

Table of Contents

List of Tables.....	1
List of Appendices.....	1
Abbreviations.....	2
SECTION 1: BACKGROUND.....	3
SECTION 2: INTRODUCTION.....	3
SECTION 3: PHASES OF THE PROJECT.....	4
3.1 PLANNING PHASE.....	4
3.2. CONSTRUCTION PHASE.....	4
3.3. THE OPERATIONAL PHASE.....	4
SECTION 4: RESPONSIBILITIES OF THE ROLE PLAYERS.....	5
4.1 DEVELOPER.....	5
4.2 CONTRACTOR.....	5
4.3 ENVIRONMENTAL CONTROL OFFICER (ECO).....	5
4.3.1 Liaison with Authorities.....	6
4.3.2 Liaison with Contractors.....	6
4.4 ENVIRONMENTAL LIAISON OFFICER (ELO).....	6
SECTION 5: TRAINING PROGRAMME.....	7
SECTION 6: ENVIRONMENTAL MANAGEMENT PLAN (EMP).....	7
SECTION 8: CONCLUSIONS.....	65

List of Tables

Table 1: Planning Phase for the Proposed Development.....	8
Table 2: Construction phase for the Proposed Development.....	15
Table 3: Operational Phase for the Proposed Development.....	55

List of Appendices

Appendix 1: Incident Log Sheet	
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Abbreviations

BAR	Basic Assessment Report
CE	Civil Engineer
CLO	Community Liaison Officer
DEAT	Department of Environmental Affairs and Tourism
DESTEA	Department of Economic, Small Business Development, Tourism and Environmental Affairs
DWS	Department of Water and Sanitation
ECO	Environmental Control Officer
ELO	Environmental Liaison Officer
EMP	Environmental Management Plan
MMM	Mangaung Metro Municipality
MMC	Mitigation Monitoring Committee
SAHRA	South African Heritage Resources Agency

SECTION 1: BACKGROUND

MvW Environmental Services, as independent consultants, was appointed by Mr Oosthuizen to facilitate the Integrated Environmental Management (IEM) procedure for the Proposed Township Establishment on Plot 4 Spitskop, situated within Mangaung Metro Municipality (MMM), Bloemfontein.

The EMP was compiled by M van Wyk that has a B.Sc and M.Sc Degree in Environmental Management from the University of the Free State. He has 19 years experience in the field of Environmental Management.

The purpose of this document, Environmental Management Plan (EMP) is to provide management options that will ensure that the impacts of the development are minimised. This EMP, therefore, is a stand-alone document, which must be used on the site during each phase (planning, construction and operational) of the development. In addition, all mitigation measures recommended in the Basic Assessment Report and specialist studies undertaken are incorporated thereon.

SECTION 2: INTRODUCTION

It is understood that any development can pose various risks to the environment as well as the inhabitants in the surrounding area. These possible risks should be taken into account during the planning phase of the development. The purpose of this document is to provide management responses that will ensure that the impacts of the development are minimised. This EMP must be used on site during each phase of the development (planning, construction and operational).

This document should be flexible so as to allow the contractor and developer to conform to the management commitments without being prescriptive. The management commitments prove that the anticipated risks on the environment will be minimised if they are adhered to consistently. The onus set out in the EMP rests with the developer, the main and subcontractors, which will promote responsibility and commitment. Any parties responsible for transgression of the underlying management measures outlined in this document will be held liable for non-compliances and will be dealt with accordingly.

SECTION 3: PHASES OF THE PROJECT

The process which was followed in compiling the EMP is in compliance with Sections 21, 22 and 26 of the Environment Conservation Act, 1989 (Act No.73 of 1989), and applies the principle of Integrated Environmental Management (IEM). The purpose of this EMP is to formulate mitigation measures that should be made binding on all contractors during the construction phase as well as measures that should be implemented during the operational phase.

The purpose of this EMP is to formulate mitigation measures that should be made binding on all contractors during the construction phase as well as measures that should be implemented during the operational phase.

The point of departure for this EMP is to take a pro-active route by addressing potential problems before they occur. This should limit corrective measures required during the construction and operational phases of the development. Additional mitigation will be included throughout the project's various phases, as required and if necessary.

In particular, this EMP deals with the following phases as detailed below:

3.1 PLANNING PHASE

The EMP offers an ideal opportunity to incorporate pro-active environmental management measures with the goal of attaining sustainable development. Pro-active environmental measures minimize the chances 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 (e.g. this EMP) during the planning phase, the necessary corrective action can be taken to further limit potential impacts.

3.2. CONSTRUCTION PHASE

The bulk of the impacts during this phase will have immediate effect (e.g. noise, dust and water pollution). If the site is monitored on a continual basis during the construction phase, it is possible to identify these impacts as they occur. These impacts will then be mitigated through the contingency plans identified in the planning phase, together with a commitment to sound environmental management from the developer.

3.3. THE OPERATIONAL PHASE

By taking pro-active measures during the planning and construction phases, potential environmental impacts emanating during the operational phase will be minimised. This, in turn, will minimise the risk and reduce the monitoring effort, but it does not make monitoring obsolete.

SECTION 4: RESPONSIBILITIES OF THE ROLE PLAYERS

4.1 DEVELOPER

The developer remains ultimately responsible for ensuring that the development is implemented according to the requirements of the EMP. Although the developer appoints specific role players to perform functions on his/her behalf, this responsibility is delegated. The developer is responsible for ensuring that sufficient resources (time, financial, human, equipment, etc.) are available to the other role players (e.g. the ECO, ELO and contractor) to efficiently perform their tasks in terms of the EMP. The developer is liable for restoring the environment in the event of negligence leading to damage to the environment.

The developer must ensure that the EMP is included in the tender documentation so that the contractor who is appointed is bound to the conditions of the EMP. The developer must appoint an independent Environmental Control Officer (ECO) during the construction phase to oversee all the environmental aspects relating to the development.

4.2 CONTRACTOR

The contractor, as the developer's agent on site, is bound to the EMP conditions through his/her contract with the developer, and is responsible for ensuring that he adheres to all the conditions of the EMP. The contractor must thoroughly familiarise him/herself with the EMP requirements before coming onto site and must request clarification on any aspect of these documents, should they be unclear. The contractor must ensure that he/she has provided sufficient budget for complying with all EMP conditions at the tender stage.

The contractor must comply with all orders (whether verbal or written) given by the ECO, project manager or site engineer in terms of the EMP.

4.3 ENVIRONMENTAL CONTROL OFFICER (ECO)

The Environmental Control Officer (ECO) is appointed by the developer as an independent monitor of the implementation of the EMP. He/she must form part of the project team and be involved in all aspects of project planning that can influence environmental conditions on the site. The ECO must attend relevant project meetings, conduct inspections to assess compliance with the EMP and be responsible for providing feedback on potential environmental problems associated with the development. In addition, the ECO is responsible for:

- Liaison with relevant authorities;
- Liaison with contractors regarding environmental management; and
- Undertaking routine monitoring and appointing a competent person/institution to be responsible for specialist monitoring, if necessary.

The ECO has the right to enter the site and undertake monitoring and auditing at any time, subject to compliance with health and safety requirements applicable to the site (e.g. wearing of safety boots and protective head gear).

4.3.1 Liaison with Authorities

The ECO will be responsible for liaising with the Department of Economic, Small Business Development, Tourism and Environmental Affairs (DESTEA) as well as with the Environmental Division of the Mangaung Metro Municipality (MMM). The ECO must submit monthly environmental audit reports to the authorities. These audit reports must contain information on the contractor and developer's levels of compliance with the EMP.

The audit report must also include a description of the general state of the site, with specific reference to sensitive areas and areas of non-compliance. The ECO is to suggest corrective action measures to eliminate the occurrence of the non-compliance incidents. In order to keep a record of any impacts, an Environmental Log Sheet (Refer to Annexure 1) should be kept on a continual basis.

4.3.2 Liaison with Contractors

The ECO is responsible for informing the contractors of any decisions that are taken concerning environmental management during the construction phase. This would also include informing the contractors of the necessary corrective action to be taken.

4.4 ENVIRONMENTAL LIAISON OFFICER (ELO)

The contractor must appoint an Environmental Liaison Officer (ELO) to assist with day-to-day monitoring of the construction activities. Any issues raised by the ECO will be routed to the ELO for the contractor's attention. The ELO shall be permanently on site during the construction phase to ensure daily environmental compliance with the EMP and should ideally be a senior and respected member of the construction crew. Past experience has revealed that ELO's that can relate to the work force are the most effective for information transfer and ensuring compliance with the EMP.

SECTION 5: TRAINING PROGRAMME

This programme has been developed in order to ensure that all contractors and subcontractors are made aware of and understand the contents of the EMP, the sensitivity of the environment and the consequences of non-compliance to the EMP. It is recommended that an awareness raising session on the EMP be conducted prior to the commencement of any construction activity. This session will undertake to achieve the following:

- Explain the contents of the EMP from the planning phase through to the operational phase.
- Identify where possible problems could arise that may lead to non-compliance with the EMP, to address these issues and identify measures to reduce the likelihood of their occurrence.
- Discuss mitigation measures that should be instituted should an incident occur.
- Establish roles and responsibility in terms of the EMP.
- Discuss the role of the Mitigation Monitoring Committee (MMC), and introduce the members on this committee to the contractors/sub-contractors.
- Provide an opportunity for the ECO to walk the site with the contractors/subcontractors and demarcate the various sensitive areas so that all have been shown where these are, so as to reduce the chances of any negative impact to these areas.

After this initial meeting, it is suggested that monthly follow-up meetings take place. These meetings will allow issues around the EMP to be discussed and to indicate areas of concern. This will also provide the ideal forum in which to discuss issues that have been captured in the Environmental Incident Log and complaints register, as well as to report back on the findings of the monthly audit reports. This will ensure that the contractors and sub-contractors are kept well informed of any transgressions as well as providing them with positive feedback in terms of their compliance with the EMP. It also will assist in identifying whether any additional measures are required to be implemented and if so, that they be fully explained to everyone to ensure that new measures are implemented when and if required. Over and above these meetings, the ELO will be on site on a daily basis and will provide on site assistance where and when required and will liase closely with the ECO on the day-to-day activities, identifying and reporting any issues that require attention.

SECTION 6: ENVIRONMENTAL MANAGEMENT PLAN (EMP)

The following tables form the core of this EMP for the planning, construction and operational phases of the proposed development. These tables should be used as checklists on site, especially during the construction phase. Compliance with this EMP must be audited monthly during the construction phase and once immediately following completion of construction. This must be followed up with annual audits for a period of two years during the operational phase.

Table 1: Planning Phase for the Proposed Development.

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
GENERAL	<ul style="list-style-type: none"> • 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. • THUS NO CONSTRUCTION ACTIVITIES MUST COMMENCE ON SITE PRIOR TO OBTAINING THE NECESSARY APPROVALS. 	DEVELOPER, CONTRACTOR	ONCE-OFF
	<ul style="list-style-type: none"> • THE MITIGATION MEASURES IN THE BAR & THIS 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. 	DEVELOPER	ONCE-OFF
APPOINTMENT AND DUTIES OF ECO.	<ul style="list-style-type: none"> • THE DEVELOPER MUST APPOINT AN INDEPENDENT ENVIRONMENTAL CONTROL OFFICER (ECO) WHO MUST MONITOR THE CONTRACTOR'S COMPLIANCE WITH THE ENVIRONMENTAL MANAGEMENT PLAN. 	DEVELOPER	ONCE-OFF
	<ul style="list-style-type: none"> • THE DEVELOPER MUST PROVIDE THE CONTRACTOR WITH A COPY OF THE EMP AND BAR. 	DEVELOPER	ONCE-OFF
	<ul style="list-style-type: none"> • THE PRIORITY OF THE ECO IS TO MAINTAIN THE INTEGRITY OF THE DEVELOPMENT CONDITIONS OUTLINED IN THIS EMP. 	ECO	CONTINUOUS
	<ul style="list-style-type: none"> • THE ECO AND MMC MUST FORM PART OF THE PROJECT MANAGEMENT TEAM AND ATTEND ALL RELEVANT PROJECT MEETINGS. 	ECO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> • THE CONTRACTOR MUST ENSURE THAT THE CONSTRUCTION CREW ATTEND AN ENVIRONMENTAL BRIEFING AND TRAINING SESSION PRESENTED BY THE ECO PRIOR TO COMMENCING ACTIVITIES ON SITE. 	CONTRACTOR, ECO, MMC	ONCE-OFF

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
APPOINTMENT AND DUTIES OF ELO.	<ul style="list-style-type: none"> • THE CONTRACTOR MUST APPOINT AN ENVIRONMENTAL LIAISON OFFICER (ELO). THIS PERSON WILL BE REQUIRED TO MONITOR THE SITUATION WITH A DIRECT HANDS-ON APPROACH, AND ENSURE COMPLIANCE AND CO-OPERATION OF ALL PERSONNEL. HE SHOULD BE FLUENT IN THE LANGUAGES OF THE EMPLOYEES. 	CONTRACTOR	ONCE-OFF
PUBLIC PARTICIPATION AND LABOUR.	<ul style="list-style-type: none"> • CONSULTATION WITH THE SURROUNDING LANDOWNERS AND BROADER PUBLIC DURING THE EIA PROCESS. OBTAIN THE COMMENTS FROM THE MUNICIPALITY, THE DEPARTMENTS OF HEALTH, AGRICULTURE, DWS ETC. 	ENVIRONMENTAL CONSULTANT	DURING THE EIA
	<ul style="list-style-type: none"> • EMPLOYMENT OF LOCAL LABOUR, FROM THE SURROUNDING COMMUNITIES AND THE IMPLEMENTATION OF TRAINING IS TO BE INSTITUTED DURING THE TIME PERIOD OF THE CONSTRUCTION. 	DEVELOPER, CONTRACTOR	AT PROJECT INITIATION, AND AS NECESSARY.
	<ul style="list-style-type: none"> • A COMMUNITY LIAISON OFFICER (CLO) MUST BE APPOINTED BY THE CONTRACTOR. THIS PERSON SHOULD PROVIDE A BRIDGE BETWEEN THE LOCAL COMMUNITY, THEIR COMMUNITY COUNCILLORS AND THE CONTRACTOR. 		
	<ul style="list-style-type: none"> • THE ABOVE APPOINTMENT COULD BE COMBINED WITH THE REQUIREMENT FOR THE APPOINTMENT OF AN ELO, I.E. THE CLO AND ELO MAY BE ONE PERSON WITH DUAL FUNCTIONS, AND THE APPOINTEE MAY FORM PART OF THE LOCAL LABOUR PROCUREMENT MENTIONED ABOVE. 		
	<ul style="list-style-type: none"> • IT IS RECOMMENDED THAT THE CLO SHOULD BE A MEMBER OF THE COMMUNITY AFFECTED BY THE CONSTRUCTION. 		
GEOLOGY AND FOUNDATION STABILITY.	<ul style="list-style-type: none"> • A GEOTECHNICAL REPORT MUST BE COMPILED. 	DEVELOPER, CE	ONCE OFF

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
DRAINAGE, EROSION, SEDIMENTATION AND FLOODING.	<ul style="list-style-type: none"> 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 REGSITERED AND MAINTAINED FREE OF ANY OBSTRUCTIONS. 	DEVELOPER, MMC, CE	ONCE OFF
	<ul style="list-style-type: none"> IF POSSIBLE, CONSTRUCTION ACTIVITIES SHOULD BE SCHEDULED FOR THE DRY WINTER MONTHS TO DECREASE THE RISK OF EROSION DURING HEAVY THUNDERSTORMS. 	DEVELOPER, CONTRACTOR, MMC	ONCE OFF
ENVIRONMENTAL DISTURBANCE.	<ul style="list-style-type: none"> ANY INDIGENOUS TREES OCCURRING ON SITE MUST BE INCORPORATED INTO THE DESIGN AND LANDSCAPING OF THE PROPOSED DEVELOPMENT OR RELOCATED. ANY TREES THAT WILL BE RETAINED MUST BE CLEARLY MARKED AND PROTECTED AGAINST DAMAGE BY CONSTRUCTION ACTIVITIES. 	ECO, ELO, MMC, SPECILAIST	ONCE OFF
	<ul style="list-style-type: none"> TRENCHES FOR PIPES OR CABLES MUST PLANNED NEXT TO ROADS WHERE IT WILL HAVE THE SMALLEST IMPACT. TRENCHES SHOULD BE PLANNED IN SUCH A WAY THAT NO LARGE TREES SHOULD BE REMOVED. 	DEVELOPER, CE	ONCE OFF
SERVICES	<ul style="list-style-type: none"> COMPILE A CIVIL SERVICES REPORT. MMM MUST ISSUE A LETTER THAT SUFFICIENT BULK SERVICES ARE AVAILBLE BOFORE CONSTRUCTION STARTS. THIS LETTER MUST BE SUBMITTED TO DWS AND DESTEA. 	DEVELOPER & CE	ONCE OFF

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
SERVICES	<ul style="list-style-type: none"> CORRECT TIMING OF THE CONSTRUCTION, STAFFING AND OPENING OF ALL SERVICES AND FACILITIES NECESSARY TO SUPPORT THE RAPIDLY EXPANDING POPULATION. A SERVICES/FACILITIES PLAN SHOULD BE DEVELOPED TO DETERMINE AND SET OUT AN APPROPRIATE PLAN OF ACTION, ENSURING THAT BUDGETS AND CONSTRUCTION PROGRAMMES ARE APPROPRIATELY ALIGNED. 	DEVELOPER, CE & CONTRACTOR	CONTINUOUS
	<ul style="list-style-type: none"> APPROPRIATE DESIGN AND CONSTRUCTION OF HOUSING TO ENABLE EFFICIENT ELECTRICITY USAGE. THIS WILL BE OF BENEFIT TO THE RESIDENTS AND THE CITY. 	DEVELOPER, ECO, CE	ONCE-OFF
	<ul style="list-style-type: none"> THE SERVICE SYSTEMS ARE TO BE DESIGNED ACCORDING TO THE MINIMUM REQUIREMENTS OF THE MMM. THESE SYSTEMS MUST BE SUBMITTED TO THE MUNICIPALITY FOR APPROVAL. THUS NO CONSTRUCTION ACTIVITIES MUST COMMENCE ON SITE PRIOR TO OBTAINING THE NECESSARY APPROVAL. 	CE, ECO	DESIGN PHASE
	<ul style="list-style-type: none"> THE REQUIRED INFRASTRUCTURE, I.E. ROADS, SEWAGE LINES, ELECTRICITY LINES ETC. SHOULD BE PLANNED IN SUCH A MANNER THAT THE POTENTIAL IMPACTS ON THE AREA ARE MINIMIZED. INSTALLATION OF THE NECESSARY INFRASTRUCTURE AND BULK SERVICES REQUIRED FOR ESTABLISHMENT SHOULD TAKE PLACE DURING THE DRY SEASON IF POSSIBLE. 		
	<ul style="list-style-type: none"> NO ON-SITE SANITATION MUST BE ALLOWED. THE PROPOSED DEVELOPMENT MUST CONNECT TO EXISTING MUNICIPAL SERVICES. 	DEVELOPER, CE	ONCE-OFF

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> REQUIREMENT TO INCLUDE FEATURES AND FITTINGS (SPECIFIED) THAT CONTRIBUTE TO THE SUSTAINABILITY OF THE DEVELOPMENT, IN TENDER DOCUMENTS (E.G. USE OF INSULATION, LOW FLOW WATER FITTINGS ETC). 	DEVELOPER, CE	ONCE-OFF
	<ul style="list-style-type: none"> CAREFUL STORMWATER MANAGEMENT IS REQUIRED ACROSS THE SITE IN ORDER TO REMOVE STORMWATER IN A SPEEDY AND EFFICIENT MANNER AND MOST IMPORTANTLY TO PREVENT ANY ACCUMULATION OF SURFACE WATER AGAINST OR NEAR BUILDINGS. 	DEVELOPER, ECO, CE	ONCE-OFF
WATER RESOURCES	<ul style="list-style-type: none"> APPROPRIATE DESIGN AND CONSTRUCTION OF HOUSING TO ENABLE EFFICIENT WATER USAGE. THIS WILL BE OF BENEFIT TO THE RESIDENTS AND THE CITY. 	DEVELOPER, ECO, CE	ONCE-OFF
TRAFFIC AND ACCESS	<ul style="list-style-type: none"> ACCESS TO THE PROPOSED SITE MUST BE VIA THE EXISTING ROAD NETWORK ONLY. 	DEVELOPER, TOWN PLANNER	ONCE-OFF
SENSE OF PLACE AND VISUAL IMPACT.	<ul style="list-style-type: none"> ARCHITECTURAL AND TOWN PLANNING GUIDELINES (E.G. COVERAGE, HEIGHT RESTRICTIONS, BUILDING MATERIALS ETC.) TO HELP MITIGATE AGAINST POTENTIAL VISUAL IMPACT ON SURROUNDING PROPERTIES. THE PROPOSED DEVELOPMENT MUST BE DESIGNED TO FIT IN WITH THE SURROUNDING ENVIRONMENT AND TO CONTRIBUTE TO THE TRANQUIL ATMOSPHERE. 	DEVELOPER; TOWN PLANNER AND ARCHITECT	ONCE-OFF
	<ul style="list-style-type: none"> THE PLANNING OF CONSTRUCTION ACTIVITIES (CONSTRUCTION SITE) MUST ENDEAVOUR TO MINIMISE THE NOISE IMPACT ON ADJACENT LANDOWNERS. 	CONTRACTOR, MMC	CONTINUOUS
	<ul style="list-style-type: none"> THE CONSTRUCTION CAMP MUST PREFERABLY BE POSITIONED WHERE IT WILL NOT VISUALLY IMPACT ON ADJACENT LANDOWNERS. 	CONTRACTOR, ECO, MMC	ONCE-OFF

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
HERITAGE AREAS	<ul style="list-style-type: none"> • COMPILE A HERITAGE IMPACT ASSESSMENT REPORT. 	DEVELOPER, HERITAGE SPECIALIST	ONCE-OFF
ELECTRICITY AND ENERGY EFFICIENCY	<ul style="list-style-type: none"> • AN ELECTRICAL SERVICES REPORT MUST BE COMPILED. 	DEVELOPER; ELECTRICAL ENGINEER	ONCE-OFF
	<ul style="list-style-type: none"> • BUILDINGS MUST BE SO DESIGNED TO BE ENERGY EFFICIENT DURING BOTH CONSTRUCTION AND OPERATIONAL PHASES. 	DEVELOPER	CONTINUOUS
ENVIRONMENTAL MANAGEMENT PLAN (EMP)	<ul style="list-style-type: none"> • THIS EMP MUST BE MADE BINDING TO THE MAIN CONTRACTOR AS WELL AS INDIVIDUAL CONTRACTORS AND SHOULD BE INCLUDED IN THE TENDER DOCUMENTATION OF THE CONSTRUCTION CONTRACT. 	DEVELOPER, ECO	ONCE-OFF
	<ul style="list-style-type: none"> • A ONE-WEEK NOTICE MUST BE GIVEN TO DESTEA PRIOR TO COMMENCEMENT OF ANY WORKS. THE EMP MUST ALSO BE PROVIDED TO MMM ENVIRONMENTAL SCETION BEFORE CONSTRUCTION COMMENCES. 	DEVELOPER, ECO	ONCE-OFF
	<ul style="list-style-type: none"> • EMP MUST CONSIDER AND PROVIDE FOR HAZARDOUS MATERIAL RUN-OFF. EG FUEL SPILLS. 	ENVIRONMENTAL CONSULTANT, ECO	ONCE-OFF
	<ul style="list-style-type: none"> • THE EMP MUST INCLUDE A LITTER MANAGEMENT REQUIREMENT ALONG THE BOUNDARY FENCES. 	ENVIRONMENTAL CONSULTANT, ECO	ONCE-OFF
	<ul style="list-style-type: none"> • THE EMPR MUST BE SIGNED BY THE DEVELOPER AND THE CONTRACTOR STATING THAT THEY UNDERSTAND THE CONDITIONS AND REQUIREMENTS OF THE EMPR. 	ENVIRONMENTAL CONSULTANT, ECO	ONCE-OFF
ENVIRONMENTAL AUTHORIZATION	<ul style="list-style-type: none"> • APPLY FOR ENVIRONMNETAL AUTHORIZATION FROM DESTEA. 	DEVELOPER, ENVIRONMENTAL CONSULTANT	ONCE-OFF
	<ul style="list-style-type: none"> • THE CONDITIONS IN THE ENVIRONMENTAL AUTHORIZATION MUST BE COMPLIED WITH BY THE DEVELOPER AND THE CONTRACTOR. 	DEVELOPER; CONTRACTOR	CONTINUOUS
TOWN PLANNING AUTHORIZATION	<ul style="list-style-type: none"> • THE SITE MUST HAVE OBTAINED ALL REQUIRED TOWN PLANNING AUTHORIZATIONS. 	DEVELOPER, TOWN PLANNER	ONCE-OFF

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
ENVIRONMENTAL INDUCTION COURSE.	<ul style="list-style-type: none"> 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. 	DEVELOPER, ECO	ONCE-OFF

Table 2: Construction Phase for the Proposed Development.

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
GENERAL	<ul style="list-style-type: none"> • 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 DESTEA ON REQUEST. 	CONTRACTOR, ECO	CONTINUOUS
	<ul style="list-style-type: none"> • A PHOTOGRAPHIC RECORD OF THE SITE MUST BE TAKEN PRIOR TO CONSTRUCTION AND REGULARLY UPDATED DURING THE CONSTRUCTION PHASE. 	CONTRACTOR, ECO	PRIOR TO CONSTRUCTION AND REGULARLY UPDATED
	<ul style="list-style-type: none"> • 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. 	CONTRACTOR, ECO	ONCE-OFF
	<ul style="list-style-type: none"> • ON COMPLETION OF WORKS, THE CONTRACTOR SHALL CLEAR AWAY AND REMOVE FROM THE SITE ALL CONSTRUCTION PAINT, SURPLUS MATERIALS, FOUNDATIONS, PLUMBING AND OTHER FIXTURES, RUBBISH AND TEMPORARY WORKS OF EVERY KIND. AREAS THUS CLEARED SHALL BE GRADED AND SCARIFIED TO RESTORE THE GROUND TO ITS ORIGINAL PROFILE AS NEAR AS PRACTICABLE BEFORE TOPSOIL PLACEMENT. 	CONTRACTOR, ECO	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> ALL PERSONS EMPLOYED BY THE CONTRACTOR OR HIS SUBCONTRACTORS SHALL ABIDE BY THE REQUIREMENTS OF THESE GENERAL ENVIRONMENTAL PROTECTION SPECIFICATIONS. ANY EMPLOYEES OF THE CONTRACTOR OR HIS SUBCONTRACTORS FOUND TO BE IN BREACH OF ANY OF THE GENERAL ENVIRONMENTAL PROTECTION SPECIFICATIONS MAY BE ORDERED BY THE ECO TO LEASE THE SITE FORTHWITH. THE ORDER MAY BE GIVEN ORALLY OR IN WRITING. CONFIRMATION OF AN ORAL ORDER WILL BE GIVEN AS SOON AS PRACTICABLE BUT LACK OF CONFIRMATION IN WRITING SHALL NOT BE A CAUSE FOR THE OFFENDER TO REMAIN ON SITE. NO EXTENSION OF TIME WILL BE GRANTED FOR ANY DELAY OR IMPEDIMENT TO THE CONTRACTOR BROUGHT ABOUT BY A PERSON ORDERED TO LEAVE THE SITE. 	CONTRACTOR, ECO	CONTINUOUS
	<ul style="list-style-type: none"> WORKFORCE OF THE APPOINTED CONTRACTORS MUST NOT BE ALLOWED TO OVERNIGHT ON THE PROPOSED SITE. 	CONTRACTOR, ECO	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> • MAXIMUM USE SHOULD BE MADE OF LOCAL MANPOWER AND MATERIALS, WITH TRAINING GIVEN WHERE APPROPRIATE. WHERE POSSIBLE LOCAL CONTRACTORS AND ENTREPRENEURS SHOULD BE EMPLOYED. • PROCUREMENT PROCEDURE AND CONTRACTS WITH BUILDERS SHOULD MAKE PROVISION FOR BEE AND PREFERENTIAL PROCUREMENT. • WHERE POSSIBLE AND FEASIBLE AND WITHOUT COMPROMISING TIME, COST AND QUALITY, THE PRINCIPALS OF LABOUR BASED TECHNOLOGIES SHOULD BE APPLIED DURING THE DEVELOPMENT PHASE OF THE PROPOSED DEVELOPMENT, NAMELY THE GOVERNMENT'S EXPANDED WORKS PROGRAMME'S PRINCIPALS. • THE PROMOTION OF LOCAL INVOLVEMENT IN PROVIDING AND SUPPLYING INPUT DURING THE CONSTRUCTION PHASE. • ADOPT PROCUREMENT POLICIES TO SUPPORT LOCAL SUPPLIERS OF MATERIALS, GOODS AND SERVICES. • ADOPT A POLICY TO INVOLVE LOCAL SMME'S. • APPLY BEE GUIDELINES DURING THE DEVELOPMENT AND OPERATIONAL AND MAINTENANCE STAGE OF THE PROPOSED DEVELOPMENT. • WHERE VIABLE, THE WORK MUST BE EXECUTED IN A LABOUR INTENSIVE MANNER TO CREATE AS MANY JOBS POSSIBLE. 	CONTRACTOR, ECO	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> CONSTRUCTION STAFF SHOULD BE EDUCATED AS TO THE NEED TO REFRAIN FROM DESTRUCTION OF ANIMALS AND PLANTS, AS WELL AS FROM INDISCRIMINATE DEFECATION, WASTE DISPOSAL AND/OR POLLUTION OF LOCAL SOIL AND WATER RESOURCES. 	CONTRACTOR, ECO	CONTINUOUS
	<ul style="list-style-type: none"> MACHINE/VEHICLE OPERATORS SHOULD RECEIVE CLEAR INSTRUCTIONS TO REMAIN WITHIN DEMARCATED ACCESS ROUTES AND OPERATIONS/CONSTRUCTION AREAS. PENALTIES SHOULD BE INTRODUCED IF NECESSARY TO ENSURE THAT THIS RULING IS ADHERED TO. 	CONTRACTOR, ECO, ELO	CONTINUOUS
	<ul style="list-style-type: none"> STAFF SHOULD BE INFORMED THAT ACCESS TO ADJACENT PROPERTIES IS STRICTLY OFF-LIMITS AND THAT IT WILL BE DEEMED A SERIOUS OFFENCE (I.E. NO FENCES SHOULD BE JUMPED AT ANY TIME AND NO GATES ARE TO BE OPENED WITHOUT PERMISSION FROM THE RELEVANT LANDOWNER). 	CONTRACTOR, ECO, ELO	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
EFFECTS OF THE CONSTRUCTION CAMP	<ul style="list-style-type: none"> • A SITE WILL BE MADE AVAILABLE BY THE DEVELOPER FOR THE CONSTRUCTION CAMP. 		
	<ul style="list-style-type: none"> • THE CONSTRUCTION CAMP MUST BE LOCATED ON THE DEMARCATED SITE. 	CONTRACTOR, ELO, MMC	ONCE-OFF
	<ul style="list-style-type: none"> • VEGETATION AND TREES TO BE RETAINED SHALL NOT BE DAMAGED OR FELLED. 	CONTRACTOR, ELO, MMC	ONCE-OFF
	<ul style="list-style-type: none"> • FIRES WILL ONLY BE ALLOWED IN FACILITIES ESPECIALLY CONSTRUCTED FOR THIS PURPOSE AND NO TREES MAY BE SPECIFICALLY FELLED FOR THE PURPOSE OF OBTAINING FIREWOOD. WOOD FOR THE FIRE MUST BE SUPPLIED BY THE CONTRACTOR AND NOT TAKEN FROM THE SURROUNDING AREA. 	CONTRACTOR, ELO, MMC	ONCE-OFF, MONITOR DAILY
	<ul style="list-style-type: none"> • SMOKING SHOULD BE PROHIBITED IN THE VICINITY OF FLAMMABLE SUBSTANCES. 	CONTRACTOR, ELO, MMC	DAILY
	<ul style="list-style-type: none"> • FIRES STARTED FOR COMFORT (WARMTH) SHOULD BE ACTIVELY DISCOURAGED BY THE CONTRACTOR DUE TO THE RISK OF FIRES AND ASSOCIATED RISK TO ADJACENT PROPERTY OWNER'S LANDS. 	CONTRACTOR, ELO, MMC	DAILY

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<p>TOILET FACILITIES, WASTE WATER AND REFUGE DISPOSAL:</p> <ul style="list-style-type: none"> • AN ADEQUATE NUMBER OF PORTABLE/CHEMICAL TOILETS SHALL BE SUPPLIED SHOULD THE EXISTING FACILITIES ON SITE BE INADEQUATE. • REGULAR INSPECTIONS SHALL BE CARRIED OUT TO ENSURE TOILETS ARE KEPT IN A HYGIENIC STATE. • TOILET PAPER SHALL BE SUPPLIED TO ALL TOILETS. • STAFF SHALL BE ADVISED TO USE THE PROVIDED TOILETS AT ALL TIMES. • REFUSE GENERATED FROM THE CONSTRUCTION AREA, STORAGE AREA OR ANY OTHER AREA SHALL BE COLLECTED AND PLACED IN A SUITABLE CONTAINER ON A DAILY BASIS. • A LITTER PATROL AROUND THE CONSTRUCTION CAMP IS TO TAKE PLACE TWICE A WEEK TO COLLECT ANY LITTER THAT MAY HAVE BEEN STREWN AROUND. • ONCE FULL AND ON A REGULAR BASIS, THE REFUSE CONTAINER SHALL BE EMPTIED AND THE CONTENTS DISPOSED OF AT A LICENSED COMMERCIAL FACILITY FOR THIS PURPOSE. • THE REFUSE CONTAINER IS TO BE COVERED AT ALL TIMES. • THE PILING OF ANY MATERIAL THAT COULD ROT AND RELEASE UNPLEASANT SMELLS INTO THE AIR WILL NOT BE ALLOWED. 	<p>CONTRACTOR, ELO, MMC</p> <p>ELO, MMC</p> <p>ELO, MMC</p> <p>ELO, MMC</p> <p>CONTRACTOR, ELO, MMC</p> <p>CONTRACTOR, ELO, MMC</p> <p>CONTRACTOR, MMC</p> <p>ELO, MMC</p> <p>CONTRACTOR, ELO, MMC</p>	<p>ONCE-OFF</p> <p>DAILY</p> <p>DAILY</p> <p>ONCE-OFF, MONITOR</p> <p>DAILY</p> <p>DAILY</p> <p>BI-WEEKLY</p> <p>WEEKLY</p> <p>DAILY</p>
	<p>PROVISION OF WATER:</p> <ul style="list-style-type: none"> • SUFFICIENT POTABLE WATER SHALL BE PROVIDED FOR DRINKING, AND ABLUTIONS. • GREAT CARE IS TO BE TAKEN THAT THE WATER SUPPLY IS NOT CONTAMINATED IN ANY WAY. 	<p>CONTRACTOR, MMC</p> <p>CONTRACTOR, ELO, MMC</p>	<p>ONCE-OFF</p> <p>MONITOR WEEKLY</p>

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	AIR POLLUTION: <ul style="list-style-type: none"> • IF NECESSARY, CONSTRUCTION CAMP SHALL BE WATERED TO CONTROL POSSIBLE DUST FALLOUT. • EXCESSIVE DUST CONDITIONS SHALL BE REPORTED TO THE ECO. • HEAVY SMOKE MAY NOT BE RELEASED INTO THE AIR. 	CONTRACTOR, ELO, MMC CONTRACTOR, ELO, MMC CONTRACTOR, ELO, MMC	AS REQUIRED AS REQUIRED AS REQUIRED
	NOISE: <ul style="list-style-type: none"> • NOISE LEVELS SHALL BE KEPT WITHIN ACCEPTABLE LIMITS, AND CONSTRUCTION CREW MUST ABIDE BY LOCAL BY-LAWS REGARDING NOISE. 	CONTRACTOR, ELO, MMC	DAILY
	SITE SECURITY: <ul style="list-style-type: none"> • THE AREA OF THE CONSTRUCTION CAMP SHALL BE DESIGNATED IN SUCH A MANNER THAT THE MOVEMENT OF SITE PERSONNEL IS LIMITED. • EXCEPT FOR THE 24-HOUR SECURITY GUARDS, NO WORKFORCE FOR EXTERNAL CONTRACTORS MAY STAY ON THE SITE DURING THE NIGHTS. 	CONTRACTOR, ECO, MMC CONTRACTOR, ELO, MMC	ONCE-OFF MONITOR DAILY
	VEHICLE AND EQUIPMENT FUELLING AND MAINTENANCE: <ul style="list-style-type: none"> • ALL FUELLING AND MAINTENANCE OF VEHICLES SHALL BE DONE OFF-SITE AT A RECOGNISED WORKSHOP. • IN THE EVENT OF A BREAKDOWN, IMMEDIATE STEPS SHALL BE TAKEN TO PREVENT ANY SPILLAGE. • IN THE EVENT OF SPILLAGE OF OIL OR FUEL, STEPS MUST BE TAKEN TO REMOVE HYDROCARBONS. 	CONTRACTOR, MMC CONTRACTOR, ELO, MMC CONTRACTOR, ELO, MMC	AS REQUIRED AS REQUIRED AS REQUIRED

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	CEMENT: <ul style="list-style-type: none"> • CEMENT MIXING SHALL ONLY BE DONE AT SPECIFICALLY SELECTED SITES. • CLEANING OF CEMENT MIXING AND HANDLING EQUIPMENT SHALL BE DONE USING PROPER CLEANING TRAYS. • ALL EMPTY CONTAINERS SHALL BE REMOVED FROM THE SITE FOR APPROPRIATE DISPOSAL AT A LICENSED COMMERCIAL FACILITY. • AY SPILLAGE, WHICH MAY OCCUR, WILL BE INVESTIGATED AND IMMEDIATE REMEDIAL ACTION SHALL BE TAKEN. 	CONTRACTOR, ELO, MMC CONTRACTOR, ELO, MMC CONTRACTOR, ELO, MMC CONTRACTOR, ELO, MMC	ONCE-OFF, MONITOR DAILY DAILY DAILY AS REQUIRED
	PROVISION OF STORAGE FOR CONSTRUCTION MATERIAL: <ul style="list-style-type: none"> • A SUITABLE AND SAFE AREA FOR STORAGE OF THE CONSTRUCTION MATERIAL IS TO BE PROVIDED. • IF THE AREA HAS TO BE CLEARED OF TREES AND/OR BUSHES, CARE MUST BE TAKEN TO LEAVE AS MUCH GRASS COVERING AS POSSIBLE TO PREVENT EROSION. 	DEVELOPER, CONTRACTOR, ECO, MMC	ONCE OFF
	PROVISION OF STORAGE OR FACILITIES FOR DANGEROUS AND TOXIC MATERIALS: <ul style="list-style-type: none"> • MATERIALS SUCH AS FUEL, OIL, PAINT, HERBICIDE AND INSECTICIDES SHALL BE STORED IN BERMED AREAS OR UNDER LOCK AND KEY, AS APPROPRIATE, IN WELL-VENTILATED AREAS. • SUFFICIENT CARE MUST BE TAKEN WHEN HANDLING THESE MATERIALS TO PREVENT POLLUTION. • IN THE CASE OF POLLUTION OF ANY SURFACE OR GROUNDWATER, THE REGIONAL REPRESENTATIVE OF THE DEPARTMENT OF WATER AFFAIRS MUST BE INFORMED IMMEDIATELY. 	CONTRACTOR, ECO, MMC CONTRACTOR, ELO, MMC CONTRACTOR, ECO, MMC	ONCE-OFF, MONITOR DAILY AS REQUIRED AS REQUIRED

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
EFFECTS OF THE CONSTRUCTION SITE	REHABILITATION:		
	<ul style="list-style-type: none"> ONCE CONSTRUCTION IS COMPLETED, ALL REDUNDANT INFRASTRUCTURE, WASTE AND CONSTRUCTION MATERIALS SHOULD BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF IN AN APPROPRIATE MANNER, I.E. AT A REGISTERED SITE. THE REHABILITATION OF THE SITE MUST OCCUR IMMEDIATELY, AFTER THE CONSTRUCTION PHASE AND SHOULD NOT BE LEFT UNTIL THE END OF THE PROJECT. 	CONTRACTOR, ELO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> RE-VEGETATE ALL DISTURBED AREAS AS SOON AS POSSIBLE BY PLANTING SUITABLE HARDY INDIGENOUS VEGETATION THAT REQUIRES LOW MAINTENANCE. AREAS COMPACTED BY VEHICLES DURING CONSTRUCTION MAY HAVE TO BE SCARIFIED (RIPPED) TO ALLOW PENETRATION OF PLANT ROOTS AND THE RE-GROWTH OF NATURAL VEGETATION. IF NECESSARY AREA MUST BE FERTILISED AND SEEDED WITH AN INDIGENOUS SEED MIX. 	CONTRACTOR, ECO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> STOCKPILED TOPSOIL SHOULD BE USED AS THE FINAL COVER FOR ALL DISTURBED AREAS WHERE RE-VEGETATION IS REQUIRED. 	CONTRACTOR, ELO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> WATERING MUST TAKE PLACE ON A WEEKLY BASIS UNTIL VEGETATION COVER IS SUFFICIENT TO CONTROL EROSION. 	CONTRACTOR, ELO, MMC	WEEKLY
	<ul style="list-style-type: none"> VEGETATION MUST BE IMMEDIATELY REPLACED IN AREAS WHERE PLANTS HAVE FAILED TO ESTABLISH THEMSELVES. STRICT RECORDS OF MONITORING EXERCISES MUST BE KEPT. 	CONTRACTOR, ELO, MMC	AS REQUIRED

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> CONSTRUCTION ACTIVITIES SHOULD PREFERABLY TAKE PLACE DURING THE DRY WINTER MONTHS. RECOMMENDED MITIGATION MEASURES FOR EROSION COULD INCLUDE THAT DURING CONSTRUCTION, SITE PREPARATION, VEGETATION REMOVAL AND CONSTRUCTION MUST TAKE PLACE SIMULTANEOUSLY, AND IN STAGES, TO ENSURE THAT NO LARGE TRACTS OF LAND ARE LEFT EXPOSED. 	DEVELOPER, CONTRACTOR	ONCE-OFF
EROSION, SEDIMENTATION AND FLOODING	<ul style="list-style-type: none"> PROVIDE PERMEABLE SURFACES AND ADDRESS INCREASED RUNOFF VOLUMES AT SOURCE. ATTENUATE FLOWS WITHIN THE DRAINAGE SYSTEM TO REDUCE RUNOFF VELOCITY. 	CONTRACTOR, MMC, CE	ONCE OFF
	<ul style="list-style-type: none"> IN ORDER TO SUCCESSFULLY AVOID ANY MAJOR IMPACTS CAUSED BY EROSION, CONSTRUCTION DURING THE RAINY SEASON SHOULD BE AVOIDED. 	DEVELOPER, MMC, CE	ONCE OFF
	<ul style="list-style-type: none"> MEASURES TO PREVENT EROSION SUCH AS BERMS, GABIONS, AND MATS MUST ALSO BE INSTALLED WHERE REQUIRED. 	CONTRACTOR, ELO, MMC	DAILY
	<ul style="list-style-type: none"> VEGETATION CLEARANCE MUST BE KEPT TO A MINIMUM AND STOCKPILES MUST BE COVERED IN EXCESS WINDY CONDITIONS. 	CONTRACTOR, ELO, MMC	DAILY

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
EROSION, SEDIMENTATION AND FLOODING	<ul style="list-style-type: none"> ALL TOPSOIL REMOVED FROM THE AREA DURING SITE PREPARATION AND CONSTRUCTION MUST BE STOCKPILED FOR USE DURING REHABILITATION. TOPSOIL IS CONSIDERED TO BE THE TOP 150 - 300 MM OF THE NATURAL SOIL SURFACE AND INCLUDES GRASS, ROOTS AND ORGANIC MATTER. THE AREAS TO BE CLEARED OF TOPSOIL SHOULD BE ALL AREAS, WHICH WILL BE COVERED BY PAVING, ROADS, STRUCTURES AND MATERIAL STORAGE. THE STOCKPILES SHOULD NOT BE HIGHER THAN 2M AND IF THEY REMAIN UNDISTURBED FOR A MONTH OR MORE THEY MUST BE TREATED FOR DUST SUPPRESSION AND BE RE-VEGETATED. 	CONTRACTOR, ELO, MMC	DAILY
	<ul style="list-style-type: none"> NO STOCKPILES OR CONSTRUCTION MATERIALS MAY BE STORED OR PLACED WITHIN ANY DRAINAGE LINE ON SITE. 	CONTRACTOR, ELO, MMC	DAILY
	<ul style="list-style-type: none"> TO PREVENT EROSION, MATERIAL STOCKPILED FOR LONGER PERIODS SHOULD BE RETAINED IN A BERMED AREA. 	CONTRACTOR, ELO, MMC	MONITOR WEEKLY
	<ul style="list-style-type: none"> ALL TRENCHES AND EXCAVATION WORKS MUST BE PROPERLY BACKFILLED AND COMPACTED ACCORDING TO SPECIFICATIONS GIVEN IN SUB-CLAUSE 5.2.4. OF SABS 1200DA. 	CONTRACTOR, ELO	AS REQUIRED
	<ul style="list-style-type: none"> THE CONTRACTOR MUST REHABILITATE THE CONSTRUCTION CAMP ONCE CONSTRUCTION ACTIVITIES HAVE TERMINATED. COMPACTED AREAS WILL BE RIPPED AND MULCHED IN ORDER TO ENSURE RECOVERY OF THE NATURAL VEGETATION COVER. 	CONTRACTOR, ELO, MMC	END OF CONSTRUCTION PHASE

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> WHERE NECESSARY, A SUITABLE MIXTURE OF INDIGENOUS GRASS SEED SHALL BE USED TO RESEED DAMAGED AREAS. ALL OPEN SPACE AREAS MUST BE RE-VEGETATED WITH INDIGENOUS AND ENDEMIC SPECIES. 	CONTRACTOR, ELO	ONCE-OFF
	<ul style="list-style-type: none"> WHERE NECESSARY DAMAGED AREAS SHALL BE CORDONED OFF TO ENHANCE REHABILITATION. 	CONTRACTOR, ELO, MMC	ONCE-OFF
	<ul style="list-style-type: none"> THE STORM WATER DRAINAGE AND SEWERAGE SYSTEM MUST INCORPORATE MEASURES TO ENSURE WATER TIGHTNESS OF CONDUITS. 	EC	ONCE-OFF
	<ul style="list-style-type: none"> CONSTRUCTION EQUIPMENT AND MACHINERY MUST BE KEPT IN A DEMARCATED AREA. THE LOSS OF OILS AND FUEL ONTO THE GROUND MUST BE LIMITED AND CONTAINED. WHERE OILS HAVE LEAKED ONTO THE SOIL, THIS SOIL MUST BE REMOVED AND DISPOSED OF AT AN APPROVED DUMPING SITE AT THE END OF THE CONSTRUCTION PHASE OR AS REQUIRED BY THE ECO. 	CONTRACTOR, ECO, MMC	MONITOR WEEKLY
WATER CONSUMPTION	<ul style="list-style-type: none"> APPROVAL MUST BE OBTAINED FROM DWS FOR ANY ACTIVITIES THAT REQUIRE AUTHORISATION IN TERMS OF SECTION 39 OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 OF 1998). AUTHORIZATIONS IF NEEDED MUST HAVE BEEN OBTAINED FROM DWS, WERE ANY ACTIVITIES WILL TAKE PLACE WITHIN A HORIZONTAL DISTANCE OF 100M FROM ANY WATERCOURSE. CONSTRUCTION MAY NOT COMMENCE WITHOUT THESE AUTHORIZATIONS FROM DWS BEING IN PLACE. 	CONTRACTOR, ECO, MMC	ONCE-OFF

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> WATER CONSUMPTION FOR DOMESTIC PURPOSES IS A GIVEN, BUT CARE MUST BE TAKEN NOT TO WASTE ANY WATER. IN THE HOUSES, HALF FLUSH SYSTEMS IN THE TOILETS AS WELL AS WATER AERATORS IN ALL TAPS MUST BE INSTALLED TO REDUCE WATER CONSUMPTION. ALL THESE CRITERIA MUST FIT INTO A SET OFF RULES FOR THE USE OF WATER BY ALL PROPERTY OWNERS AT THE DEVELOPMENT. 	DEVELOPER, CONTRACTOR, ECO, MMC	ONCE-OFF
	<ul style="list-style-type: none"> POSSIBLE POLLUTION FROM ANY STORAGE TANKS AND/OR ANY OTHER CONTAMINANT SPILLS AND/OR LEAKAGES MUST BE REPORTED TO DWS WITHIN 24 HOURS OF SPILLAGE/LEAKAGE. 	DEVELOPER, ECO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> A SUFFICIENT NUMBER OF PORTABLE CHEMICAL TOILETS SHOULD BE PLACED WITHIN EASY ACCESS OF THE WORKFORCE, TO ENSURE THAT THE SURROUNDING ENVIRONMENT IS NOT USED INSTEAD. THESE SHOULD BE KEPT IN A HYGIENIC STATE WITH TOILET PAPER SUPPLIED FOR THE WORKFORCE. PLACEMENT OF TOILETS SHOULD AVOID THE POSSIBILITY OF THE AREA SURROUNDING THE TOILET BECOMING FLOODED. THE CONTRACTOR MUST ALSO PROVIDE SUFFICIENT POTABLE WATER AND WASHING FACILITIES ON SITE AT ALL TIMES TO PREVENT A SITUATION WHERE CONSTRUCTION WORKERS HAVE TO RESORT TO FETCHING WATER FROM NATURAL WATER COURSES OR WASHING IN WATER COURSES. 	CONTRACTOR, ELO, MMC	ONCE-OFF

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> STORAGE OF POTENTIALLY HAZARDOUS MATERIALS SHOULD BE ABOVE THE 1:100-YEAR FLOOD LINE, OR AS AGREED WITH THE ECO. THESE MATERIALS INCLUDE FUEL, OIL, CEMENT, BITUMEN, ETC. THE CONTAINER SHOULD BE STORED ON A CONCRETE BUNDED PLATFORM THAT IS WELL VENTILATED. 	CONTRACTOR, ECO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> UNDERGROUND SERVICES SHOULD BE DESIGNED IN SUCH A WAY SO AS TO REQUIRE MINIMUM MAINTENANCE TO AVOID DISTURBANCE OF THE UNDERGROUND ENVIRONMENT. 	CE	ONCE OFF
	<ul style="list-style-type: none"> BULK FUEL STORAGE TANKS ON THE SITE SHALL HAVE BUNDING TO HOLD AT LEAST 110% OF THE VOLUME OF THE TANKS AND SHALL BE LOCATED IN A PORTION OF THE CONSTRUCTION CAMP WHERE THEY DO NOT POSE A HIGH RISK IN TERMS OF WATER POLLUTION (I.E. THEY MUST BE LOCATED AWAY FROM WATER COURSES). BULK FUEL STORAGE TANKS SHALL BE PLACED SO THAT THEY ARE OUT OF THE WAY OF TRAFFIC, SO THAT THE RISK OF THE TANKS BEING RUPTURED OR DAMAGED BY VEHICLES IS MINIMISED. 	CONTRACTOR, ECO, MMC	ONCE-OFF
	<ul style="list-style-type: none"> SOLID WASTE MUST BE KEPT IN ADEQUATE CONTAINERS AND DISPOSED OF ON A WEEKLY BASIS AT A LICENSED WASTE DISPOSAL LANDFILL SITE. ANY BUILDING RUBBLE MUST BE REMOVED TO A LICENSED DISPOSAL SITE AFTER CONSTRUCTION. 	CONTRACTOR, ELO, MMC	ONCE-OFF

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> A DEDICATED STORAGE CONTAINER SHALL BE USED TO ACCOMMODATE CHEMICALS SUCH AS FUEL, OIL, PAINT, HERBICIDE AND INSECTICIDES, AS APPROPRIATE. STORAGE OF POTENTIALLY HAZARDOUS MATERIALS SHOULD BE ABOVE THE 1:100-YEAR FLOOD LINE, OR AS AGREED WITH THE ECO. THESE MATERIALS INCLUDE FUEL, OIL, CEMENT, BITUMEN, ETC. THE CONTAINER SHOULD BE STORED ON A CONCRETE BUNDED PLATFORM. CONCRETE SHALL BE MIXED ON MIXING TRAYS ONLY, NOT ON EXPOSED SOIL. CONCRETE SHALL BE MIXED ONLY IN AREAS, WHICH HAVE BEEN SPECIALLY DEMARCATED FOR THIS PURPOSE. ALL CONCRETE THAT IS SPILLED OUTSIDE THESE AREAS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR AND TAKEN TO AN APPROVED DUMPSITE. AFTER ALL THE CONCRETE MIXING IS COMPLETE ALL WASTE CONCRETE SHALL BE REMOVED FROM THE BATCHING AREA AND DISPOSED OF AT AN APPROVED DUMPSITE. STORMWATER SHALL NOT BE ALLOWED TO FLOW THROUGH THE BATCHING AREA. CEMENT SEDIMENT SHALL BE REMOVED FROM TIME TO TIME AND DISPOSED OF IN A MANNER AS INSTRUCTED BY THE SITE ENGINEER. 	CONTRACTOR, ELO, MMC	AS REQUIRED

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> SPILL KITS MUST BE AVAILABLE IN ALL VEHICLES THAT TRANSPORT HYDROCARBONS FOR DISPENSING TO OTHER VEHICLES ON THE CONSTRUCTION SITE. THE DISPENSING DEVICES (PUMP HEADS) MUST BE COMPATIBLE WITH THE VEHICLES TO WHICH THEY ARE DISPENSING. IN ADDITION THE DISPENSING DEVICES MUST BE FITTED WITH THE NECESSARY VALVES / APPARATUS THAT WILL ENSURE THAT THE NOZZLES DO NOT DRIP FUEL AFTER PUMPING HAS STOPPED. REFUELLING SHOULD TAKE PLACE IN A CENTRALLY LOCATED AREA AND MUST COMPLY WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT NO. 85 OF 1993). 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> ALL CONSTRUCTION VEHICLES AND PLANT OPERATING ON SITE SHOULD BE REGULARLY SERVICED IN ORDER TO PREVENT THE POTENTIAL FOR OIL AND FUEL LEAKS TO OCCUR. DRIP TRAYS SHOULD BE PLACED UNDER VEHICLES THAT STAND WITHIN THE CONTRACTOR'S YARD FOR EXTENDED PERIODS OF TIME. VEHICLES SHOULD NOT BE SERVICED OUT ON TERRAIN, BUT ONLY IN DESIGNATED WORKSHOPS ESTABLISHED FOR THAT PURPOSE THAT ARE EQUIPPED WITH OIL WATER SEPARATORS AND SUMPS FOR THE COLLECTION OF CONTAMINATED MATERIALS. 	CONTRACTOR, ELO, MMC	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> THE CONTRACTOR MUST HAVE A BASIC SPILL CONTROL KIT AVAILABLE AT EACH 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. THE CONTRACTOR SHALL ENSURE THAT AT LEAST THE SITE FOREMAN AND ELO HAVE RECEIVED FORMAL TRAINING IN THE USE OF THE SPILL CONTROL KIT. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> IN THE CASE OF ANY WATER POLLUTION INCIDENT, THE REGIONAL REPRESENTATIVE OF THE DEPARTMENT OF WATER AFFAIRS MUST BE INFORMED IMMEDIATELY. ALL CONTAMINATED SOILS SHOULD BE IMMEDIATELY REMOVED AND PLACED WITHIN A HAZARDOUS WASTE SKIP LOCATED ON SITE, FOR END DISPOSAL AT AN APPROPRIATELY LICENSED HAZARDOUS WASTE DISPOSAL SITE BY A REPUTABLE WASTE DISPOSAL CONTRACTOR. 	ECO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> WHERE THE USE OF FERTILIZERS IS WARRANTED, SLOW-RELEASE NATURAL ORGANIC FERTILIZERS SHOULD BE USED SPARINGLY, WITH APPLICATION RATES AS LOW AS POSSIBLE. RATHER MAKE USE OF ENVIRONMENTALLY FRIENDLY HERBICIDES AND INSECTICIDES WITH FAST ENVIRONMENTAL BREAKDOWN RATES. THE APPLICATION OF FERTILISERS SHOULD BE AVOIDED WHEN HEAVY RAINFALL IS FORECAST AND SHOULD BE APPLIED ONLY UNDER CALM WIND CONDITIONS. 	CONTRACTOR, ELO, MMC	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
STORMWATER	<ul style="list-style-type: none"> STORM WATER MANAGEMENT SYSTEMS AND SERVITUDES MUST BE WELL MAINTAINED. NO CONSTRUCTION MATERIAL ETC WILL BE ALLOWED IN THESE AREAS. STORMWATER SHALL NOT BE ALLOWED TO FLOW THROUGH THE BATCHING AREA. CEMENT SEDIMENT SHALL BE REMOVED FROM TIME TO TIME AND DISPOSED OF IN A MANNER AS INSTRUCTED BY THE SITE ENGINEER. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> OIL TRAPS ETC SHOULD BE INSTALLED AT STRATEGIC POSITIONS TO INTERCEPT AND COLLECT THE POSSIBLE DIRT. 	CE, CONTRACTOR, MMC	ONCE-OFF
	<ul style="list-style-type: none"> STORMWATER AT THE CONSTRUCTION CAMPS MUST BE MANAGED SO AS TO REDUCE POTENTIAL SILT LOADS IN STORMWATER RUN-OFF. MEASURES MUST BE IMPLEMENTED TO DISTRIBUTE STORM WATER AS EVENLY AS POSSIBLE TO AVOID POINT SOURCES OF EROSION. 	CE, CONTRACTOR, MMC	ONCE-OFF
	<ul style="list-style-type: none"> APPROPRIATE FLOW DIVERSION AND EROSION CONTROL STRUCTURES I.E. EARTH EMBANKMENTS MUST BE PUT IN PLACE WHERE SOIL MAY BE EXPOSED TO HIGH LEVELS OF EROSION DUE TO STEEP SLOPES, SOIL STRUCTURE, ETC SHOULD A STORM DISPLACE THE TEMPORARY EARTH EMBANKMENTS OR OTHER EROSION CONTROL STRUCTURES, A VISUAL INSPECTION OF THE DRAINAGE LINE MUST BE MADE AND ANY DAMAGE BE RECORDED. ANY DAMAGE AND LOSS OF SOIL RESULTING FROM A STORM IS TO BE REMEDIED IMMEDIATELY. SHOULD THE WALLS COLLAPSE DUE TO CONSTRUCTION ERROR, THE CONTRACTOR IS TO FUND THE REMEDIATION PROCESS. 	CONTRACTOR, ELO, MMC	AS REQUIRED

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
GEOLOGY	<ul style="list-style-type: none"> FOUNDATION DESIGN AND CONSTRUCTION MUST BE DONE AS PER THE RECOMMENDATIONS STIPULATED IN THE GEOTECHNICAL INVESTIGATION STUDY (ATTACHED TO THE BAR). 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> ALTHOUGH PERCHED WATER WAS NOT NOTED DURING THE FIELD WORK IT MUST BE ANTICIPATED THAT LOCALISED GROUND WATER SEEPAGE COULD BE ENCOUNTERED IN ALL ZONES AFTER PERIODS OF SUSTAINED RAINFALL. IT IS THEREFORE RECOMMENDED THAT STANDARD DAMP PROOFING OF STRUCTURES IS REQUIRED, AND ALL DOWN PIPES AND SURFACE STORMWATER DRAINAGE MEASURES SHOULD BE CAREFULLY CONSIDERED. 	DEVELOPER, CONTRACTOR, CE	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<p>ALL LAYOUT PLANS FOR THIS DEVELOPMENT MUST BE REVIEWED ON AN ONGOING BASIS AND FINALLY MUST BE CERTIFIED BY THE QUALIFIED GEOLOGIST BEING IN ACCORDANCE WITH THE FINDINGS DETAILED IN THE GEOTECHNICAL REPORT. A COMPETENT GEOLOGIST MUST BE INVITED TO INSPECT EXCAVATION WORKS FOR SERVICES DURING THE DEVELOPMENT OF THIS SITE.</p>	<p>ECO, CONTRACTOR, GEOLOGIST</p>	<p>CONTINUOUS</p>

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
MANAGEMENT OF TOPSOIL	<ul style="list-style-type: none"> • TOPSOIL SHALL BE STRIPPED FROM ALL AREAS THAT ARE TO BE UTILIZED DURING THE CONSTRUCTION PERIOD AND WHERE PERMANENT STRUCTURES AND ACCESS IS REQUIRED. THESE AREAS WILL INCLUDE COMPRISING THE PERMANENT WORKS, PIPELINE TRENCHES, STOCKPILES, ACCESS ROADS, CONSTRUCTION CAMPS AND LAYDOWN AREAS. TOPSOIL SHALL BE STRIPPED AFTER CLEARING OF WOODY VEGETATION AND BEFORE EXCAVATION OR CONSTRUCTION COMMENCES. • TOPSOIL SHALL BE DEEMED TO BE THE TOP LAYER OF SOIL CONTAINING ORGANIC MATERIAL, NUTRIENTS AND PLANT AND GRASS SEED. FOR THIS REASONS IT IS AN EXTREMELY VALUABLE RESOURCE FOR THE REHABILITATION AND VEGETATION OF DISTURBED AREAS. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> • IT IS RECOMMENDED THAT ALL SOIL EXCAVATED DURING TRENCHING BE STOCKPILED IN LAYERS AND PROTECTED BY BERMS. IT IS ALSO IMPERATIVE THAT THE TOPSOIL LAYER BE RETAINED AND USED IN FACILITATING THE REINSTATEMENT OF INDIGENOUS VEGETATION. SOIL EXCAVATED DURING TRENCHING SHOULD BE STOCKPILED IN LAYERS AND REPLACED IN THE SAME ORDER WHEN BACKFILLING. 	CONTRACTOR, ELO, MMC	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> TRENCHES FOR PIPES OR CABLES MUST WHERE POSSIBLE BE DUG NEXT TO ROADS WHERE IT WILL HAVE THE SMALLEST IMPACT. TRENCHES SHOULD BE PLANNED IN SUCH A WAY THAT NO LARGE TREES SHOULD BE REMOVED. ANY TRENCHES THAT ARE DUG FOR THE SUPPLY OF SERVICES TO THE STANDS MUST BE FILLED UP AND COMPACTED WELL AND SLIGHTLY HIGHER THAN THE AREAS AROUND IT. THIS WOULD ALLOW FOR SETTLING OF THE SOIL WITHOUT TRENCH FORMING AGAIN. NEXT TO THE ROADS THIS TRENCH AREAS CAN BE PACKED WITH ROCKS TO PROVIDE A SLOW DOWN AREA FOR RUNNING WATER AND TO PREVENT EROSION DUE TO STORM WATER RUN DOWN. 	CONTRACTOR, ELO, MMC	
	<ul style="list-style-type: none"> NO STORAGE OR STOCKPIILING OF ANY SOILS OR CONSTRUCTION MATERIALS SHOULD TAKE PLACE IN AREAS WHERE IT MAY BE WASHED INTO WATER COURSES. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> AT THE BEGINNING OF THE CONSTRUCTION PHASE, TOPSOIL REMOVED FOR VEGETATION CLEARANCE MUST BE STRIPPED TO A MINIMUM DEPTH OF 150 MM AND STOCKPILED ON THE DEMARCATED TOPSOIL STOCKPILE AREAS. 	CONTRACTOR, ELO, MMC	ONCE-OFF
	<ul style="list-style-type: none"> TEMPORARY SOIL STOCKPILES SHOULD NOT BE HIGHER THAN 2 M (TO AVOID COMPACTION) AND THE SLOPES OF SOIL STOCKPILES SHALL NOT BE STEEPER THAN 1 VERTICAL TO 1,5 M HORIZONTAL. STOCKPILES MUST NOT BE ALLOWED WITHIN THE FLOODLINE AREAS. 	CONTRACTOR, ELO, MMC	ONCE-OFF
	<ul style="list-style-type: none"> NO VEHICLES SHALL BE ALLOWED ACCESS ONTO THE STOCKPILES AFTER THE TOPSOIL HAS BEEN PLACED. 	CONTRACTOR, ELO, MMC	DAILY

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> ONCE THE CONSTRUCTION ACTIVITIES HAVE TERMINATED, REHABILITATION OF ALL THE DISTURBED AND COMPACTED AREAS SHALL OCCUR BY RIPPING, TOPSOILING AND MULCHING THESE AREAS. 	CONTRACTOR, ELO, MMC	ONCE-OFF
	<ul style="list-style-type: none"> RIPPING SHALL BE DONE TO A DEPTH OF 250 MM IN TWO DIRECTIONS AT RIGHT ANGLES. TOPSOIL SHALL BE PLACED IN THE SAME SOIL ZONE FROM WHICH IT HAD BEEN STRIPPED. 	CONTRACTOR, ELO, MMC	ONCE-OFF
DESTRUCTION OF VEGETATION AND SENSITIVE AREAS ON THE SITE	<ul style="list-style-type: none"> A SEARCH AND RESCUE OPERATION MUST BE CONDUCTED BEFORE ANY CONSTRUCTION ACTIVITIES COMMENCE IN ORDER TO COLLECT ALL PROTECTED SPECIES WHICH CAN BE TRANSLOCATED TO A SUITABLE HABITAT NEARBY. 	CONTRACTOR, ELO, MMC, FLORA SPECIALIST	ONCE-OFF
	<ul style="list-style-type: none"> NO DUMPING OF BUILDING RUBBLE IN THE SURROUNDING NATURAL AREAS SHOULD BE ALLOWED. IF IT IS REQUIRED TO STORE RUBBLE TEMPORARILY IT SHOULD BE DONE IN AN ALREADY DISTURBED AREA SUCH AS THE PLOUGHED FIELDS. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> AREAS OF THE NATURAL VEGETATION THAT IS TO BE RETAINED (IF ANY) MUST BE DEMARCATED AND CORDONED OFF DURING CONSTRUCTION, PREFERABLY USING A TEMPORARY FENCE. 	CONTRACTOR, ELO, MMC,	ONCE-OFF, INSPECT DAILY
	<ul style="list-style-type: none"> TRENCHES FOR PIPES OR CABLES MUST WHERE POSSIBLE BE DUG NEXT TO ROADS WHERE IT WILL HAVE THE SMALLEST IMPACT. TRENCHES SHOULD BE PLANNED IN SUCH A WAY THAT NO LARGE TREES SHOULD BE REMOVED. 	CONTRACTOR, ELO, MMC	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> • NO FIRES MAY BE IGNITED WITH THE INTENT TO DESTROY THE FLORA ON SITE AND SURROUNDING PROPERTIES. THE CLEARED VEGETATION SHOULD BE COMPOSTED WHERE POSSIBLE TO PRESERVE THE NUTRIENTS IN IT AND RETURN IT TO THE SOIL. THIS VEGETATION MUST NOT BE BURNT AS IT CAUSES A LOSS OF NUTRIENTS AND ORGANIC MATERIAL. IT ALSO CAUSES AIR POLLUTION AND A FIRE HAZARD. 	CONTRACTOR, ELO, MMC	ONCE-OFF, INSPECT DAILY
	<ul style="list-style-type: none"> • THE USE OF INDIGENOUS VEGETATION SHOULD BE OPTIMISED IN AND DURING THE LANDSCAPED AREAS AND COMMUNAL OPEN SPACES. INDIGENOUS TREES AND SHRUBS MUST BE PLANTED ALONG THE ROADS AND IN THE OPEN AREAS. • INDIGENOUS PLANTS SHOULD BE USED FOR ORNAMENTAL OR UTILITARIAN PURPOSES IN GARDENS AND AS VISUAL SCREENS. ONLY LOCAL INDIGENOUS TREES AND SHRUBS SHOULD BE PLANTED IN THE OPEN AREAS AND ALONG THE ROADS. • AN ECO-CONTROL OFFICER SHOULD BE APPOINTED TO MONITOR AND ADVISE WITH THE PLANTING OF INDIGENOUS TREES AND SHRUBS ALONG THE ROADS AND OPEN AREAS. 	DEVELOPER, LANDSCAPE CONTRACTOR, ECO, MMC	ONCE-OFF

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> • INVASIVE EXOTIC PLANTS AND WEEDS MUST BE ERADICATED ON THE PROPERTY. THIS MUST BE ACCOMPANIED BY A LONG-TERM MONITORING AND FOLLOW-UP CLEARING PROGRAM. REMOVAL OF EXOTIC PLANT SPECIES ON THE SITE CAN BE SEEN AS A POSITIVE IMPACT. THE REMOVAL OF TREES SHOULD BE RESTRICTED TO THE MINIMUM. THE PLACEMENT OF THE BUILDINGS MUST BE DONE IN SUCH A WAY THAT NO LARGE INDIGENOUS TREES ARE UNNECESSARILY REMOVED. • ENSURE THAT NO FOREIGN MATERIAL IS BROUGHT (E.G. SEED OR INVASIVE ALIEN PLANTS) ONTO THE SITE. 	CONTRACTOR, ECO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> • EACH INDIVIDUAL BUILDING MIGHT REQUIRE ITS OWN BASIC CONSTRUCTION SITE. THESE SITES MUST BE DEMARCATED. 	CONTRACTOR, ELO, MMC	ONCE-OFF, MONITOR WEEKLY
	<ul style="list-style-type: none"> • ENTRY POINTS AND ACCESS ROUTES TO THE SITE MUST BE CLEARLY MARKED AND TRAFFIC LIMITED TO THOSE AREAS AS FAR AS POSSIBLE. 	CONTRACTOR, ELO, MMC	ONCE-OFF, MONITOR CONTINUOUSLY
	<ul style="list-style-type: none"> • LITTER ACCUMULATING ON THE SITE MUST BE STORED IN CLOSED CONTAINERS, COLLECTED AND DISPOSED OF AT AN APPROVED WASTE DISPOSAL FACILITY. 	CONTRACTOR, ELO, MMC	ONCE-OFF, MONITOR WEEKLY
	<ul style="list-style-type: none"> • INSTRUCTIONS PROHIBITING UNAUTHORISED ACCESS OF PEOPLE AND PARTICULARLY VEHICLES OF ANY KIND INTO AREAS DEEMED SENSITIVE MUST BE POSTED. 	CONTRACTOR, ELO, MMC	ONCE-OFF, MONITOR CONTINUOUSLY
	<ul style="list-style-type: none"> • DISTURBED AREAS, WHICH, ARE TO REMAIN FREE OF INFRASTRUCTURE SHOULD BE REHABILITATED TO A STATE COMPARABLE TO THE SURROUNDING VEGETATION. 	CONTRACTOR, ECO, MMC	ONCE-OFF, MONITOR CONTINUOUSLY

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> NO COLLECTION OF INDIGENOUS PLANTS MAY BE ALLOWED ON THE PROPERTY. EMPLOYEES SHOULD UNDERGO ENVIRONMENTAL AWARENESS TRAINING AND BE SENSITIZED TO THE NEED TO AVOID DISTURBANCE TO THE INDIGENOUS VEGETATION ON THE PROPERTY. 	CONTRACTOR, ECO, MMC	CONTINUOUS
IMPACT ON ANIMAL LIVE	<ul style="list-style-type: none"> IT IS RECOMMENDED THAT A SEARCH AND RESCUE OPERATION BE CONDUCTED PRIOR TO CONSTRUCTION. FAUNA SHOULD BE RELOCATED TO MORE SUITABLE SURROUNDING HABITATS. 	CONTRACTOR, ECO, ELO MMC	ONCE-OFF, MONITOR CONTINUOUSLY
	<ul style="list-style-type: none"> ALL ACTIVITIES ON SITE MUST COMPLY WITH THE REGULATIONS OF THE ANIMAL PROTECTION ACT, 1962 (ACT NO.71 OF 1962). 	CONTRACTOR, ECO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> UNDER NO CIRCUMSTANCES SHALL ANY ANIMALS (WILDLIFE AND DOMESTIC ANIMALS) BE HANDLED, REMOVED, KILLED OR INTERFERED WITH BY THE CONTRACTOR, HIS EMPLOYEES, HIS SUB-CONTRACTORS OR HIS SUB-CONTRACTORS' EMPLOYEES. STRICT RULES AND PENALTIES AGAINST THE SNARING/KILLING/CATCHING OF ANY ANIMALS FOR ALL CONSTRUCTION WORKERS. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> SHOULD ANY FOSSORIAL (BURROWING) SPECIES (ESPECIALLY INSECTIVORES OR SNAKES) BE KILLED AND RECOVERED DURING THE CONSTRUCTION PHASE, THESE SHOULD BE ADEQUATELY PRESERVED AS VOUCHER SPECIMENS. THESE SPECIMENS MAY CONTRIBUTE TOWARDS BIOGEOGRAPHY PATTERNS AND ANIMAL SYSTEMATICS. 	CONTRACTOR, ELO, MMC	AS REQUIRED

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> IF ANY RED DATA SPECIES IS FOUND DURING THE CONSTRUCTION PHASE, THIS SPECIES MUST BE RELOCATED TO THE NEAREST CONSERVATION AREA OF NATURAL OPEN SPACE WITH SUITABLE HABITAT FOR THE PARTICULAR SPECIES TO CONTINUE ITS LIFE HISTORY. 	CONTRACTOR, ELO, ECO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> SHOULD SURFACE WATER IN THE SURROUNDING AREA BE POLLUTED, AND FAUNA AND INDIGENOUS FLORA SHOW SIGNS OF DETERIORATION OR DEATH, SPECIALIST HYDROLOGICAL OR ECOLOGICAL ADVICE MUST BE SOUGHT FOR THE APPROPRIATE TREATMENT AND REMEDIAL PROCEDURES TO BE FOLLOWED. THE REQUIREMENTS FOR SUCH INPUT SHALL BE AGREED WITH THE ENGINEER. IF LIABILITY IS FOUND TO REST WITH THE CONTRACTOR, THE COSTS OF CONTAINMENT AND REHABILITATION SHALL BE ON THE CONTRACTOR'S ACCOUNT, INCLUDING THE COSTS OF SPECIALIST INPUT. 	CONTRACTOR, ECO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> NO FIRES ARE TO BE IGNITED WITH THE INTENT TO DESTROY THE FLORA OR WITH THE INTENT TO DESTROY OR FLUSH OUT ANY FAUNA PRESENT ON SITE AND THE SURROUNDS. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> NO INSECTICIDES OR ANY FORM OF PESTICIDES SHOULD BE USED DURING THE CONSTRUCTION PHASE. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> THE SPEED MUST BE KEPT TO A MINIMUM BY USING INFORMATIVE SIGNAGE AND SPEED HUMPS. 	CONTRACTOR, ELO, MMC	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> CONSTRUCTION STAFF SHOULD BE EDUCATED AS TO THE NEED TO REFRAIN FROM DESTRUCTION OF ANIMALS AND PLANTS, AS WELL AS FROM INDISCRIMINATE DEFECATION, WASTE DISPOSAL AND/OR POLLUTION OF LOCAL SOIL AND WATER RESOURCES. STRICT RULES AND PENALTIES AGAINST THE SNARING/KILLING/CATCHING OF ANY ANIMALS FOR ALL CONSTRUCTION WORKERS. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> LEFT OPEN FOR EXTENDED PERIODS OF TIME AS FAUNA MAY FALL IN AND BECOME TRAPPED IN THEM. TRENCHES WHICH ARE STANDING OPEN SHOULD HAVE PLACES WHERE THERE ARE SOIL RAMPS ALLOWING FAUNA TO ESCAPE THE TRENCH. 	CONTRACTOR, ECO, MMC	
DESTRUCTION OF HERITAGE RESOURCES	<ul style="list-style-type: none"> COMPLY AT ALL TIMES TO THE NATIONAL HERITAGE AND RESOURCES ACT (ACT 25 OF 1999). IN THE EVENT THAT ANY HUMAN REMAINS ARE FOUND THAT THESE WOULD HAVE TO BE REPORTED TO SAHRA (SOUTH AFRICAN HERITAGE RESOURCES AGENCY) AS THEY WOULD BE PROTECTED UNDER THE NATIONAL HERITAGE RESOURCES ACT (NO 25 OF 1999). 	CONTRACTOR, ECO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> CONSTRUCTION PERSONNEL MUST BE ALERT AND MUST INFORM THE MUNICIPALITY AND SAHRA SHOULD THEY COME ACROSS ANY FINDINGS 	CONTRACTOR, ECO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> SHOULD ANY ARCHAEOLOGICAL ARTEFACTS BE EXPOSED DURING EXCAVATION, WORK ON THE AREA WHERE THE ARTEFACTS WERE FOUND, SHALL CEASE IMMEDIATELY AND THE ECO SHALL BE NOTIFIED AS SOON AS POSSIBLE. 	CONTRACTOR, ELO, MMC	MONITOR DAILY
	<ul style="list-style-type: none"> UPON RECEIPT OF SUCH NOTIFICATION, THE ECO WILL ARRANGE FOR THE EXCAVATION TO BE EXAMINED BY AN ARCHAEOLOGIST AS SOON AS POSSIBLE. 	CONTRACTOR, ECO, MMC	AS REQUIRED

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> • UNDER NO CIRCUMSTANCES SHALL ARCHAEOLOGICAL ARTEFACTS BE REMOVED, DESTROYED OR INTERFERED. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> • ANY ARCHAEOLOGICAL SITES EXPOSED DURING CONSTRUCTION ACTIVITIES MAY NOT BE DISTURBED PRIOR TO AUTHORISATION BY THE SOUTH AFRICAN HERITAGE RESOURCES AGENCY. 	CONTRACTOR, ELO, MMC	AS REQUIRED
TRAFFIC	<ul style="list-style-type: none"> • IT MUST BE ENSURED THAT A BACKLOG OF TRAFFIC DOES NOT DEVELOP AT ANY ACCESS POINTS TO RESIDENTIAL PROPERTIES. ALL TRAFFIC MANAGEMENT MUST BE DONE IN ACCORDANCE WITH THE NATIONAL ROAD TRAFFIC ACT NO. 93 OF 1996. 	CONTRACTOR, ELO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> • VEHICULAR MOVEMENT BEYOND THE PROPERTY BOUNDARIES SHOULD BE LIMITED DURING PEAK HOUR. ACCESS TO THE SITE MUST FOLLOW CURRENT AND ESTABLISHED ROUTES. ALL ACCESS ROADS MUST BE DEMARCATED, AND EXISTING ROADS MUST BE USED AS FAR AS POSSIBLE. CONSTRUCTION VEHICULAR TRAFFIC MUST BE LIMITED TO A MAXIMUM SPEED LIMIT OF 30 KM/H INSIDE THE PROPOSED DEVELOPMENT. 	CONTRACTOR, ELO, MMC	DAILY
CRIME SAFETY AND SECURITY	<ul style="list-style-type: none"> • IN CASE WHERE BLASTING IS REQUIRED, AN AUTHORISATION MUST BE OBTAINED FROM THE DEPARTMENT OF MINERAL & ENERGY AFFAIRS. FULL PRECAUTIONS SHOULD BE TAKEN TO AVOID MISSILE DAMAGE TO SURROUNDING BUILDINGS AND/OR INFRASTRUCTURE SHOULD BLASTING BE REQUIRED. 	CONTRACTOR, ECO, MMC	AS REQUIRED

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> DO NOT ALLOW THE MOVEMENT OF PUBLIC WITHIN THE DEVELOPMENT SITE BY POSTING NOTICES AT THE ENTRANCE GATES AND PERIMETER FENCING/WALLS. LIMIT ACCESS TO THE CONSTRUCTION CREW CAMP ONLY TO THE WORKFORCE. SIGNS OR HAZARD TAPE MUST BE PLACED IN AND AROUND AREAS WHERE EXCAVATIONS ARE IN PROGRESS. PROPER ACCESS CONTROL (I.D. CARDS) SHOULD BE ENFORCED TO ENSURE THAT NO UNAUTHORISED PERSONS ENTER THE SITE. 	CONTRACTOR, ELO, MMC	DAILY
	<ul style="list-style-type: none"> DO NOT ALLOW FOR THE CONGREGATION OF INFORMAL WORKERS IN FRONT OF THE ENTRANCE/EXIST ROAD. 	CONTRACTOR, ELO, MMC	MONITOR DAILY
	<ul style="list-style-type: none"> NO RUBBLE OR DISCARDED BUILDING MATERIALS MUST REMAIN ON THE CONSTRUCTION SITE FOR MORE THAN TWO WEEKS. NO SOLID WASTE OR VEGETATION MAY BE BURNT ON THE PREMISES OR SURROUNDING AREAS. FIREBREAKS SHOULD COMPLY WITH THE NATIONAL VELDT AND FOREST FIRE ACT, 1998 (CHAPTER 4: DUTY TO PREPARE AND MAINTAIN FIREBREAKS). 	CONTRACTOR, ELO, MMC	MONITOR DAILY

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> THE IMPLEMENTATION OF ADEQUATE AND APPROPRIATE FENCING AND/OR BARRIERS BETWEEN THE SITE AND ADJOINING PROPERTIES AND DEVELOPMENTS MUST BE UNDERTAKEN, TO ENSURE SENSITIVITY TO ADJOINING RESIDENTS AND THEIR PROPERTIES, PARTICULARLY DURING CONSTRUCTION PHASES. THE FENCES, ONCE ERECTED HAVE TO BE CHECKED AND MAINTAINED. STAFF SHOULD BE INFORMED THAT ACCESS TO ADJACENT PROPERTIES IS STRICTLY OFF-LIMITS AND THAT IT WILL BE DEEMED A SERIOUS OFFENCE (I.E. NO FENCES SHOULD BE JUMPED AT ANY TIME AND NO GATES ARE TO BE OPENED WITHOUT PERMISSION FROM THE RELEVANT LANDOWNER). THE CONTRACTOR SHOULD ENSURE PROPER SUPERVISION OF EMPLOYEES AT ALL TIMES. 	DEVELOPER, CONTRACTOR, ELO, MMC	ONCE-OFF AND AS REQUIRED
	<ul style="list-style-type: none"> ADEQUATELY BARRICADE ANY EXPOSED EXCAVATIONS OR ERECT WARNING SIGNS TO NOTIFY THE PUBLIC OF THE INHERENT DANGERS. THE CONTRACTOR WILL HAVE TO PROVIDE HIS OWN SECURITY ARRANGEMENTS WHILE ON SITE. 	CONTRACTOR, ELO MMC	DAILY
	<ul style="list-style-type: none"> THE SITE AND CREW ARE TO BE MANAGED IN STRICT ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO.85 OF 1993) AND THE NATIONAL BUILDING REGULATIONS. THE ACT REQUIRES THE DESIGNATION OF A HEALTH AND SAFETY REPRESENTATIVE WHEN MORE THAN 20 EMPLOYEES ARE EMPLOYED. 	CONTRACTOR, ECO , MMC	DAILY

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> THE CONTRACTOR MUST SUPPLY HIS OWN SECURITY ARRANGEMENTS FOR THE CONSTRUCTION CAMP. THE ASSOCIATED RISK OF INCREASED CRIME DUE TO WORK STAFF BEING ON SITE WOULD BE REDUCED IF THE NUMBER OF STAFF IS LIMITED. DEVELOPMENT SHOULD THEREFORE BE PHASED. 	CONTRACTOR, ELO, MMC	DAILY
	<ul style="list-style-type: none"> ENSURE THE CONTACTS DETAILS OF THE POLICE OR SECURITY COMPANY AND AMBULANCE SERVICES ARE AVAILABLE ON THE SITE. PROVIDE ADEQUATE FACILITIES ON SITE TO TREAT EMERGENCIES TO STAFF. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> ENSURE THAT THE HANDLING OF EQUIPMENTS AND MATERIALS IS SUPERVISED AND ADEQUATELY INSTRUCTED. ENSURE THAT CONSTRUCTION VEHICLES ARE UNDER THE CONTROL OF COMPETENT PERSONNEL. VEHICLES USED FOR CONSTRUCTION ARE TO BE IN GOOD WORKING CONDITION, AND NOT THE SOURCE OF EXCESSIVE FUMES. VEHICULAR TRAFFIC DURING CONSTRUCTION ACTIVITIES MUST BE LIMITED TO A MAXIMUM SPEED LIMIT OF 30 KM/H 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> THE CONTRACTOR SHOULD ENSURE THAT FIRE-FIGHTING EQUIPMENT IS AVAILABLE ON SITE, IN PARTICULAR WHERE FLAMMABLE SUBSTANCES ARE BEING STORED OR USED. NO FIRES WILL BE ALLOWED ON SITE AND FIRE FIGHTING EQUIPMENT MUST BE AVAILABLE ON SITE. 	CONTRACTOR, ELO, MMC	DAILY

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> ANY WELDING OR OTHER SOURCE OF HEATING OF MATERIALS SHOULD BE DONE IN A CONTROLLED ENVIRONMENT WHEREVER POSSIBLE AND UNDER SUPERVISION, IN SUCH A MANNER AS TO MINIMISE THE RISK FIRES AND/OR INJURY TO STAFF. FIRES STARTED FOR COMFORT (WARMTH) SHOULD BE ACTIVELY DISCOURAGED BY THE CONTRACTOR DUE TO THE RISK OF FIRES AND ASSOCIATED RISK TO ADJACENT PROPERTY OWNER'S LANDS. 	CONTRACTOR, ELO, MMC	DAILY
NOISE POLLUTION	<ul style="list-style-type: none"> THE CONSTRUCTION CREW MUST ABIDE BY THE NATIONAL NOISE LAWS AND THE LOCAL BY-LAWS REGARDING NOISE. 	CONTRACTOR, ELO, MMC	DAILY
	<ul style="list-style-type: none"> 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. 	CONTRACTOR, ECO	DAILY
	<ul style="list-style-type: none"> WORKING ACTIVITIES DURING CONSTRUCTION MUST BE CONFINED TO THE FOLLOWING WORKING HOURS: <ul style="list-style-type: none"> MONDAY TO FRIDAY, 08H00 TO 17H00; SATURDAYS, 08H00 TO 14:00; NO WORK ON SUNDAYS AND PUBLIC HOLIDAYS, UNLESS AN ARRANGEMENT IS MADE WITH THE ADJACENT LANDOWNERS. 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 NEIGHBORING RESIDENTS. NOTIFICATION COULD INCLUDE LETTER-DROPS. 	DEVELOPER, CONTRACTOR, ELO, MMC	ONCE-OFF

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> VEHICLES MUST BE WELL SERVICED SO THAT IT DOES NOT PRODUCE EXCESSIVE SMOKE AND NOISE. NOISE SILENCERS CAN BE FITTED TO PLANT AND HEAVY CONSTRUCTION VEHICLES SHOULD COMPLAINTS FROM THE SURROUNDING COMMUNITIES WITH REGARD TO NOISE LEVELS GENERATED ON SITE PERSIST AT ANY STAGE OF CONSTRUCTION. 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. 	CONTRACTOR, ELO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> ACTIVITIES THAT MAY DISRUPT NEIGHBORS (E.G. DELIVERY TRUCKS, EXCESSIVELY NOISY ACTIVITIES ETC) MUST BE PRECEDED BY NOTICE BEING GIVEN TO THE AFFECTED NEIGHBORS AT LEAST 24 HOURS IN ADVANCE. 	ELO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> ANY BLASTING REQUIRED SHOULD OCCUR DURING NORMAL WORKING HOURS (8AM – 5PM), UNLESS APPROVED BY THE ENVIRONMENTAL SITE OFFICER IN CONSULTATION WITH NEARBY LANDOWNERS. 	CONTRACTOR, ELO, MMC	AS REQUIRED
AIR QUALITY	<ul style="list-style-type: none"> 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 NEIGHBORING PROPERTIES. 	DEVELOPER, CONTRACTOR	BEFORE CONSTRUCTION COMMENCES

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> TOPSOIL STRIPPING AND VEGETATION CLEARING SHOULD ONLY TAKE PLACE IN AREAS WHERE CONSTRUCTION ACTIVITIES ARE DUE TO COMMENCE. CLEARING OF THE MINIMUM AREA REQUIRED AT ANY ONE TIME. DUST PRODUCTION MUST BE CONTROLLED BY REGULAR WATERING OF ROADS AND WORKS AREA, SHOULD THE NEED ARISE. 	CONTRACTOR, ELO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> EXPOSED SOIL SURFACES (PARTICULARLY IN THE OPEN SPACE AREAS) SHOULD BE RIPPED AND RE-VEGETATED AS SOON AFTER THE CONSTRUCTION ACTIVITIES IN THOSE AREAS HAS CONCLUDED. 	CONTRACTOR, ELO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> POINTS OF INGRESS AND EGRESS ONTO PUBLIC ROADS MUST BE REGULARLY CLEANED FOR DUST AND MUD. VEHICULAR MOVEMENTS ON SITE SHOULD BE RESTRICTED TO PRE-DETERMINED ROUTES OVER THE SITE. 	CONTRACTOR, ELO, MMC	DAILY
	<ul style="list-style-type: none"> ALL VEHICLES TRANSPORTING MATERIAL THAT CAN BE BLOWN OFF (E.G. SOIL, RUBBLE ETC.) MUST BE COVERED WITH A TARPULIN, AND SPEED LIMITS MUST BE ADHERED TO. 	CONTRACTOR, ELO, MMC	SPOT CHECKS:DAILY-WEEKLY, AS REQUIRED
	<ul style="list-style-type: none"> VEHICLES TO BE USED DURING THE CONSTRUCTION PHASE ARE TO BE KEPT IN GOOD WORKING CONDITION SO AS NOT TO BE THE SOURCE OF EXCESSIVE FUMES AND NUISANCE. 	CONTRACTOR, ELO, MMC	DAILY
	<ul style="list-style-type: none"> HEAVY SMOKE MAY NOT BE RELEASED INTO THE AIR. BURNING OF WASTE IS NOT PRMITTED. 	CONTRACTOR, ELO, MMC	DAILY
VISUAL IMPACT	<ul style="list-style-type: none"> THE PROPOSED SITE IS TO BE PHYSICALLY SCREENED OFF WITH A SOLID WALL OF AT LEAST 1.8M IN HEIGHT. 	DEVELOPER, CONTRACTOR, ECO	BEFORE OTHER CONSTRUCTION ACTIVITIES START
	<ul style="list-style-type: none"> WHEN POSSIBLE, LOCATE ELECTRICAL DISTRIBUTION POWER LINES UNDERGROUND. 	CONTRACTOR, CE	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> • MAKE USE OF INDIGENOUS VEGETATION WHERE POSSIBLE TO CREATE HABITATS THAT ATTRACT THE NATURAL FAUNA AND FLORA. PLANTING OF INDIGENOUS TREE AND SHRUB SPECIES MUST BE ENCOURAGED. THIS CAN BE DONE BY HANDLING OUT A PAMPHLET, WHEN INDIVIDUALS BUY A STAND. • INITIATE AND IMPLEMENT AN INDIGENOUS TREE-PLANTING PROGRAMME TO GRADUALLY SUPPLEMENT AND FINALLY REMOVE EXOTIC TREES AS THE NEW TREES REACH A SUITABLE HEIGHT TO MAINTAIN THE SCREENING EFFECT. 	CONTRACTOR, ELO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> • ENSURE THAT NO LITTER, REFUSE, WASTES, RUBBISH, RUBBLE, DEBRIS AND BUILDERS WASTES GENERATED ON THE PREMISES BE PLACED, DUMPED OR DEPOSITED ON ADJACENT/SURROUNDING PROPERTIES INCLUDING ROAD VERGES, ROADS OR PUBLIC PLACES AND OPEN SPACES DURING OR AFTER THE CONSTRUCTION PERIOD OF THE PROPOSED HOUSING DEVELOPMENT BUT DISPOSED OF AT AN APPROVED DUMPING SITE AS APPROVED BY THE MANGAUNG COUNCIL. 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. 	ELO, CONSTRUCTION CREW, MMC	WEEKLY

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> AVOID SHINY METALS IN STRUCTURES. IF POSSIBLE SHINY METAL STRUCTURES SHOULD BE DARKENED OR SCREENED TO PREVENT GLARE. NIGHT TIME LIGHT SOURCES MUST BE DIRECTED AWAY FROM RESIDENTIAL AREAS. THE BUILDINGS THAT ARE TO BE ERECTED SHOULD BE AESTHETICALLY PLEASING AND BLEND INTO THE AREA AS FAR AS POSSIBLE. THE MATERIALS AND COLOURS USED IN THE CONSTRUCTION OF THE BUILDINGS AND INFRASTRUCTURE MUST GIVE PREFERENCE TO NATURAL AND ECO-FRIENDLY CHOICES, MINIMIZING THE VISUAL IMPACT ON THE AESTHETIC CHARACTER OF THE FARM AND SURROUNDINGS. 	DEVELOPER, CONTRACTOR, ELO & MMC	CONTINUOUS
	<ul style="list-style-type: none"> THE CONSTRUCTION CAMP MUST BE CONTAINED TO PREVENT ANY VISUAL INTRUSION AND BE KEPT IN A CLEAN AND ORDERLY STATE AT ALL TIMES. THE LOCATION OF THE CONSTRUCTION CAMP MUST BE DETERMINED IN CONSULTATION WITH THE COMMUNITY THROUGH THE ELO. THE CONSTRUCTION CAMP AND STOCKPILE AREAS SHOULD ROUTINELY BE CHECKED FOR LITTER. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> ENSURE THAT OUTDOOR ADVERTISING AND SIGNAGE ADHERES TO SAMOAC (SOUTH AFRICAN MANUAL FOR OUTDOOR ADVERTISING CONTROL). 	CONTRACTOR, ELO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> WATER SPRINKLING OF SOILS, ROADS ETC TO MITIGATE DUST POLLUTION AND THE VISUAL IMPACT IT CAN HAVE. 	CONTRACTOR, ELO, MMC	AS REQUIRED

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
WASTE	<ul style="list-style-type: none"> THE CONSTRUCTION CREW MUST ADHERE TO ALL THE RELEVANT LAWS AND REGULATIONS APPLICABLE TO THE DISPOSAL OF CONSTRUCTION WASTE AND RUBBLE. THE CONTRACTOR SHALL PROVIDE A WASTE MANAGEMENT STRATEGY TO THE ECO AND THE ECO SHALL MONITOR THE IMPLEMENTATION THEREOF. 	CONTRACTOR, ECO, MMC	WEEKLY
	<ul style="list-style-type: none"> BERMS SHOULD BE ERECTED AT THE SITES TO PREVENT BUILDING RUBBLE AND/OR SOIL TO WASH INTO WATER COURCES. UNDER NO CIRCUMSTANCES MUST ANY MATERIAL OF ANY KIND BE DUMPED INTO ANY WATER COURSE. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> RUBBLE MUST BE REMOVED FROM THE CONSTRUCTION SITE FREQUENTLY AND DISPOSED OF AT AN APPROVED DUMPING SITE AS APPROVED BY THE MUNICIPALITY. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> SUFFICIENT CONTAINERS MUST BE AVAILABLE ON THE CONSTRUCTION SITE TO HANDLE THE AMOUNT OF LITTER, WASTES, RUBBISH DEBRIS AND BUILDERS WASTES GENERATED ON THE SITE. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> CONTAINERS MUST BE EMPTIED FREQUENTLY TO AVOID RODENTS, INSECTS OR ANY OTHER ORGANISMS ACCUMULATING ON THE SITE AND BECOMING A HEALTH HAZARD TO ADJACENT PROPERTIES. 	CONSTRUCTION CREW, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> THERE MUST BE AN ACTIVE PROGRAM TO SEPARATE THE METALS, BOTTLES AND PLASTICS IN THE SOLID WASTE AND SEND IT TO A REPUTABLE RECYCLING PROGRAM. THIS HAS THE EFFECT OF REDUCING SOIL POLLUTION WHILE AT THE SAME TIME PROMOTES THE PRESERVATION OF VALUABLE RESOURCES BY RECYCLING AND/OR REUSING THE MATERIALS. 	CONTRACTOR, CONSTRUCTION CREW, ELO, MMC	CONTINUOUS

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> NO WASTES MUST REMAIN ON THE CONSTRUCTION SITE FOR MORE THAN TWO WEEKS. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> MATERIAL TO BE USED, AS BACKFILL DURING A LATER BUILDING PHASE MUST BE COVERED WITH A LAYER OF SOIL TO PREVENT LITTER FROM FLYING AWAY AND UNHYGIENIC CONDITIONS DEVELOPING ON THE RUBBISH DUMPS. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> ALL DOMESTIC WASTE GENERATED SHOULD BE DISPOSED OF IN A PROPER MANNER OFF SITE (I.E. NO BURIAL ON SITE UNLESS A PERMITTED WASTE SITE IS IDENTIFIED AND CREATED). THE SITE SHOULD BE SERVICED BY PROPERLY MANAGED AND MAINTAINED TOILET FACILITIES. IN GENERAL, LITTERING, DISCARDING OR BURYING OF ANY MATERIALS SHOULD NOT BE ALLOWED ON SITE. REFUSE BINS MUST BE AVAILABLE ON THE SITE. PLACEMENT AND NUMBER WILL BE VERY IMPORTANT. ROADS ON SITES AND APPROACHES MUST BE REGULARLY SCRAPED AND MAINTAINED FREE OF DEPOSITS AND OTHER WASTE. 	CONTRACTOR, ELO, MMC	CONTINUOUS
ADEQUACY OF WASTE DISPOSAL FACILITIES	<ul style="list-style-type: none"> ALL CONTRACTS WITH SUBCONTRACTORS SHOULD CONTAIN A CLAUSE TO THE EFFECT THAT THE DISPOSAL OF ALL CONSTRUCTION-GENERATED REFUSE / WASTE TO AN OFFICIALLY APPROVED DUMPING SITE IS THE RESPONSIBILITY OF THE SUBCONTRACTOR IN QUESTION AND THAT THE SUBCONTRACTORS ARE BOUND TO THE MANAGEMENT ACTIVITIES STIPULATED IN THIS EMP. 	DEVELOPER, SUB-CONTRACTORS, ECO, MMC	ONCE-OFF, MONITOR WEEKLY

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
	<ul style="list-style-type: none"> REFUSE COLLECTION SHOULD TAKE PLACE ON A REGULAR BASIS. A LITTER PATROL AROUND THE CONSTRUCTION AREA IS TO TAKE PLACE TWICE A WEEK TO COLLECT ANY LITTER THAT MAY HAVE BEEN STREWN AROUND. 	CONTRACTOR, ELO, MMC	WEEKLY
	<ul style="list-style-type: none"> ALL SOLID AND CHEMICAL WASTES THAT ARE GENERATED MUST BE REMOVED AND DISPOSED OF AT A LICENSED WASTE DISPOSAL SITE. 	CONTRACTOR, ELO, MMC	WEEKLY
	<ul style="list-style-type: none"> CHEMICAL CONTAINERS AND PACKAGING BROUGHT ONTO THE SITE MUST BE REMOVED FOR DISPOSAL AT A SUITABLE SITE. 	CONTRACTOR, ELO, MMC	AS REQUIRED
	<ul style="list-style-type: none"> BURNING OF WASTE IS NOT ALLOWED. 	CONTRACTOR, ELO, MMC	CONTINUOUS
ACCESS CONTROL	<ul style="list-style-type: none"> THE SITES SHOULD BE FENCED TO CONTROL ACCESS TO OTHERWISE DANGEROUS EXCAVATIONS AND MATERIALS. 	CONTRACTOR, ELO, MMC	CONTINUOUS
	<ul style="list-style-type: none"> TRANSPORT ROUTES TO AND WITHIN THE SITE, AND OPERATIONAL/CONSTRUCTION AREAS SHOULD BE CLEARLY DEMARCATED PRIOR TO USE (E.G. USING RED AND WHITE BUNTING). 	CONTRACTOR, ELO, MMC	ONCE-OFF
	<ul style="list-style-type: none"> ALL VEHICLES USED FOR TRANSPORTATION AND/OR CONSTRUCTION PURPOSES SHOULD REMAIN WITHIN THESE DEMARCATED ROUTES AND AREAS, I.E. VEHICLES SHOULD NOT BE ALLOWED TO DRIVE RANDOMLY ACROSS UNDISTURBED AREAS, BUT SHOULD STICK TO APPROVED ROUTES. THE PURPOSE OF THIS MEASURE IS TO A) LIMIT UNNECESSARY COMPACTION OF TOPSOIL, AND B) TO PREVENT DISTURBANCE OF ANIMALS AND PLANTS OUTSIDE OF CONSTRUCTION AREAS. 	CONTRACTOR, ELO, MMC	CONTINUOUS

Table 3: Operational Phase for the Proposed Development

ACTIVITY/ISSUE	ACTION	RESPONSIBILITY	FREQUENCY OF ACTION
SITE MANAGEMENT	<ul style="list-style-type: none"> A MITIGATION MONITORING COMMITTEE (MMC) SHOULD BE ESTABLISHED TO ENSURE THAT THE EMP IS IMPLEMENTED AND SOUND ENVIRONMENTAL MANAGEMENT OCCURS IN THE OPERATIONAL PHASE. 	MMC	ONCE-OFF, YEARLY AUDITS
STORMWATER MANAGEMENT	<ul style="list-style-type: none"> STORM WATER MANAGEMENT SYSTEMS AND SERVITUDES MUST BE WELL MAINTAINED. 	MMC, ENGINEER	AS REQUIRED
	<ul style="list-style-type: none"> CARE SHOULD BE TAKEN TO AVOID ANY ACCUMULATION OF SURFACE WATER NEAR TO FUTURE BUILDING SITES BY APPROPRIATE SURFACE STORMWATER DRAINAGE DESIGN. 	CE, MMC, RESIDENTS	CONTINUOUS
EROSION, SEDIMENTATION AND FLOODING	<ul style="list-style-type: none"> THE STORMWATER SYSTEM, ESPECIALLY THE DISCHARGE POINTS, MUST BE INSPECTED AND DAMAGED AREAS MUST BE REPAIRED IF REQUIRED. 	MMC	CONTINUOUS, MONITOR BI-ANNUALLY
	<ul style="list-style-type: none"> LITTER BLOCKING STORMWATER SYSTEM MUST BE REMOVED. 	MMC	BI-WEEKLY
	<ul style="list-style-type: none"> IF SOILS COMPACTION OCCURS – RIP COMPACTED AREAS TO IMPROVE INFILTRATION, REDUCE RUNOFF AND EASE OF LANDSCAPING. MAINTAIN PLANT COVER AND AVOID UNNECESSARY TRAFFICKING. 	MMC	CONTINUOUS, MONITOR BI-ANNUALLY
WATER QUALITY	<ul style="list-style-type: none"> POSSIBLE POLLUTION MUST BE REPORTED TO DWS WITHIN 24 HOURS OF SPILLAGE/LEAKAGE. 	MMC	QUARTERLY
	<ul style="list-style-type: none"> RECOMMENDATIONS AS MADE IN THE ATTACHED SERVICES REPORTS 	MMC, ENGINEER	AS REQUIRED
	<ul style="list-style-type: none"> ANY DAMAGES TO THE SEWAGE SYSTEM MUST BE REPAIRED IMMEDIATELY. 	MMC, ENGINEER	AS REQUIRED

	<ul style="list-style-type: none"> • DISCOURAGE THE USE OF INSECTICIDES, WITH EMPHASIS ON OUTDOOR CHEMICALS, WHICH CAN BE DISPERSED BY AIRFLOW AND ANIMALS. WHERE THE USE OF FERTILIZERS IS WARRANTED, SLOW-RELEASE NATURAL ORGANIC FERTILIZERS SHOULD BE USED SPARINGLY, WITH APPLICATION RATES AS LOW AS POSSIBLE. RATHER MAKE USE OF ENVIRONMENTALLY FRIENDLY HERBICIDES AND INSECTICIDES WITH FAST ENVIRONMENTAL BREAKDOWN RATES. • THE APPLICATION OF FERTILISERS SHOULD BE AVOIDED WHEN HEAVY RAINFALL IS FORECAST AND SHOULD BE APPLIED ONLY UNDER CALM WIND CONDITIONS. 	MMC, ENGINEER	AS REQUIRED
WATER SUPPLY/COMSUMPTION	<ul style="list-style-type: none"> • INSPECT THE SITE FOR BURST, BLOCKED OR LEAKING WATER PIPES AND REPAIR AS REQUIRED. 	MMC	QUARTERLY
	<ul style="list-style-type: none"> • WATER CONSUMPTION FOR DOMESTIC PURPOSES IS A GIVEN, BUT CARE MUST BE TAKEN NOT TO WASTE ANY WATER. IN THE HOUSES, HALF FLUSH SYSTEMS IN THE TOILETS AS WELL AS WATER AERATORS IN ALL TAPS MUST BE INSTALLED TO REDUCE WATER CONSUMPTION. ALL THESE CRITERIA MUST FIT INTO A SET OFF RULES FOR THE USE OF WATER BY ALL PROPERTY OWNERS AT THE DEVELOPMENT. 	MMC	CONTINUOUS
	<ul style="list-style-type: none"> • IRRIGATION OF LAWNS MUST NOT TAKE PLACE DURING PERIODS OF HIGH EVAPORATION, IE: LOW HUMIDITY, HIGH TEMPERATURE OF HIGH WINDS. ALL IRRIGATION SHOULD PREFERABLY TAKE PLACE AFTER SUNSET TO ALLOW SUFFICIENT TIME FOR WATER TO SEEP INTO THE SOIL BEFORE THE SUN RISES AND ACCELERATES EVAPORATION. 	MMC	CONTINUOUS
SEWAGE SYSTEM	<ul style="list-style-type: none"> • THE SEWAGE SYSTEM MUST BE INSPECTED FOR LEAKAGES ON A REGULAR BASIS AND ANY LEAKAGES MUST BE ATTENDED TO IMMEDIATELY. 	MMC	AS REQUIRED

AIR QUALITY	<ul style="list-style-type: none"> • SPEED LIMITS AND SPEED HUMPS ON THE ROADS WILL KEEP SPEEDS DOWN. • VEHICLES MUST BE WELL SERVICED SO THAT IT DOES NOT PRODUCE EXCESSIVE SMOKE AND NOISE. • EXPOSED SOIL SURFACES (PARTICULARLY IN THE OPEN SPACE AREAS) SHOULD BE RIPPED AND RE-VEGETATED. • NO SOLID WASTE OR VEGETATION MAY BE BURNT ON THE PREMISES OR SURROUNDINGS. KEEP WASTE IN ADEQUATE WASTE BINS AND DISPOSE OF REGULARLY AND AT THE CORRECT AND LICENSED SITE. 	MMC	CONTINUOUS
NOISE IMPACT	<ul style="list-style-type: none"> • IT MUST BE ENSURED THAT ALL VEHICLES ARE APPROPRIATELY MAINTAINED. • LOUD MUSIC AND OTHER UNDUE NOISE MUST NOT BE PERMITTED. • HOBBIES OR OTHER ACTIVITIES WHICH PRODUCE EXCESSIVE NOISE AND NUISANCE TO OTHER RESIDENTS MUST NOT BE ALLOWED. • ALL ACTIVITIES ON THE SITE MUST ABIDE BY THE NATIONAL NOISE LAWS AND THE LOCAL NOISE BY-LAWS. 	MMC	CONTINUOUS
WASTE MANAGEMENT	<ul style="list-style-type: none"> • DISPOSAL OF ALL DOMESTIC WASTE MUST BE UNDERTAKEN BY THE MUNICIPALITY OR AN INDEPENDENT COMPANY. EXTERNAL DUSTBINS SHOULD BE CLEANED AT LEAST ONCE A WEEK. 	MMC, MMM	WEEKLY
	<ul style="list-style-type: none"> • SOLID WASTE MUST BE KEPT IN ADEQUATE WASTE BINS AND DISPOSED OF REGULARLY AT THE CORRECT AND LICENSED LANDFILL SITE. WASTE MUST BE SORTED AND RECYCLED (GLASS, PLASTIC, METAL, PAPER AND WET WASTE). WASTE MAY NOT BE BURNED ON SITE AND NO WASTE MAY BE BURIED ON SITE. 	MMC	WEEKLY

	<ul style="list-style-type: none"> • THERE MUST BE AN ACTIVE PROGRAM TO SEPARATE THE METALS, BOTTLES AND PLASTICS IN THE SOLID WASTE AND SEND IT TO A REPUTABLE RECYCLING PROGRAM. THIS HAS THE EFFECT OF REDUCING SOIL POLLUTION WHILE AT THE SAME TIME PROMOTES THE PRESERVATION OF VALUABLE RESOURCES BY RECYCLING AND/OR REUSING THE MATERIALS. 	MMC	CONTINUOUS
VISUAL AESTHETIC	<ul style="list-style-type: none"> • DEVELOPMENT MUST BE MAINTAINED. THIS INCLUDES WATERING PLANTS, PRUNING TREES, CUTTING GRASS, COLLECTING LITTER, ETC. 	MMC	INSPECT MONTHLY
	<ul style="list-style-type: none"> • MAKE USE OF INDIGENOUS VEGETATION WHERE POSSIBLE TO CREATE HABITATS THAT ATTRACT THE NATURAL FAUNA AND FLORA. PLANTING OF INDIGENOUS TREE AND SHRUB SPECIES MUST BE ENCOURAGED. THIS CAN BE DONE BY HANDLING OUT A PAMPHLET, WHEN INDIVIDUALS BUY A STAND. • INITIATE AND IMPLEMENT AN INDIGENOUS TREE-PLANTING PROGRAMME TO GRADUALLY SUPPLEMENT AND FINALLY REMOVE EXOTIC TREES AS THE NEW TREES REACH A SUITABLE HEIGHT TO MAINTAIN THE SCREENING EFFECT. • LANDSCAPING MUST BE MAINTAINED TO ENHANCE THE AESTHETICAL APPEAL OF THE DEVELOPMENT. 	MMC	CONTINUOUS

	<ul style="list-style-type: none"> ENSURE THAT NO LITTER, REFUSE, WASTES, RUBBISH, RUBBLE, DEBRIS AND BUILDERS WASTES GENERATED ON THE PREMISES BE PLACED, DUMPED OR DEPOSITED ON ADJACENT/SURROUNDING PROPERTIES INCLUDING ROAD VERGES, ROADS OR PUBLIC PLACES AND OPEN SPACES DURING OR AFTER THE CONSTRUCTION PERIOD OF THE PROPOSED HOUSING DEVELOPMENT BUT DISPOSED OF AT AN APPROVED DUMPING SITE AS APPROVED BY THE MANGAUNG COUNCIL. 	MMC	CONTINUOUS
	<ul style="list-style-type: none"> IF ON SITE ACCOMMODATION IS FOUND NECESSARY FOR SOME OF THE MAINTENANCE PEOPLE, THESE RESIDENCES MUST BE TREATED AND BUILT EXACTLY THE SAME WAY AND WITH THE SAME ARCHITECTURAL THEME AS THE REST OF THE DEVELOPMENT. 	MMC	AS REQUIRED
	<ul style="list-style-type: none"> DISPOSAL OF ALL DOMESTIC WASTE MUST BE UNDERTAKEN BY THE LOCAL COUNCIL OR AN INDEPENDENT COMPANY. 	MMM, MMC	WEEKLY
	<ul style="list-style-type: none"> LANDSCAPE AREAS ARE TO BE MAINTAINED AND WEEDED FREQUENTLY. 	MMC	WEEKLY – FORTNIGHT MAINTENANCE, DEPENDING ON THE SEASON.
	<ul style="list-style-type: none"> ENSURE THAT OUTDOOR ADVERTISING AND SIGNAGE ADHERES TO SAMOAC (SOUTH AFRICAN MANUAL FOR OUTDOOR ADVERTISING CONTROL). 	MMC	AS REQUIRED

	<ul style="list-style-type: none"> • MAINTAIN BUILDINGS AND PERIMETER FENCING ETC. IN ORDER TO ENSURE THAT THEY DO NOT DETERIORATE AND RESULT IN AN AESTHETICALLY UNPLEASING DEVELOPMENT. • ALL EXTERNAL FITTINGS FOR EXAMPLE SATELLITE DISHES AND TV AERIALS SHOULD BE POSITIONED IN SUCH A WAY THAT WILL HAVE THE LEAST VISUAL IMPACT. • ALL OUTSIDE LIGHTING TO SHINE DIRECTLY DOWN. NO GENERAL SPOTLIGHTED AREAS MUST BE ALLOWED, WHICH COULD BOTHER NEIGHBOURS. • TO REDUCE THE VISUAL IMPACT OF POWER LINES ON THE ENVIRONMENT THE POWER CAN BE DISTRIBUTED FROM EXISTING OVERHEAD POWER LINES TO THE STANDS BY MEANS OF UNDERGROUND LOW VOLTAGE CABLES. 	MMC	CONTINUOUS
TRAFFIC	<ul style="list-style-type: none"> • IT MUST BE ENSURED THAT A BACKLOG OF TRAFFIC DOES NOT DEVELOP AT THE ACCESS POINTS DURING PEAK HOURS, THROUGH THE IMPLEMENTATION OF AN EFFICIENT AND EFFECTIVE ACCESS CONTROL SYSTEM. ALL TRAFFIC MANAGEMENT MUST BE DONE IN ACCORDANCE WITH THE NATIONAL ROAD TRAFFIC ACT NO. 93 OF 1996. 	MMC	CONTINUOUS
	<ul style="list-style-type: none"> • VEHICLE MOVEMENT MUST BE RESTRICTED AND NO MOVEMENT MUST BE ALLOWED IN OPEN SPACE AREAS AND ESPECIALLY THE RIVERINE BUSH AND THICKET. 	MMC	CONTINUOUS
	<ul style="list-style-type: none"> • THE SPEED MUST BE KEPT TO A MINIMUM BY USING INFORMATIVE SIGNAGE AND SPEED HUMPS. 	MMC	CONTINUOUS

VEGETATION AND ANIMAL LIVE	<ul style="list-style-type: none"> • STRICT CONTROL MEASURES MUST BE IN PLACE TO MONITOR REHABILITATION ACTIVITIES. THE VEGETATION OUTSIDE DEVELOPMENT FOOTPRINTS SHOULD BE REHABILITATED AS CLOSE AS POSSIBLE TO NATURAL VELD, CREATING SANCTUARY FOR ANIMALS. WHERE NECESSARY, A SUITABLE MIXTURE OF INDIGENOUS GRASS SEED SHALL BE USED TO RESEED DAMAGED AREAS. ALL OPEN SPACE AREAS MUST BE RE-VEGETATED WITH INDIGENOUS AND ENDEMIC SPECIES. INDIGENOUS PLANTS SHOULD BE USED FOR ORNAMENTAL OR UTILITARIAN PURPOSES IN GARDENS AND AS VISUAL SCREENS. 	<p>MMC</p>	<p>CONTINUOUS</p>
	<ul style="list-style-type: none"> • MONITORING OF THE DISTURBED AREAS MUST BE DONE TO INSPECT THE SUCCESSION PROCESS OF THE VEGETATION DURING THE OPERATIONAL PHASE. 	<p>MMC</p>	<p>CONTINUOUS</p>
	<ul style="list-style-type: none"> • SOLID WASTE OR TOXIC SUBSTANCES SHOULD BE HANDLED WITH CARE AND NOT LEFT IN THE OPEN SO THAT ANIMALS CAN SCAVENGE IN IT. • THE USE OF ANY POISONS FOR PROBLEM ANIMAL CONTROL SHOULD BE STRICTLY CONTROLLED. 	<p>MMC</p>	<p>CONTINUOUS</p>
	<ul style="list-style-type: none"> • INVASIVE EXOTIC PLANTS AND WEEDS MUST BE ERADICATED ON THE PROPERTY. . THIS MUST BE ACCOMPANIED BY A LONG-TERM MONITORING AND FOLLOW-UP CLEARING PROGRAM. 	<p>MMC</p>	<p>CONTINUOUS</p>

	<ul style="list-style-type: none"> • THE LANDSCAPING PROPOSALS AND THE SELECTION OF TREES AND SHRUBS MUST BE SELECTED TO BE FRUIT AND OR FLOWER BEARING AND THUS BE SPECIALLY SELECTED TO ATTRACT MORE BIRDS. INDIGENOUS PLANTS SHOULD BE USED FOR ORNAMENTAL OR UTILITARIAN PURPOSES IN GARDENS AND AS VISUAL SCREENS. ONLY INDIGENOUS TREES SHOULD BE PLANTED ALONG THE ROADS. AN ECO-CONTROL OFFICER SHOULD BE APPOINTED TO MONITOR AND HELP WITH THE PLANTING OF INDIGENOUS TREES AND SHRUBS ALONG THE ROADS AND OPEN AREAS. 	MMC	CONTINUOUS
	<ul style="list-style-type: none"> • NO FIRES MAY BE IGNITED WITH THE INTENT TO DESTROY THE FLORA ON SITE AND SURROUNDING PROPERTIES. THE CLEARED VEGETATION SHOULD BE COMPOSTED WHERE POSSIBLE TO PRESERVE THE NUTRIENTS IN IT AND RETURN IT TO THE SOIL. THIS VEGETATION MUST NOT BE BURNT AS IT CAUSES A LOSS OF NUTRIENTS AND ORGANIC MATERIAL. IT ALSO CAUSES AIR POLLUTION AND A FIRE HAZARD. 	MMC	CONTINUOUS
	<ul style="list-style-type: none"> • PREVENT THE INTRODUCTION OF PEST SPECIES SUCH AS MICE, RATS, ARGENTINE ANTS, AND DOG FLEAS ETC. ALSS DISCOURAGE THE USE OF INSECTICIDES, WITH EMPHASIS ON OUTDOOR CHEMICALS, WHICH CAN BE DISPERSED BY AIRFLOW AND ANIMALS. 	MMC	CONTINUOUS
	<ul style="list-style-type: none"> • NO INDIGENOUS VEGETATION MAY BE COLLECTED, OR USED FOR FIREWOOD. 	MMC	CONTINUOUS
FIRE	NO OPEN FIRES ARE ALLOWED ON THE SITE, EXCEPT IN DESIGNATED CONTROLLED AREAS.	MMC	CONTINUOUS

CRIME, SAFETY AND SECURITY	EFFECTIVE POLICING OF THE PROPOSED DEVELOPMENT AND SURROUNDING AREAS. IMPLEMENTATION OF NEIGHBOURHOOD WATCH.	MMC, SAPD	CONTINUOUS
ENERGY EFFICIENT TECHNOLOGIES	ENERGY EFFICIENT TECHNOLOGIES AND WATER SAVING DEVICES MUST BE IMPLEMENTED AND MAINTAINED FOR THE PROPOSED DEVELOPMENT. THIS INCLUDE MEASURES SUCH AS RECYCLING OF WASTE, THE USE OF LIGHT EMITTING DIODE (LED) BULBS, MAXIMIZING THE USE OF SOLAR HEATING, MANAGEMENT OF STORM WATER, THE CAPTURE AND USE OF RAINWATER FROM GUTTERS AND THE ROOF, THE USE OF LOCALLY INDIGENOUS VEGETATION DURING LANDSCAPING AND THE TRAINING OF STAFF TO IMPLEMENT GOOD HOUSEKEEPING	MMC	CONTINUOUS

SECTION 8: CONCLUSIONS

Although the site is situated in a Critical Biodiversity area (CBA) and is also classified as a Threatened Ecosystem the site has been isolated by residential developments, and small holdings where the vegetation has been severely transformed (ploughed, overgrazed, alien vegetation). The site has also been subjected to heavy grazing and disturbance in the past as indicated by the relatively high cover of pioneer species such as *Aristida congesta*, *Cynodon dactylon* and *Schkuhria pinnata*. From an environmental perspective the site is not that sensitive that the proposed development cannot take place. Provided this development is mitigated, as per the BAR and EMP, the project will result in limited negative environmental impacts.

This Environmental Management Plan should be used as an on-site reference document during all phases of this development, and auditing should take place in order to determine compliance with this EMP. Parties responsible for transgression of this EMP should be held responsible for any rehabilitation that may need to be undertaken. Parties responsible for environmental degradation through irresponsible behaviour/negligence should receive penalties.

In order to have records of environmental incidences and the handling thereof, it is suggested that incidence logs (as supplied below) be filled in by the Environmental Control Officer or Environmental Liaison Officer. The MMC needs to be informed of such incidences and further actions need to be taken, should the need arise.

Non-compliance with the conditions set out in this EMP will be regarded as an offence and will consequently be dealt with in terms of Sections 29, and 30 of the Environment Conservation Act, 1989 (Act No.73 of 1989) and other appropriate legal mechanism.

Appendix 1: Incident Log Sheet

ENVIRONMENTAL INCIDENT LOG				
DATE	ENVIRONMENTAL CONDITION	COMMENTS (Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)	CORRECTIVE ACTION TAKEN (Give details and attach documentation as far as possible)	SIGNATURE

