESSIVELY NOISY ACTIVITIES ETC.) MUST BE PRECEDED BY NOTICE BEING GIVEN TO THE AFFECTED NEIGHBOURS AT LEAST 24 HOURS IN ADVANCE.
- 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 SOLID 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.
- 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.
- 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.								
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:

- THE DEVELOPER MUST MAKE ONSITE PROVISION FOR THE DEVELOPMENTS WATER STORAGE AND MINIMUM FIRE REQUIREMENTS UNTIL THE MUNICIPAL NETWORK IS UPGRADED (AS PER MMM).
- 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.
- 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.
- 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 ATTACHED GEOTECHNICAL REPORT 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	2	4	3	4	36	MODERATE	MODERATE	POSITIVE

SERVICES REQUIRED FROM INDUSTRIES RELATED TO THE CONSTRUCTION SECTOR.								
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
LOSS OF AVAILABLE AGRICULTURAL LAND (I.E. GRAZING).	5	2	1	2	16	LOW	LOW	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
- INDIVIDUALS PRESENT ON CONSTRUCTION SITE MUST COMPLY WITH ALL SAFETY MEASURES AS LAID OUT IN THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT NO. 85 OF 1993) (OHSA).
- 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	5	55	LOW	HIGH	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 M 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).
- IT IS ADVISED THAT FOR THE BUILDING STRUCTURES, THE DEVELOPER FOLLOW PROPER PROCEDURES AS STIPULATED IN SECTION 34(1) OF THE NATIONAL HERITAGE RESOURCES ACT 25 OF 1999 ["NO PERSON MAY ALTER OR DEMOLISH ANY STRUCTURE OR PART OF A STRUCTURE WHICH IS OLDER THAN 60 YEARS WITHOUT A PERMIT ISSUED BY THE RELEVANT PROVINCIAL HERITAGE RESOURCES AUTHORITY"], BY APPLYING FOR A DESTRUCTION PERMIT FROM THE FREE STATE HERITAGE RESOURCES AUTHORITY (HERITAGEFREESTATE.CO.ZA); AND THAT THE LAYOUT OF THE BUILDING STRUCTURES ARE PROPERLY MAPPED AND PHOTOGRAPHED BEFORE DESTRUCTION TAKES PLACE.

ENVIRONMENTAL AWARENESS:

INCREASING ENVIRONMENTAL AWARENESS BY EDUCATING COMMUNITY AND CONTRACTORS ON THE ENVIRONMENTAL ASPECTS OF THE PROPOSED SITE AS IDENTIFIED WITHIN THE BAR	2	5	2	5	45	MODERATE	MODERATE	POSITIVE

AND EMP.								
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 DIRECT IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT WILL NOT OCCUR:

- THE POSSIBILITY OF SOIL AND GROUND WATER POLLUTION BY ACCIDENTAL SPILLS.
- ADDED VISUAL INTRUSION & LIGHT POLLUTION.
- NOISE POLLUTION.
- ATMOSPHERE POLLUTION AND ODOURS.
- REMOVAL OF FLORA AND DISTURBANCE OF FAUNA.
- CONSTRUCTION SITE HYGIENE WILL NOT BE A FACTOR AS THERE WILL BE NO STAFF ON THE SITE.
- THE SAFETY AND SECURITY OF THE STAFF AND THE SITE WILL NOT BE A PROBLEM.
- NO JOBS CREATION. THUS, THERE WILL BE A LOSS OF INCOME IN THE LOCAL ECONOMY.

Indirect impacts:

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

- NO ADDED RESIDENTIAL AND BUSINESS ERVEN/UNITS IN THE AREA AND THE PROPOSED SITE WILL NOT GIVE EFFECT TO MMM'S SPATIAL DEVELOPMENT FRAMEWORK. NO ADDED INCOME FOR MMM IN THE FORM OF RATES AND TAXES.
- NO INCREASE IN TRAFFIC VOLUMES.
- NO ADDED POSSIBILITY OF CRIME TAKING PLACE IN THE SURROUNDINGS DUE TO MORE PEOPLE ACCESSING THE AREA DURING THE CONSTRUCTION PHASE OF THE PROJECT.
- INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES WILL NOT BENEFIT FROM THE CONSTRUCTION. RESULTING IN FURTHER LOSS OF INCOME IN THE LOCAL ECONOMY.

Cumulative impacts:

- THE CUMULATIVE IMPACTS ASSOCIATED WITH NOT DEVELOPING THE PROPOSED SITE ARE A LOSS OF REVENUE TO THE LOCAL ECONOMY AND THE LOSS OF POTENTIAL JOBS.

THE 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 SECTION E OF THIS REPORT 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.

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

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 CONTAMINATION OF THE SOIL, SURFACE AND GROUND WATER AS A RESULT OF PEOPLE 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

- WASTE HAS THE POTENTIAL TO MAKE ANY DEVELOPMENT LOOK UNTIDY AND UNHYGIENIC.
- POSSIBILITY OF LITTER SPREADING BY WIND TO ADJACENT AREAS. ESPECIALLY IF HOUSEHOLD 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 PROPOSED DEVELOPMENT.
- AIR POLLUTION FROM BURNING OF GARDEN WASTE.

NOISE POLLUTION

- INCREASE IN AMBIENT NOISE OF THE AREA DUE TO MORE PEOPLE LIVING IN THE AREA. ADDITIONAL NOISE SOURCES WILL INCLUDE NOISE FROM MAINTENANCE ACTIVITIES AND VEHICLES ACCESSING AND LEAVING THE DEVELOPMENT AREA AS WELL AS NOISE FROM CHILDREN PLAYING ETC. THEREFORE, NORMAL NOISE SOURCES AS CAN BE FOUND IN DIRECTLY ADJACENT AREA.

VISUAL INTRUSION & LIGHT POLLUTION

- THE OPERATIONAL PHASE OF THE DEVELOPMENT (BUILDINGS) WILL ALTER THE VISUAL CHARACTERISTICS OF THE SITE AND THE SURROUNDINGS.
- POSSIBLE LITTERING, RUBBISH AND ILLEGAL DUMPING ON THE SITE WILL BE VISUALLY INTRUSIVE.
- LIGHTS FROM THE DEVELOPMENT MAY BE VISUALLY INTRUSIVE TO SURROUNDING RESIDENTS.

TRAFFIC & ACCESS

- MOVEMENT OF VEHICLES TO AND FROM THE DEVELOPMENT WILL INCREASE TRAFFIC.

SAFETY & SECURITY

- POSSIBILITY OF AN INCREASE IN CRIME IN THE AREA DUE TO MORE PEOPLE LIVING AND WORKING IN THE AREA AS DOMESTIC WORKERS AS WELL AS 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 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 RESIDENTIAL AND BUSINESS ERVEN/UNITS AND THEREFORE THE ENFORCEMENT OF THE SPATIAL DEVELOPMENT FRAMEWORK PLAN OF MMM.
- INCREASE IN THE ECONOMIC POTENTIAL OF LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO RESIDENTS OF THE PROPOSED DEVELOPMENT.

Cumulative impacts:

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 DEVELOPMENT.

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

- 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 PEOPLE RESIDING IN THE PROPOSED DEVELOPMENT. 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 DEVELOPMENT. DISTURBANCE IS LIKELY TO REMAIN EVEN WITH MITIGATION.

THE MITIGATION MEASURES IN THIS BAR AND EMP 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 DEVELOPMENT. 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 AND EMP), 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 AND BUSINESS 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 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 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 RESIDENTIAL AND BUSINESS ERVEN/UNITS AND THEREFORE NO ENFORCEMENT OF THE SPATIAL DEVELOPMENT FRAMEWORK PLAN OF MMM ON THE SAID SITE.

- 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 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. NOISE ALSO ORIGINATES CURRENTLY FROM BUSINESSES THAT EXISTS IN THE AREA AND ESPECIALLY FROM HEAVY VEHICLES ON THE SAND CITY PROPERTY.
- 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 DEVELOPMENT ON PLOT 6 BLOEMSPRUIT.

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 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:								
• 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 BY RESIDENTS OF THE PROPOSED DEVELOPMENT.	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). • RESIDENTS 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 DEVELOPMENT.	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.								
AESTHETIC ENVIRONMENT								
VISUAL DISTURBANCE TO SURROUNDING RESIDENTS AS A RESULT OF THE DEVELOPMENT.	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 DEVELOPMENT.	4	3	2	3	27	LOW	MODERATE	NEGATIVE
MITIGATION OR MANAGEMENT MEASURES:								
• 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, DISTURB WILDLIFE, 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 PHASE OF THE DEVELOPMENT.	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								
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 FROM 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	4	4	3	2	22	LOW	LOW	NEGATIVE

STORM WATER RUNOFF AND THUS REDUCE THE RECHARGE OF GROUNDWATER.								
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:								
• THE DEVELOPER MUST MAKE ONSITE PROVISION FOR THE DEVELOPMENTS WATER STORAGE AND MINIMUM FIRE REQUIREMENTS UNTIL THE MUNICIPAL NETWORK IS UPGRADED (AS PER MMM). • 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 RESIDENTIAL 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 RESIDENTIAL AND BUSINESS ERVEN/UNITS THEREBY GIVING EFFECT TO MMM SPATIAL DEVELOPMENT FRAMEWORK IF APPROVED.	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:
  - ACCESS ROADS SHOULD BE KEPT IN A GOOD CONDITION.
  - 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.
- 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	4	4	2	4	40	MODERATE	MODERATE	POSITIVE

AWARENESS BY EDUCATING FUTURE RESIDENTS IN A WAY TO PROTECT OUR RESOURCES AND THEIR ENVIRONMENT.								
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 DEVELOPMENT. 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:

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. 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.
- 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 PROPOSED 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 AND BUSINESS DEVELOPMENTS. 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 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 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 RESIDENTIAL AND BUSINESS ERVEN/UNITS AND THEREFORE NO ENFORCEMENT OF THE SPATIAL DEVELOPMENT FRAMEWORK PLAN OF MMM ON THE SAID SITE.
- 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 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 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 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.

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

Alternative A1

- NON-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 SITE WILL ONLY BE DECOMMISSIONED IF IT IS NO LONGER NEEDED. SINCE THIS DEVELOPMENT WILL BE SITUATED WITHIN THE URBAN EDGE OF BLOEMFONTEIN AND ALSO SINCE THE PROPOSED DEVELOPMENT IS IN LINE WITH THE MMM'S SDF NO DECOMMISSIONING OF THE DEVELOPMENT IS EXPECTED.

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 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

BASIC ASSESSMENT REPORT (BAR) AND ENVIRONMENTAL MANAGEMENT PLAN (EMP)

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

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 AND MONTHLY THEREAFTER. THIS MONITORING 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.
- COMPLIANCE MONITORING WITH A RATING OF COMPLIANCE WITH THE EMP.
- 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.

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 TO ENSURE COMPLIANCE AND IN ORDER TO REMEDY ANY PROBLEMS WITH EITHER THE IMPLEMENTATION OR INTERPRETATION OF THE EMP. THIS 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 THE 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 CHECK 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.

9. **SUMMARY OF AUDITING REQUIREMENTS TO BE COMPLETED AND TO BE SUBMITTED TO DESTEA**

- PRE-CONSTRUCTION PHASE – CONDUCT AN PRE-CONSTRUCTION AUDIT/STATE OF THE SITE REPORT WITH PHOTOGRAPHIC RECORD OF THE SITE BEFORE CONSTRUCTION COMMENCES. THIS INCLUDE NOTIFYING DESTEA WITHIN THE TIMEFRAME AS INDICATED IN ENVIRONMENTAL AUTHORISATION THAT CONSTRUCTION WILL START. NO CONSTRUCTION ALLOWED IF DESTEA IS NOT NOTIFIED IN ADVANCE.
- CONSTRUCTION PHASE - CONDUCT A QUARTERLY CONSTRUCTION AUDIT REPORT WITH PHOTOGRAPHIC RECORD OF THE PROPOSED DEVELOPMENT AND ITS CONSTRUCTION RELATED ACTIVITIES. SUBMIT THESE QUARTERLY CONSTRUCTION AUDIT REPORTS TO DESTEA.
- POST CONSTRUCTION PHASE – COMPILE A POST CONSTRUCTION AUDIT REPORT ONCE THE CONSTRUCTION PHASE HAS BEEN COMPLETED. THIS AUDIT MUST BE SUBMITTED TO DESTEA.
- OPERATIONAL PHASE – COMPILE YEARLY OPERATIONAL AUDITS FOR THE FIRST 3 YEARS OF THE DEVELOPMENT. THE 1ST ONE TO BE DONE 1 YEAR AFTER CONSTRUCTION HAS BEEN COMPLETED.

THE AUDITS MUST BE DONE BY AN EAPASA REGISTERED INDEPENDENT ENVIRONMENTAL CONSULTANT TO BE APPOINTED BY THE DEVELOPER.

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 ABOVE. 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 DEVELOPMENT.

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 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 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.
- IMPACT ON BULK SERVICES.

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 RESIDENTIAL AND BUSINESS 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 RESIDENTIAL AND BUSINESS ERVEN/UNITS AND THEREFORE THE ENFORCEMENT OF THE SPATIAL DEVELOPMENT FRAMEWORK PLAN OF MMM.
- INCREASE IN THE ECONOMIC POTENTIAL OF LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO RESIDENTS OF THE PROPOSED 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 DEVELOPMENT.
- INCREASED RUN OFF OF WATER - THE INCREASE IN DEVELOPED AREAS (HOUSES) 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 - 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 RESIDENTIAL AND BUSINESS 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 PEOPLE RESIDING IN THE PROPOSED 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 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. 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.

- 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 AND BUSINESS 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. 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 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 RESIDENTIAL AND BUSINESS ERVEN/UNITS AND THEREFORE NO ENFORCEMENT OF THE SPATIAL DEVELOPMENT FRAMEWORK PLAN OF MMM ON THE SAID SITE.
- 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 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 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.

THE CUMULATIVE IMPACTS ASSOCIATED WITH THE 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 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.

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. NO OTHER LOCATION ALTERNATIVES HAVE BEEN PROPOSED FOR THE PROJECT AS THIS IS THE ONLY SITE AVAILABLE FOR THE APPLICANT AND WITHIN ALREADY DISTURBED AREAS. THE PROPOSED FOOTPRINT IS LOCATED ON A DILAPIDATED SMALLHOLDING THAT WILL BE DEVELOPED TO MAKE PROVISION FOR THE PROPOSED DEVELOPMENT. THE PROPOSED SITE IS NOT LOCATED IN CLOSE PROXIMITY TO ANY SENSITIVE ENVIRONMENT (I.E. WATERCOURSE).

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.

OUR RECOMMENDATION, BASED ON THE ASSESSMENT OF THE AVAILABLE INFORMATION, IS THAT APPLICATION FOR THE PROPOSED DEVELOPMENT SHOULD BE AUTHORISED PROVIDED THAT SENSITIVE PLANNING, DESIGN AND GOOD ENVIRONMENTAL MANAGEMENT BE CARRIED OUT BY THE PROPONENT DURING ALL PHASES OF 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 DEVELOPMENT.

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 AT ALL TIMES. THE SPECIALITY REPORTS INCLUDE:

- CIVIL SERVICES REPORTS;
- ELECTRICAL REPORT;
- TRAFFIC IMPACT ASSESSMENT;
- HERITAGE AND PALAEONTOLOGICAL IMPACT ASSESSMENT;
- GEOTECHNICAL REPORT.

THE FOLLOWING CONDITIONS NEEDS TO FORM PART OF THE ENVIRONMENTAL AUTHORIZATION SHOULD DESTEA DECIDE TO ISSUE IT. THEY INCLUDE BUT ARE NOT LIMITED TO:

- THE DEVELOPER MUST MAKE ONSITE PROVISION FOR THE DEVELOPMENTS WATER STORAGE AND MINIMUM FIRE REQUIREMENTS UNTIL THE MUNICIPAL NETWORK IS UPGRADED (AS PER MMM).
- THE DEVELOPER MUST FOLLOW PROPER PROCEDURES AS STIPULATED IN SECTION 34(1) OF THE NATIONAL HERITAGE RESOURCES ACT 25 OF 1999 ["NO PERSON MAY ALTER OR DEMOLISH ANY STRUCTURE OR PART OF A STRUCTURE WHICH IS OLDER THAN 60 YEARS WITHOUT A PERMIT ISSUED BY THE RELEVANT PROVINCIAL HERITAGE RESOURCES AUTHORITY"], BY APPLYING FOR A DESTRUCTION PERMIT FROM THE FREE STATE HERITAGE RESOURCES AUTHORITY (HERITAGEFREESTATE.CO.ZA); AND THAT THE LAYOUT OF THE BUILDING STRUCTURES ARE PROPERLY MAPPED AND PHOTOGRAPHED BEFORE DESTRUCTION TAKES PLACE.
- THE EXISTING ELECTRICITY NETWORK IN THE AREA OF THE IDENTIFIED LOCATION NEEDS TO BE UPGRADED. THE DEVELOPER MUST SUPPLY AND INSTALL A 500KVA MINIATURE SUBSTATION AT THE PROPOSED POSITION WITHIN THE SERVITUDE ON THE SITE LONGITUDINAL ALONG OLD THABA-NCHU ROAD RESERVE. THIS MINIATURE SUBSTATION MUST COMPLY TO THE CENTLEC STANDARD AS PER THEIR CD 27 SPECIFICATION WITH TYPE X LV BOARD.
- ALL PUBLIC STREETS WITHIN OR ADJACENT TO THE DEVELOPMENT MUST HAVE STREETLIGHTS INSTALLED AND COMPLY WITH NATIONAL STANDARDS.

- BEFORE ANY CONSTRUCTION MAY TAKE PLACE, CENTLEC SHALL BE PROVIDED WITH A SIGNED COPY OF THE SERVICE LEVEL AGREEMENT AND COMPLETE SET OF THE APPROVED ELECTRICAL DESIGN DRAWINGS.
- THE USE OF SHINY MATERIALS MUST BE AVOIDED WERE POSSIBLE. SHINY METAL STRUCTURE SHOULD BE DARKENED OR SCREENED TO PREVENT GLARE. NIGHT TIME LIGHT SOURCE MUST BE DIRECTED AWAY FROM RESIDENTIAL AREA. THE MATERIAL AND COLOURS USED IN THE CONSTRUCTION OF THE BUILDING AND INFRASTRUCTURE MUST GIVE PREFERENCE TO NATURAL AND ECO- FRIENDLY CHOICE IN ORDER TO MINIMIZE VISUAL IMPACT ON SURROUNDING AREAS.
- STORMWATER DRAINAGE MUST BE DESIGNED TO DIRECT WATER AWAY FROM BUILDINGS, INCORPORATE ENERGY DISSIPATERS, BUFFERED STORMWATER OUTLETS ETC INTO THE FINAL DESIGN OF THE DEVELOPMENT. STORMWATER SERVITUDES MUST BE REGISTERED AND MAINTAINED FREE OF ANY OBSTRUCTION.
- IF TRENCHES WILL BE DUG TO BURY FOR THE PROPOSED SEWERAGE AND WATER PIPES AND ELECTRICITY LINES, THEY SHOULD NOT BE LEFT OPEN FOR EXTENDED PERIODS AS FAUNA MAY FALL IN AND BECOME TRAPPED THEREIN. TRENCHES WHICH ARE EXPOSED SHOULD CONTAIN SOIL RAMPS ALLOWING FAUNA TO ESCAPE.
- THERE MUST BE AN ACTIVE PROGRAM TO SEPARATE THE METALS, BOTTLES AND PLASTICS IN THE SOLID WASTE AND SEND IN TO A REPUTABLE RECYCLING PROGRAM IN ORDER TO REDUCE SOIL POLLUTION AND PROMOTE PRESERVATION OF VALUABLE RESOURCES BY RECYCLING AND OR REUSING MATERIALS.
- THE PROJECT SITE IS GENERALLY LOCATED IN AN AREA WHERE NO SERIOUS OR ADVERSE GEOLOGICAL HAZARDS ARE EXPECTED TO OCCUR. HOWEVER, THE PROPOSED CONSTRUCTION SITE HAS CONDITIONS THAT REQUIRES CARE WHEN CORRELATING THE GENERAL AND / OR SITE-SPECIFIC SUBSOIL GEOTECHNICAL CONDITIONS AT THE PROJECT SITE.
- IT IS STRONGLY RECOMMEND THAT CONFIRMATORY QUALITY ASSURANCE TESTING BE CARRIED OUT TO CONFIRM THE MATERIAL CLASSIFICATION DEVISED DURING THE CURRENT GEOTECHNICAL INVESTIGATION (AS WARRANTED). IT IMPORTANT THAT A COMPETENT PERSON (SUCH AS AN ENGINEERING GEOLOGIST OR GEOTECHNICAL ENGINEER) SHOULD BE ABLE TO CARRY OUT PERIODICAL INSPECTIONS OF THE EARTHWORKS AND OPEN FOUNDATIONS (ON SITE).
- THE PLACEMENT OF THE IRRIGATION SYSTEM FOR THE GARDENS CAN RESULT IN THE ADDITION OF SIGNIFICANT VOLUMES OF WATER ADJACENT TO AND ON THE CONCRETE AND BLOCK APRONS SURROUNDING THE STRUCTURES, LEADING TO DIFFERENTIAL MOVEMENT AND CRACKING.
- TO MITIGATE AGAINST POTENTIAL GEOTECHNICAL CHALLENGES ASSOCIATED WITH POTENTIAL SHALLOW WATER SEEPAGE, BASHAN GEOTECHNICS RECOMMENDS THE USE OF A DAMP PROOF (OR ANY OTHER MITIGATING MATERIAL) DURING THE CONSTRUCTION STAGE.
- SUBSOIL DRAINS WILL HAVE TO BE INSTALLED TO DRAW DOWN THE WATER TABLE IN LOCATIONS WHERE SUFFICIENT ACCUMULATIONS OF WATER CONSTANTLY RECUR AND IF IMPLEMENTED, IT IS RECOMMENDED THAT THESE BE DESIGNED ACCORDING TO THE FILTER CRITERIA OF THE IN-SITU SOILS TO PREVENT PIPING.
- SUBSURFACE SERVICES SHOULD HAVE BEEN LOCATED SUFFICIENTLY FAR (AT LEAST 1.50 M) AWAY FROM THE STRUCTURES FROM BUILDINGS SO THAT THAT THEIR BACKFILLED TRENCHES DO NOT INTERFERE WITH THE FOUNDATIONS FOR THE MAIN BUILDING INFRASTRUCTURE AND OTHER STRUCTURES.
- THE DEVELOPMENT MUST COMPLY WITH OTHER ENVIRONMENTAL LEGISLATION 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 THE LIGHT OF THE FINDINGS OF THIS REPORT AND SPECIALIST REPORTS ABOVE, IT IS OUR SUBMISSION THAT A SUSTAINABLE ENVIRONMENT CAN BE CREATED CONTAINING INDIRECT BENEFITS TO THE LARGER AREA THAT OUTWEIGHS THE POTENTIAL LIMITED AND SHORT-LIVED ENVIRONMENTAL DISRUPTION DURING CONSTRUCTION. THE DEVELOPMENT IS FINANCIALLY FEASIBLE, PHYSICALLY POSSIBLE AND LEGALLY PERMISSIBLE – AND THEREFORE

PASSES THE THREE TESTS TO DETERMINE IMPLEMENTATION POSSIBILITY, DEVELOPMENT AND MAINTENANCE POTENTIAL AND SUSTAINABILITY.		
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