



education

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Mqhawe High School

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DOCUMENT SUMMARY

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1 INTRODUCTION

CIVPRO Engineering Joint Venture (herein CIVPRO Engineering-JV) have been appointed by the Development Bank of Southern Africa (DBSA) and the KwaZulu-Natal Department of Education (KZN DoE) to undertake conditional assessments of a number of schools as part of a greater programme implemented by the DoE. In respect of this, CIVPRO Engineering-JV have prepared a School Assessment Report to present the KZN DoE and the DBSA with a feasible and sustainable proposal to address the current issues and challenges at the selected Mqhawe High School and sets out how the professional team intends to deliver the identified scope on the projects assigned to it.

In light of the above, this CEMPr has been developed to ensure that the maintenance and development of Mqhawe High School is undertaken in an environmentally responsible manner and to prevent any negative impacts on the receiving environment. The CEMPr describes the main requirements that the Contractor must comply with during the construction phase to ensure that the environment is considered, negative impacts avoided, or minimised and positive impacts optimised. The CEMPr and associated documents also address the requirements of the planning documents that shall apply to the construction phase of the project. This document is important to all parties that will be involved in the development of the school premises.

The purpose of the standard is to:

- Describe how the environment will be managed during the construction phase.
- Detail the role of the Contractor with respect to the implementation of the CEMPr for this project.
- Aid the Contractor in understanding the CEMPr.
- Provide a set of standards for environmental management during the construction phase.

2 DEFINITIONS AND ABBREVIATIONS

CEMPr	Construction Environmental Management Programme
Client	Department Bank of Southern Africa (DBSA)
Employer	KwaZulu-Natal Department of Education
Contractor	The main contractor as engaged by the Employer for construction operations, including all Sub-Contractors appointed by the main Contractor of his own volition for the execution of parts of the construction operations; and any other Contractor from time to time.
EO	Contractors Environmental Officer responsible for ensuring compliance with the CEMPr daily
Construction Manager	The Employers Construction Manager works together with the Employers Project Manager to ensure that construction proceeds in accordance with the relevant specifications and deadlines
KZN	KwaZulu-Natal Province
NEMA	National Environmental Management Act (Act No. 107 of 1998)

3 OVERVIEW OF THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROGRAMME

3.1 Composition of the CEMPr

The CEMPr shall form an integral part of all contracts with Contractors. The CEMPr shall be included in the Tender Documents issued to prospective Contractors. The Contractors shall incorporate all requirements set out in the CEMPr in their submissions to the Employer.

3.2 Objective of the CEMPr

The objectives of the environmental management programme are to:

- Provide a description of the background to the project and the affected environment, thus providing the context within which the management requirements are to be implemented.
- Ensuring that the suitable record keeping, and reporting structures are put in place to ensure that implementation of the stipulated environmental management measures are monitored in the long-term.
- Ensuring that the roles and responsibilities for the management of various aspects are clearly defined and understood.
- Ensuring that all associated activities are undertaken in a way that minimises identified potential negative effects on the surrounding environment.
- Ensuring that relevant environmental management are well stipulated understood and documented for all relevant parties.
- Encourage and achieve the highest environmental performance and response from all employees and contractors.
- Ensure that management efforts are proactive and focussed to prevent impacts from occurring.
- Supplement the proactive approach with reactive measures to minimise the severity or significance of any impacts that cannot be prevented at source.

The mitigation measures recommended in this EMPr will apply to the construction phase of the project cycle.

3.3 Purpose of Environmental Specifications

Considering the objectives listed in Section 3.2, the purpose of environmental specifications is to incorporate the relevant recommendations of the studies undertreatment (i.e. Traffic Impact Study) into an environmental performance specification for implementation during the construction phase of the project.

The CEMPr is configured as a performance specification to ensure that the Employer and any entities that enter into formal agreements with themselves viz. Consultants, Contractors and Sub-Contractors, achieve an acceptable level of environmental performance.

No advice, approval of method statements or any other form of communication from the Employer shall be construed as an acceptance by the Employer of any obligation that absolves the Contractor from achieving any required level of performance. Further, there is no acceptance of liability by the Employer which may result from the Contractor failing to comply with the required specifications, i.e. the Contractor remains responsible for achieving the required performance levels.

4 ROLES AND RESPONSIBILITIES

Effective implementation of the EMPr requires that all parties or role players involved in this project need to comply with the directives set out. A concise description of impacts and their mitigation/management measures will be provided and understood by all role players responsible for the implementation and monitoring of the mitigation measures. The project will comprise of the following role players:

Table 1: Roles and Responsibilities for the personnel involved in the project

FUNCTION	RESPONSIBILITY
Employer (KZN DoE)	<p>KZN DoE is responsible for ensuring that the proposed development is in line with the standards of the National Environmental Management Act [NEMA] (Act No. 107 of 1998), as well as the provincial and municipal development and spatial plans. In implementing environmental management measures during the office construction, the Employer needs to:</p> <ul style="list-style-type: none"> • Ensure that all parties during construction activities, are well aware of and implement the applicable environmental management requirements (as listed in the CEMPr); • Ensure that all personnel are well versed with the CEMPr; • Ensure that the Contractor is undertaking all activities in accordance with the requirements of the CEMPr and that high standards of environmental management are pursued; • Allocate and manage resources to ensure adequate supervision of environmental matters.
Construction Manager	<p>The Construction Manager takes complete responsibility of the whole project and any contracted parties and ensuring that all environmental management facets are adhered to. The roles and responsibilities of the Engineering Manager during the Construction Phase will include:</p> <ul style="list-style-type: none"> • Identifying the need for remedial measures with regard to proposed works; • Communicating directly with the Contractor and sub-contractors; and • Issuing non-conformance notifications to contractors that do not comply with the requirements as set out in the CEMPr.
Contractor	<p>The Principle Contractor is responsible for the following:</p> <ul style="list-style-type: none"> • Ensure that all activities on site are undertaken in accordance with the CEMPr; • Monitor all the sub-contractors' activities with regard to the requirements outlined in the CEMPr; • Ensure that all employees and sub-contractors comply with the CEMPr; • Immediately notify the Construction Manager of any non-compliance with the

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FUNCTION	RESPONSIBILITY
	<p>CEMPr, or any other issues of environmental concern; and</p> <ul style="list-style-type: none"> • Ensure that non-compliance is remedied timeously and to the satisfaction of the Construction Manager. <p>Please note: A number of Contractors will be employed by the Employer for different components of the project. This CEMPr applies to each individual Contractor. The Principle Contractor's primary responsibilities are to construct the works and ensure compliance with the CEMPr.</p> <p>The Contractor shall appoint an Environmental Officer (EO) whose role is to ensure compliance with the requirements of the CEMPr.</p> <p>The Contractor has a duty to demonstrate respect and care for the environment. The Contractor will be responsible for the cost of rehabilitation of any environmental damage that may result from non-compliance with the CEMPr, environmental regulations and relevant legislation, resulting from their presence on site.</p>
Contractor's Environmental Officer	<p>It will be the responsibility of the Environmental Officer (EO) to ensure that all work is conducted according to approved Environmental Method Statements and that the requirements of the CEMPr are implemented in a timeous and proper manner in his / her work area. The EO shall:</p> <ul style="list-style-type: none"> • Undertake regular inspections of the work area(s); • Prepare activity based Environmental Method Statements; • Monitor compliance with the CEMPr and approved Environmental Method Statements; • Conduct ongoing environmental awareness training of the Contractor's site personnel; • Report and record any environmental incidents caused by the Contractor or due to the Contractor's activities; • Take required corrective action within specified time frames and close out of environmental incidents; • Attend all Safety, Health and Environmental meetings, toolbox talks and induction programmes; • Be responsible for waste management; • Ensure that environmental signage and barriers are correctly placed; and • Submit monthly checklists to the Construction Manager.

5 MATTERS PERTAINING TO THE IMPLEMENTATION OF THE CEMP

5.1 Availability of the CEMPr

A copy of the CEMPr shall be available at the site offices of the Contractor and at the Construction Manager's site office. All Contractor's personnel will be required to go through an environmental induction programme before commencing work on site and this shall be reinforced through regular toolbox talks. The Contractor shall ensure that all personnel that work on site are familiar with and understand the requirements of the CEMPr.

5.2 Procedures for construction phase

Key procedures for the implementation and monitoring of the requirements of the CEMPr in the Construction Phase are outlined below, with relevant details provided in subsequent sections:

- The client shall undertake an initial site visit in conjunction with the Construction Manager, and the Contractors to advise on issues of environmental concern and agree on communication and reporting procedures;
- The EO shall facilitate an initial environmental awareness training workshop with key on-site staff regarding the importance of the CEMPr, prior to commencement of construction activities;
- The EO will inspect the site regularly to monitor and review the environmental performance of the Contractors against the commitments of the CEMPr;
- The EO will prepare weekly compliance checklist reports, detailing any environmental issues, non-compliance and actions to be implemented, to be submitted to the Environmental Manager;
- Where non-compliance with the CEMPr or Method Statements, or where environmental damage is noted by the Construction Manager, the EO will be formally notified of the required corrective action; and
- The Contractor will be expected to implement the required corrective action as detailed in the formal notification, and within the timeframes specified by the Construction Manager.

5.3 Environmental Awareness Training

Environmental awareness training courses should be provided to all personnel on site. It is incumbent upon the EO to ensure that all personnel are aware of the objectives and specific provisions of the CEMPr. The EO will undertake the environmental inductions for key personnel on site, after which the EO will provide training for all employees and Sub-contractors on a regular basis. The environmental training should include, amongst others, aspects such as:

- Environmental issues on site;
- Roles and responsibilities;
- The construction environmental management measures;
- Cultural awareness;
- Heritage discovery procedures; and
- How to report on encounters with any fauna on the construction site.

Courses shall be held during normal working hours and all attendees shall remain for the duration of the course and, on completion, sign an attendance register that clearly indicates participants' names. A copy of the register shall be handed to the Construction Manager.

The EO is to ensure that the telephone numbers of emergency services including the local firefighting services are displayed on site and are up at the Contractors site offices. The EO shall also provide suitable environmental signage on site; this includes information signs, prohibitory signs and warning signs.

5.4 Environmental Method Statements

A Method Statement is a document prepared by the Contractor and submitted to the Construction Manager setting out specific details regarding the plant, materials, labour and method the Contractor proposes using to carry out certain activities, usually activities that may have a harmful effect on the environment.

The purpose of a Method Statement is for the Contractor to provide additional details regarding the proposed methodology for certain activities and ensuring that these meet the requirements of acceptable environmental practice. This allows the CEMPr to be less prescriptive and affords the Contractor a certain amount of flexibility.

It is an extremely useful tool as it provides a clear and documented statement of the approaches that the Contractor will pursue to undertake an activity, particularly one that may have adverse environmental

impacts. It also provides a reference point to detect deviations from the agreed approach to each planned activity.

Each Method Statement will address environmental management aspects relevant to the activity and will typically provide detailed descriptions of items including, but not necessarily limited to:

- The nature, timing and location of activities;
- Procedural requirements and steps;
- Management responsibilities;
- Material and equipment requirements and storage on site;
- Transportation of equipment to and from site;
- Method for moving equipment/material while on site;
- Emergency response approaches;
- Response to compliance/non-conformance with the requirements of the CEMPr; and
- Any other information deemed necessary by the contractor.

Method Statements that will typically be required for this project include:

- Environmental awareness training preparation;
- Removal and Handling of Asbestos
- Material and equipment storage and delivery;
- Fuel/oil spills;
- Waste management;
- Erosion and storm water control;
- Traffic control;
- Dust control;
- Noise and light control;
- Construction camp establishment;
- Batching site selection and maintenance;
- Demarcation of site boundaries and No"-Go" areas; and
- Closure activities.

The Method Statements will be submitted by the EO to the Construction Manager not less than 14 days prior to the intended date of commencement of an activity. The Construction Manager shall approve and/or reject the Method Statement within 7 days. An activity covered by a Method Statement shall not commence until the Construction Manager has approved such a method and once approved, the Contractor shall abide by these Method Statements. Any activities not complying with what has been set out in the Environmental Method Statement will be stopped and the costs associated with this delay will be for the Contractor's account.

5.5 Non-compliance and Corrective Action

Should, under any circumstance, the contractor's activities pose any damage on the environment and not comply with measures as stipulated in the CEMPr, the contractor will be held responsible for such are taken to rectify such damage, at the contractor's expense. It is the duty of the Construction Manager to monitor compliance with the CEMPr, and report and notify the contractor of any non-compliance, highlighting the following:

- Details of the nature of the non-conformance;
- The actions to be taken to correct the situation; and
- The date by which each corrective action should be executed.

The Contractor will also be liable to produce a Corrective Action Plan, within which he/she will detail how the required corrective actions will be implemented. This plan will be submitted to the Construction Manager for approval prior to implementation. Once approved and the corrective measures have been carried out, the Construction manager will then be required to sanction the success or failure of the corrective action.

5.6 Incorporation into the Contract Documentation

The Construction Manager contractually engage the Contractor to undertake the construction works. The Contract will stipulate the requirement to implement the CEMPr. If compliance with the CEMPr is not achieved in any area, the EO or Construction Manager can suspend part or all of the works, as required.

If any Contractor or Sub-contractor is notified of sub-standard or non-compliant environmental conditions by the relevant party, and if that Contractor fails to correct those conditions and re-establish compliance with the CEMPr, this will constitute a breach of the contract. If advised of such a situation, the Construction Manager, will have the power to remove the Contractor and/or any of their employees from site on behalf of the Client.

5.7 Documentation and Records

All records related to the implementation of this CEMPr (e.g. field instruction book, environmental method statements) must be kept together in an area where it is safe and can be retrieved easily. These records should be retained by the Contractor and should at any time be available for scrutiny by any relevant authorities. The frequency and nature of reporting of environmental management performance will depend upon the nature of the activity and aspect that is being managed. Reporting may take several forms:

- Reports to Construction Manager/EO on critical issues that may arise;
- Compliance checklist reports on a weekly basis;
- Monthly reports on environmental performance and compliance or non -compliance;
- Performance reports on key indicators on a quarterly basis;
- Environmental monitoring reports to confirm whether or not environmental monitoring results fall within specified limits on the CEMPr; and
- Summary reports to external stakeholders- where applicable.

Reports and records to be kept are presented in the Table 2 below.

Table 2: Reports required during construction/operations

#	Report	Frequency	From	To	Aim / Objective
1	Environmental Audit Reports	Monthly	Contractor EO	Construction Manager, the Employer and DBSA	Detailed project compliance across all relevant legislation, identifying non-compliances, actions to be taken to rectify and timeframes to implement actions by responsible persons.
2	Corrective Action Plans	As required	Construction Manager/EO in the event of environmental non-conformance	EO	Detail how the required corrective actions will be implemented.
3	Incident Reports	As required	Construction Manager/EO in the event of an incident	EO	Report any environmental incidents, how they occurred, damage caused and how future incidents will be prevented.
4	Final environmental audit report	Within 30 days of completion of rehabilitation activities.	EO	The Employer and local Municipality	Detailed project compliance across all relevant legislation, identifying non-compliances, consolidation unresolved issues for final close out.
5	Close-out report	Within 30 days of site handover	EO/the Employer	Local Municipality	Assess site closure measures and provide recommendations for additional clean-up and rehabilitation measures.

6 ENVIRONMENTAL MANAGEMENT MEASURES

6.1 General Guidelines on Site

The following measures provide guideline solutions to frequently anticipated issues on most development activities:

- The prevention of any site degradation due to non-compliance, administrative or financial problems, and inactivity during the construction phase, illegal activities, delays caused by archaeological finds, etc. is ultimately the responsibility of the applicant/developer as stipulated under Section 28, of NEMA;
- The study area must be clearly defined, surveyed and cordoned according to the project authorisation. All workforce members and other construction personnel are not to go beyond the fenced mark;
- The Contractors must adhere to agreed and approved access points and haul roads;
- Damage to private or public property such as fences, gates and other infrastructure may occur at any time. All damage to be repaired immediately and to the satisfaction of the owner;
- Surrounding landowners and businesses must be informed of the starting date of construction as well as the phases in which the construction shall take place;
- The Contractor must adhere to all conditions of contract including this CEMPr;
- All private and public man-made structures near the project site must be protected against damage at all times and any damage must be rectified immediately;
- Proper site management and regular monitoring of site works must be conducted;
- Regular site inspections and good control over the construction process throughout the construction period must be conducted; and
- A positive attitude towards Environmental Management by all site personnel must be motivated through regular and effective awareness and training sessions.

6.2 Environmental Management Measures

The following table details the environmental management measures that have to be put in place for the various aspects of the project that may result in impacts, both negative and positive, on the receiving and surrounding environment. Environmental management measures for the construction phase are detailed in below. The environmental management tables also provide information on the frequency at which each aspect and management measure should be monitored, and the person responsible for implementing the management measures.

Table 3: Pre-construction and Construction Phase EMP

Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
PRE-CONSTRUCTION			
Construction commencement	<ul style="list-style-type: none"> It is recommended that written notification of commencement be given to the local Municipality no later than fourteen (14) days prior to the commencement of the activity. The notice should include a date on which it is anticipated that the activity will commence, as well as the relevant construction permit a reference number. 	Once-Off	The Employer (KZN DoE)
Permits and Permissions	<ul style="list-style-type: none"> The Employer must ensure that all licensing, permits or certificates required for the project are in place prior to the commencing of any activities on site. 	Once-off	The Employer
	<ul style="list-style-type: none"> Construction Manager must ensure that copies of all licensing, permits or certificates required are kept at the construction site camp. 	On-going	Construction Manager
Emergency Response Plan	<ul style="list-style-type: none"> Finalise Emergency Response Plan which should include: <ul style="list-style-type: none"> Responsibilities and procedures for emergencies such as fire, explosions, evacuations, spills and accidents requiring medical responses. Management measures for communities and individuals affected; and Communication procedures, including communication with potentially affected Construction Manager communities. 	Inspect Daily	Construction manager
Grievances	<ul style="list-style-type: none"> Develop grievance mechanisms for the recording and management of 	Inspect Weekly to	Contractor and

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>complaints and grievances. A sample Public Grievance form is found in Appendix 1.</p>	<p>ensure that complaints are well recorded and addressed</p>	<p>Construction Manager</p>
Traffic	<ul style="list-style-type: none"> The management measures from the Traffic Assessment must be implemented as detailed in that report. General traffic control measures should be implemented as follows: <ul style="list-style-type: none"> The Contractor is to implement and enforce strict speed controls and inform construction vehicles of relevant speed limits where possible. Drivers are to be informed of designated no-go areas and are to limit movement therein. Reduce additional safety and congestion concerns e.g. install and maintain official traffic signaling (i.e. signs calling attention to the works, speed restrictions, road diversion) on local roads surrounding the development before and during the execution. Erect speed limit signage at the access points and around the site. 	<p>Once-off</p>	<p>Contractor</p>
Records and administration	<p>Ensure the following are up to date and available on site:</p> <ul style="list-style-type: none"> A complaint register; An approved method statement; Copies of monthly checklists, compliance reports, incidence reports and corrective action reports; Photographs of areas of concern (photos of non-compliance areas as well 	<p>Inspect weekly to ensure that complaints are well recorded and addressed</p>	<p>Construction Manager/EO</p>

Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>corrective action); and</p> <ul style="list-style-type: none"> Attendance registers of environmental awareness training. 		
Recruitment of Labour	<ul style="list-style-type: none"> Where possible, the contractor must make use of local labour in support of the local economy. Advertise employment opportunities adequately, so as not to limit application opportunities. Implement a transparent process of recruiting construction staff, following pre-established and accepted criteria. 	Once-off	Contractor/Construction Manager
Site Establishment	<ul style="list-style-type: none"> The Contractor must, in agreement with the Construction Manager, decide upon an area for the location of a construction camp. The construction camp should be properly demarcated and fenced, and be adequately sized, with sufficient space for site offices, construction vehicles, equipment, material and waste storage areas. 	A visual Inspection	Construction Manager
	<ul style="list-style-type: none"> The construction camp must be located in an area with minimal damage or disturbance to the environment. Establish no-go areas- where no construction personnel, equipment/machinery or vehicles are permitted. 	A visual Inspection	Contractor/Construction Manager
	<ul style="list-style-type: none"> The contractor shall establish his construction camps, offices, workshops, and any other facilities on the site in a manner that does not adversely affect the environment. However, before construction can begin, the contractor shall 	Once-off	Contractor/Construction Manager

Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>submit to the Construction Manager for his approval, an Environmental Site Establishment and Layout Method Statement with plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the contractor proposes to put in place.</p> <ul style="list-style-type: none"> The plans shall detail the locality as well as the layout of the waste treatment facilities for litter, kitchen refuse, sewage and workshop-derived effluents. Regardless of the chosen site, the contractor's intended mitigation measures shall be indicated in the Method Statement. 		
Site Housekeeping	<ul style="list-style-type: none"> The construction camp should be kept clean and orderly at all times. 	Weekly inspections of the state of the concentration camp	Construction Manager and Contractor
CONSTRUCTION			
Construction Activities	<ul style="list-style-type: none"> The office building construction must be consistent with the requirements of SPLUMA, Local Municipal By-laws and the conditions of the Zoning Certificate (where applicable). 	Once-off	The Employer, Construction Manager
Ablution Facilities	<ul style="list-style-type: none"> Provide ablution facilities (i.e. chemical toilets)- if required. Should portable toilets be used, these should be secured to the ground within the site camp to the satisfaction of the Construction Manager/EO to prevent them toppling due to wind or any other cause. Provide suitable toilet facilities which are covered, closed, ventilated and should 	Weekly inspections	Contractor

Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>offer hand-washing facilities. 1 toilet per 25 workers should be provided, although 1:15 is preferred.</p> <ul style="list-style-type: none"> Toilets should be located within a radius of 100 m for construction staff in areas of concentrated construction activities. If workers are not making use of the toilet facilities due to distance from work areas, additional toilets will need to be provided. <ul style="list-style-type: none"> Ablution facilities will be available at the site camps as well as around the construction areas. Maintain toilets in a hygienic state (i.e. toilet paper to be provided, toilets to be cleaned and serviced regularly (at least twice- monthly by an appropriate waste contractor), and toilets to be emptied before long weekends and builders' holidays). The waste shall be disposed at a licensed waste disposal facility by the appointed removal contractor. Ensure that no spillages occur when the toilets are cleaned or emptied. Repeated incidents of spillage of chemicals and or waste (i.e. more than one incident), will require toilets to be placed on a solid base with a sump. Urination or defecation on site, other than at the designated ablution facilities, is strictly prohibited. 		
Break Areas	<ul style="list-style-type: none"> Designate areas for personnel to eat during breaks within the site boundary. 	Monitor weekly	Contractor
Handling of	<ul style="list-style-type: none"> Imported materials shall be free of weeds, litter and contaminants. Materials to 	On-going	Contractor

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
Construction Materials	<p>be obtained from reputable commercial sources.</p> <ul style="list-style-type: none"> • Stockpile areas shall be approved by the Construction Manager/EO before any stockpiling commences. • Where possible, stockpiles shall be located in sheltered areas where they are not exposed to the erosive effects of the wind. • Stockpiles shall not exceed 2m in height. 		
Vegetation Clearing	<ul style="list-style-type: none"> • The extent of construction works must be limited to the development footprint and the designated buffer area. • Areas to be cleared need to be clearly marked and clearing of vegetation must only take place within these demarcated areas. • Ensure that no vegetation is removed or disturbed outside the delineated construction site boundary. • Limit clearing of vegetation to those areas within the footprint of construction activities and bulk earthworks. • Retain as much indigenous vegetation as possible so it can be replanted during rehabilitation. • Clear as much alien vegetation as possible to retain nutrients for indigenous vegetation. 	On-going	Contractor
Erosion	<ul style="list-style-type: none"> • Ensure that erosion management and sediment controls are strictly implemented from the beginning of site clearing activities. 	Visual inspection	Construction Manager

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<ul style="list-style-type: none"> All topsoil stockpiles must be protected against wind, erosion and seeds, i.e. by use of shade cloth or netting. Topsoil stockpiles should not exceed 2 meters in height. 		
Extensive earth works	<ul style="list-style-type: none"> The extent of construction works must be limited to the development footprint and the designated buffer area. Earth works should be done in accordance with the construction schedule. Vehicles and machinery to be used by authorised/permited personnel. Care should be taken to avoid health and safety incidents. Place signs and/or danger tape around exposed excavations to warn the public of the inherent dangers. <ul style="list-style-type: none"> This is with particular reference to excavations exceeding 1-1.5m in depth. Excavated material to be placed in a designated place outside of the construction area 	On-going	Contractor
Soil disturbance	<ul style="list-style-type: none"> Topsoil stockpiles be protected against wind, erosion and seeds, i.e. by use of shade cloth or netting. Topsoil stockpiles should not exceed 2m in height. All soils compacted as a result of construction activities falling outside of project footprint areas should be ripped and profiled. Sloped areas can be temporarily stabilized during construction using geotextiles. 	On-going	Construction Manager/ECO/ Contractor

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
Soil and groundwater contamination	<ul style="list-style-type: none"> All exposed earth should be rehabilitated promptly with suitable vegetation to stabilize the soil. It is recommended that appropriate storm water management system must be implemented during construction. The plan must include measures to ensure that all runoff from the forecourt is directed into the existing storm water management system. All construction vehicles should be properly maintained to prevent leaks. Cement mixing must be confined to a designated area and must be done on an impervious surface. Any fuel stored on site must be kept in a bunded containment area and be clearly marked. Drip trays are to be utilized during daily greasing and re-fuelling of machinery and to catch incidental spills and pollutants. Drip trays are to be inspected on a weekly basis for leaks and effectiveness and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. 	On-going	Construction Manager/ECO/ Contractor
Spill Prevention	<ul style="list-style-type: none"> Potentially hazardous materials used during the construction phase (including cement and solvents) must be housed under cover (where practical) and utilised in bunded areas, where necessary. It is recommended that vehicles and construction equipment be maintained off- 	On-going	Contractor

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>site as far as possible.</p> <ul style="list-style-type: none"> • Refuel and service vehicles on an impermeable surface; • Make use of a drip tray/ sand tray under the fuel nozzle when refuelling vehicles or equipment on site; • Place drip trays/sand trays under engines of vehicles or mechanical equipment when parked or stored overnight or longer; • Make all relevant staff aware of the need to prevent spills, leaks and disposal of contaminated water onto the ground and ensure that they are adequately trained to take corrective action should an accidental spill occur. • Accidental oil and fuel spillages to be cleaned up immediately by the Contractor, placed in sealed containers and disposed accordingly. • Spill kits must be made available and the correct procedures followed during the clean-up of spills. • Any significant spills on-site must be reported to the Local Municipality and must be remediated as per the requirements of the CEMP. 		
Disruption to existing critical service infrastructure	<ul style="list-style-type: none"> • The construction schedule should be adhered to ensure that construction occurs timeously. • The extent of construction works must be limited to the development footprint and the designated buffer area to limit disruption to other airport operations. • Construction activities will be restricted to hours that will cause the least 	On-going	Contractor

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	disruption.		
Visual impacts	<ul style="list-style-type: none"> Construction activities will be restricted to hours that will cause the least disruption. Lighting on site is to be sufficient for safety and security purposes No stockpiles should exceed 2m in height. Wind-blown dust from stockpiles and construction activities, should be controlled. Limit exposed areas (removal of vegetation) to the project footprint. Keep all areas neat, clean and organized in order to portray a general tidy appearance. The construction site and material stores, should be kept tidy. Measures to control wastes and litter should be included in the contract specification documents. All rubbish and rubble removed to a recognized waste facility. A certificate of disposal must be obtained for any waste that is disposed of. The construction camp must be located as far from other buildings as possible. 	Weekly	EO
Noise and light pollution	<ul style="list-style-type: none"> Construction activities will be restricted to hours that will cause the least disruption. Vehicles and machinery to be kept in good working order Mechanical equipment with lower sound power levels will be selected to ensure that the permissible occupation noise-rating limit is in accordance with the levels stipulated for the particular zoning area. 	Weekly	EO

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<ul style="list-style-type: none"> Equipment to be fitted with silencers as far as possible to reduce noise. All equipment to be adequately maintained and kept in good working order to reduce noise. Introduce a formal recording system/grievance mechanism to capture public perceptions and complaints with regard to noise. Lights that are to be installed at the site camps should be of the correct wattage and brightness so as not to disturb airplane operations-especially at night. Track investigation actions and introduce corrective measures for continuous improvement. 		
Traffic disruption	<ul style="list-style-type: none"> It is recommended that the public to be notified 7 days prior to construction commencing. Strict adherence to working hours must be maintained. Limiting the number of vehicles entering and exiting the construction site will ensure that traffic is kept to what is needed for construction and monitoring purposes. Access roads should be planned ahead of time, with the public receiving sufficient warning of impending traffic. Alternative routes to be provided for local motorists as far as possible should road closures be required. Flagmen to be posted when construction works are being undertaken adjacent 	On-going	Construction Manager/EO

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>to roads.</p> <ul style="list-style-type: none"> • Signage is to be displayed indicating construction activities. • Any damage caused to surrounding roads as a result of construction activities must be repaired as soon as possible to prevent further deterioration to the private or public road network. • Construction vehicles and plant must not be permitted outside of the demarcated construction area. 		
Dust fallout	<ul style="list-style-type: none"> • Minimise the extent of open areas. • Retain existing vegetation for as long as possible and only clear areas when required. • Wash the paved surfaces within the construction area; • Minimise haulage distances; • Apply water to gravel roads with a spraying truck when required; • Environmental friendly soil stabilizers may be used as additional measures to control dust • Topsoil stockpiles should be covered to prevent the surface soil from being blown away. • Minimise material handling and the frequency of disturbance of stockpiles to minimise wind erosion. • Dust suppression techniques to be used on all dust generating surfaces. 	<p>On-going</p> <p>Inspection A register of speeding complaints should be registered by the Construction Manager</p>	<p>Construction Manager/Contractor</p>

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<ul style="list-style-type: none"> ○ Pre-water areas earmarked for disturbance, if possible. • The speed of construction vehicles to be restricted to 40km/h within the construction area or near stockpiles. • Trucks transporting any form of soil or waste should be covered with a canvas. • Implement a system of reporting excessive dust conditions by construction personnel (as instructed through Environmental Awareness Training); and • Water for dust control shall be taken only from approved sources. 		
Health and Safety and security	<ul style="list-style-type: none"> • The construction management needs to communicate the commencement and duration of construction activities to the community. • Clear signage needs to be put up to make and keep the community awareness of construction activities so as to prevent any hazardous occurrences. • Provide adequate safety warning signage on the roads. • Construction workers and vehicle operators must take heed of normal road safety regulations, thus all personnel must obey and respect the law of the road. A courteous and respectful driving manner must be enforced and maintained so as not to cause harm to any individual. • A safe designated speed limit must be set by the project managers to limit possible road strikes and accidents. • Construction paths must be clearly demarcated. • Demarcate and open trenches site during construction. 	On-going	Construction Manager/EO

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<ul style="list-style-type: none"> Enforce the use of appropriate Personal Protective Equipment at all times (i.e. hard hats, steel capped safety boots, protective goggles). Security to be provided (where possible) after hours to protect equipment in the construction camp. No construction staff must be permitted to trespass on private land. Any construction personnel found to be trespassing on private land must be immediately subjected to a disciplinary action. Access to site to be strictly controlled. 		
Signage	<ul style="list-style-type: none"> The construction management needs to communicate the commencement and duration of construction activities to the community. Clear signage needs to be put up to make and keep the community aware of construction activities so as to prevent any hazardous occurrences. Provide adequate safety warning signage on the roads. Display telephone numbers of emergency services, including the local firefighting service, in the Contractor's office and at the entrance to the site. Contact the emergency services in the area in the case of an emergency. Provide suitable emergency and safety signage on site, and demarcate any areas which may pose a safety risk (including hazardous substances, deep excavations etc.). 	Visual inspection	Construction Manager/ EO
Traffic	<ul style="list-style-type: none"> Arrange for deliveries to be made during off peak hours. 	Traffic Visual	Contractor

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
		Assessment, Visual inspections	
	<ul style="list-style-type: none"> Have strict adherence to working hours. 	Daily	Contractor
	<ul style="list-style-type: none"> Limiting the number of vehicles entering and exiting the construction site will ensure that traffic is kept to what is needed for construction. Speed limits on site should be reduced to 20 km/h. Install and maintain official traffic signalling on local roads surrounding the development during the construction phase in conjunction with local traffic authorities Inform drivers of construction vehicles of relevant speed limits and implement speed control mechanisms where possible. Have suitable equipment and personnel available to rapidly deal with traffic incidents in accordance with the Road Incident Emergency Response Plan. 	Weekly	Contractor
No-Go Areas	<ul style="list-style-type: none"> Confine all vehicles to designated access roads and parking areas. Prevent use of vehicles in “No Go” Areas. Limit movement of machinery and construction vehicles to the defined network of road accesses. 	Visual Inspection	Construction Manager/EO
Asphalt / Bitumen	<ul style="list-style-type: none"> Prevent over spray of bitumen products outside of the road surface. 	Daily	Contractor
Waste	<ul style="list-style-type: none"> An integrated waste management approach must be implemented that is based 	Weekly	Construction Manager,

Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate. Any solid waste shall be disposed of at a landfill licensed in terms of section 20 (b) of the National Environmental Management Waste, 2008 (Act 59 of 2008).</p> <ul style="list-style-type: none"> Minimise waste generation, e.g. by providing re-usable items and refillable containers (e.g. for drinking water). Waste bins are to be located at the construction camp and construction sites and must have clear markers saying the type of waste (general or hazardous) contained therein. Bins to have secured lids to prevent waste from being blown into the surrounding area. Spoil that won't be used as backfill will be disposed of at a registered landfill site, suitable for the storage of such waste material. Hazardous materials will be generated if there are spillages during construction and maintenance periods. This waste should be cleaned up using absorbent material provided in spill kits on site and must be disposed of accordingly at a hazardous waste landfill. The storage area for hazardous material must be concreted, bunded, covered, labelled and well-ventilated Waste generated by construction workers must be collected and disposed of 		Contractor and EO

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>regularly at the nearest registered landfill.</p> <ul style="list-style-type: none"> Records of all waste being taken off site must be recorded and kept as evidence Evidence of correct disposal must be kept. Burning of waste material will not be permitted. Absorbent materials used to clean up spillages should be disposed of in a separate hazardous waste bin. On-site chemical toilets will be provided for domestic purposes during construction phase. The contractors will be responsible for the maintenance of the chemical toilets. Should any spills or incidents occur; the material will be cleaned up immediately and disposed of appropriately. All incidents must be reported to the responsible site officer as soon as it occurs. 		
Concrete/Cement Work	<ul style="list-style-type: none"> Use Ready-Mix concrete rather than batching on site where possible. Ensure that no cement truck delivery chutes are cleaned on site. Cleaning operations are to take place off site at a location where wastewater can be disposed of in the correct manner. If this is not possible a suitable washing facility is to be developed on site in consultation with the EO. Batch cement in a bunded area within the boundaries of the development 	On-going	Contractor, EO

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>footprint only (where unavoidable).</p> <ul style="list-style-type: none"> • Ensure that cement is mixed on mortar boards and not directly on the ground (where unavoidable). • Physically remove any remains of concrete, either solid, or liquid, immediately and dispose of as waste. • Place cement bags in bins with lids and dispose of bags as waste to a licensed waste disposal facility. • Contaminated water from batching areas shall be contained and sediments allowed to settle before being disposed of as waste water. 		
Hazardous Materials	<ul style="list-style-type: none"> • Keep relevant Material Safety Data Sheets (MSDS) on site for all potentially hazardous substances (as defined in the regulations for hazardous chemical substances). In the event of an emergency, procedures detailed in the MSDS shall be followed. • Maintain a register of all hazardous substances stored on site. • Store all hazardous substances (including hazardous waste substances e.g. oils, bitumen, hydraulic fluids) within secondary containment in a suitable storage facility. Major stocks of hazardous materials other than fuel should preferably be stored off-site. • No hazardous substance shall be disposed of on site. • Ensure that hazardous substances (including cement) are not placed directly on 	On-going	Contractor, EO

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	the ground. <ul style="list-style-type: none"> Develop (or adapt and implement) procedures for the safe transport, handling and storage of potential pollutants especially asbestos. 		
Asbestos Management	<ul style="list-style-type: none"> Appoint competent person to undertake an asbestos risk assessment which must, as an outcome, have a risk categorisation based on the potential for exposure to asbestos for each item of asbestos-containing material, which must be derived from the following: <ul style="list-style-type: none"> (a) The health impacts of asbestos; (b) the number of persons potentially exposed at the workplace; (c) the potential for damage or disturbance of asbestos-containing materials at the workplace, also by maintenance activities, potential incidents and normal occupant activities; and (d) the condition of asbestos-containing material, including state of deterioration Following the completion of the risk assessment, a asbestos management plan must be compiled and should include at least: (a) A procedure that contains at least measures related to— (i) the implementation of regulations 3, 4, 5, 8 and 20 at the workplace; (ii) the repair, removal and management of asbestos-containing materials; and (iii) the implementation of the Regulations for Prohibition of the Use, Manufacturing, Import and Export of Asbestos and 	Ongoing	Contractor

Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>Asbestos-containing Materials, 2007; (b) where asbestos-containing materials have been identified in the inventory of asbestos in place, a specific procedure which will, as far as is reasonably practicable, reduce the risk of exposure of employees, as well as incidental asbestos exposure, for the following scenarios- (i) Incidents; (ii) emergencies; (iii) removal work; and (iv) repair work; and (c) a policy, procedure and implementation plan for phasing out existing asbestos-containing materials at the workplace, which considers the following:</p> <ul style="list-style-type: none"> (i) The principle of 'reasonably practicable'; and (ii) reasons for decisions. No employer, self-employed person or asbestos client may carry out any type 1 asbestos work unless the Chief Director: Provincial Operations has been notified in writing of the location, venue and contact details of where the asbestos work will be done, at least seven days prior to commencement of such work Ensure that the approved plan of work is submitted to the Chief Director: Provincial Operations at least seven days prior to commencement of asbestos work Any asbestos-contaminated soil or land contaminated with asbestos waste 		

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>must be clearly demarcated and signposted using the asbestos warning signage specified in Appendix 2.</p> <ul style="list-style-type: none"> Any regulated asbestos area must be clearly demarcated using the pictograms and signs specified in Appendix 2. Keep records of all inventories of asbestos in place, asbestos risk assessments, air monitoring results, medical surveillance reports, disposal certificates and clearance certificates. Comply with Waste and Asbestos Removal Method Statement. 		
Storage and Dispensing of Fuel	<ul style="list-style-type: none"> Identify a suitable designated area for the fuel storage tanks. Store fuel in accordance with relevant SABS specifications and all fuel storage tanks shall be provided with adequate bunding (110% of the largest tank). The bund floor shall be impermeable and sloped to a sump to enable removal of spilled fuel and contaminated water. Refuel and service vehicles on an impermeable surface; Make use of a drip tray / sand tray under the fuel nozzle when refuelling vehicles or equipment on site; Use appropriately sized drip trays for all refuelling and/or repairs done on 	On-going	Contractor, EO

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>machinery – ensure these are strategically placed to capture any spillage of fuel, oil, etc.</p> <ul style="list-style-type: none"> • Adequate fire-fighting equipment shall be provided at the fuel storage and dispensing areas. • Should any spills or incidents occur; the material will be cleaned up immediately and disposed of appropriately. • All incidents must be reported to the responsible site officer as soon as it occurs. 		
Protection of Heritage Resources	<ul style="list-style-type: none"> • If any structure is older than 60 years, the structure should be recorded before any destruction/rehabilitation. After recording, a permit for its destruction (if necessary) must be obtained from SAHRA/ AMAFA. • Should graves, fossils or any archaeological artefacts be identified during construction, work on the area where the artefacts were found, must cease immediately and it should immediately be reported to a heritage practitioner or local museum so that an investigation and evaluation of the finds can be made. • Chance find protocols must be in place, as specified in Appendix 3. 	As necessary	Contractor
Protection of Palaeontology Resources	<ul style="list-style-type: none"> • Should any palaeontology features be identified during construction, work on the area where the artefacts were found, must cease immediately and it should immediately be reported to a specialist so that an investigation and evaluation of the finds can be made. 	As necessary	Contractor

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<ul style="list-style-type: none"> Chance find protocol must be in place, as specified in Appendix 3. 		
Fire Control	<ul style="list-style-type: none"> No fires are permitted on site. Ensure that no smoking is permitted on the site except for within a designated area in the site camp (to be included in the site camp Method Statement). Suitable firefighting equipment must be readily available in this area. Appoint a fire officer who shall be responsible for coordinating emergency response in the event of a fire. Ensure that all personnel on site are aware of the location of firefighting equipment on the site and how the equipment is operated. Suitably maintain firefighting equipment. 	On-going	Contractor, EO
Surface run-off	<p>The Contractor shall be aware that, apart from run-off from overburden emplacements and stock piles, storm water can also be contaminated from batch plants, workshops, vehicle wash-down pads, etc., and that contaminates during construction can include hydrocarbons from fuels and lubricants, sewerage from employee ablutions, etc.</p> <p>Construction activities such as surface grading and excavation will disturb surface areas on-site. This will increase the potential for soil erosion and subsequent sediment transport during periods of precipitation run-off or when excavation dewatering is required. Construction activities also have the potential to change</p>	On-going	Contractor

Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>local surface drainage and sediment transport patterns, site floodplain delineation, and percolation rates into the soil.</p> <ul style="list-style-type: none"> Contractors must effect good housekeeping in their areas to prevent contamination of drainage water The Contractor shall clear stagnant water The Contractor shall ensure that no contaminated surface water shall flow off-site as a result of Contractor operations. Silt traps shall be constructed to ensure retention of silt on site and cut-off ditches shall be constructed to ensure no run-off from the site except at points where silt traps are provided If applicable, the Contractor shall be responsible for collection, management, and containment within the site boundaries of all dewatering from all general site preparation activities. The dewatering water shall be contained within the site boundaries by sequentially pumping or routing water to and from sub-areas within the site as the construction activities proceed. No discharge of dewatering water to off-site land or surface water bodies will be allowed. On-site drainage shall be accomplished through gravity flow. It is recommended that the surface drainage system consist of mild overland slopes, ditches, and culverts. The graded areas adjacent to buildings shall be sloped away with a 5% slope. Other areas shall have a minimum slope of 0,2% or as otherwise indicated. 		

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Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<ul style="list-style-type: none"> It is recommended that both structural and non-structural (vegetative) erosion control measures be designed, implemented, and properly maintained in accordance with best management practices which will include the following: <ul style="list-style-type: none"> Scheduling of activities to minimise the amount of disturbed area at any one time Limiting construction traffic and/or avoidance thereof on access roads and areas to be graded to the extent feasible at drainage ditches Compacting loose soil as soon as possible after excavation, grading, or filling Managing run-off during construction The Contractor shall be responsible for checking and maintaining all erosion and sedimentation controls 		
Closure and rehabilitation	<ul style="list-style-type: none"> Rehabilitate affected areas on the site as soon as construction activities in the relevant area are completed, rather than undertaking all rehabilitation at the end of the contract period. Revegetate disturbed areas with indigenous species- where applicable Use harvested topsoil for rehabilitation. Remove all construction equipment, vehicles, equipment, waste and surplus materials, site office facilities, temporary fencing and other items from the site. Clean up and remove any spills and contaminated soil in the appropriate 	On-going	Contractor

Management Aspect	Mitigation Measure/ Actions to be implemented	Monitoring Frequency	Responsibility
	<p>manner.</p> <ul style="list-style-type: none"> Do not bury discarded materials on site or on any other land not designated for this purpose. Rehabilitate areas adjacent to the site (if disturbance is unavoidable) to at least the same condition as was present prior to construction. 		

7 REHABILITATION

All working areas shall be rehabilitated once construction work has been completed and before the team leaves the site. This includes closure and rehabilitation of temporary access routes. Any areas that the Construction Manager/EO believes may have been impacted upon or disturbed, shall be rehabilitated to the satisfaction of the Construction Manager. Once construction is complete the Contractor shall clear everything from the site not forming part of the operational site. The area to be rehabilitated shall. The table below provides measures to be implemented in the post-construction phase.

Aspect/Impact	Rehabilitation Measure	Monitoring Frequency and Responsibility
Removal of construction structures	<ul style="list-style-type: none"> Clear and completely remove from site all construction plant equipment, storage containers, signage, temporary fencing, temporary services, fixtures and any other temporary works; and Ensure that all access roads utilised during construction (which are not earmarked for closure and rehabilitation) are returned (as far as possible) to their state prior to construction. 	Once-off, Construction Manager
Topsoil replacement	<ul style="list-style-type: none"> Replace and redistribute stockpiled topsoil together with herbaceous vegetation, overlying grass and other fine organic matter in all disturbed areas of the construction site, including temporary access routes and roads. Replace topsoil to the original depth (i.e. as much as was removed prior to construction). Prohibiting the use of topsoil suspected to be contaminated with the seed of alien vegetation (i.e. black wattle). Alternatively, the soil is to be sprayed with specified herbicides. Backfill planting holes with excavated material / approved topsoil, thoroughly mixed with weed free manure or compost (per volume about one quarter of the plant hole), one cup of 2:3:2 fertiliser and an approved ant and termite poison. Where local soil has poor drainage, broken rock (Approx. 75 mm in diameter) must be placed to a depth 	Once-off, Construction Manager



Aspect/Impact	Rehabilitation Measure	Monitoring Frequency and Responsibility
	of 150mm at the bottom of the planting hole prior to planting and backfilling with approved plant medium mixture.	
Waste and Rubble Removal	<ul style="list-style-type: none"> • Clear the site of all inert waste and rubble, including surplus rock, foundations and batching plant aggregates. • Load and haul excess spoil and inert rubble to fill in borrow pits/dongas or to dump sites indicated/approved by the EO. • Remove from site all domestic waste and dispose of in the approved manner at a registered waste disposal site. 	Once-off, Construction Manager
Solid & Hazardous Waste	<ul style="list-style-type: none"> • Store hazardous waste as indicated in the CEMP. • Dispose of all hazardous waste not earmarked for reuse, recycling or resale at a registered hazardous waste disposal site. • Remove from site all temporary fuel stores, hazardous substance stores, hazardous waste stores and pollution control sumps. Dispose of hazardous waste in the approved manner. • Do not hose oil or fuel spills into a storm water drain or sewer, or into the surrounding natural environment. • Dispose of all visible remains of excess cement and concrete after the completion of tasks. Dispose of in the approved manner (solid waste concrete may be treated as inert construction rubble, but wet cement and liquid slurry, as well as cement powder must be treated as hazardous waste). 	Once-off, Construction Manager
Erosion protection	<ul style="list-style-type: none"> • Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction site. • Retain shrubbery and grass species wherever possible. 	After rainfall events, the Employer

8 CONCLUDING RECOMMENDATIONS

In implementing the proposed project, and this CEMPr, the following is recommended:

1. Maintaining the existing infrastructure as far as possible- like the stormwater management system, roads, fences/boundaries and other structures.
2. Managing the operational areas in accordance with the integrated and spatial development plans and implementing the environmental protection measures detailed therein.
3. Implementing the CEMPr to guide the pre-construction and construction phases and to provide a framework for the on-going assessment of environmental performance.
4. Maximising the employment of local people and the procurement of local resources during operations to ensure maximum benefit to the provincial/local economy.

APPENDIX 1: PUBLIC GRIEVANCE RESPONSE FORM

A.1 PUBLIC GRIEVANCE RESPONSE FORM

Reference Number		Date	
Corrective action required?			
Immediate:	YES / NO		
If YES, what was done:			
If NO, describe Action Plan			
Task:			
Responsible:			
Schedule:			
Date Implementation:			
Successful?	YES / NO		
Describe communication to complainant:			
Signature of person responsible		Date	
Signature of Contractor		Date	
Signature of EO		Date	
Notes on lessons learnt:			

APPENDIX 2: ASBESTOS WARNING SIGNS

Asbestos warning labels and signs

1.1 Asbestos warning sign



1.2 Asbestos warning labels

ASBESTOS



DANGER

MAY CAUSE CANCER THROUGH INHALATION

CAUSES SKIN IRRITATION

Do not handle until all precautions described in the Asbestos Regulations and Safety Data Sheet have been read and understood. Do not breathe asbestos dust. Wear the correct type of respirator that fits properly. When showering, take off the disposable gloves and your overall before removing the respirator. Dispose of asbestos waste in line with the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).

APPENDIX 3: HERITAGE AND PALAEOONTOLOGICAL CHANCE FIND PROTOCOLS

1. PURPOSE

Potential impacts on heritage resources can occur during construction as a result of unearthing during construction. This protocol outlines the procedures to be followed in the event that a heritage resource is uncovered.

Palaeontological finds

Monitoring Programme for Palaeontology is to commence once the excavations for all structures and infrastructure begin. The following procedure is only required if fossils are seen on the surface and when excavations commence.

1. When excavations begin the rocks must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (silicified wood, plants, insects, bone, shells) should be put aside in a suitably protected place. This way the construction activities will not be interrupted.
2. Where possible, photographs of similar fossils must be provided to the contractor to assist in recognizing the fossil plants and bones that might be encountered on site. This information must be built into the EMP's training and awareness plan and procedures.
3. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.
4. If there is any possible fossil material found by the Contractor/environmental officer then a qualified palaeontologist should visit the site to inspect the selected material and check the excavations where feasible.
5. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site, a South African Heritage Resources Agency (SAHRA) permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.
6. If no good fossil material is recovered, then any site inspections by the palaeontologist will not be necessary.
7. If no fossils are found and the excavations have finished, then no further monitoring is required.

Archaeological finds

If you believe that you may have encountered any archaeological materials, stop work in the area and follow the procedure below:

1. The heritage resource must be avoided and all activities in the immediate vicinity temporarily ceased.
2. A suitably qualified specialist must be informed and commissioned to consider the heritage resource, either via communicating with the Environmental Officer via telephone or email, or based on a site visit.
3. Appropriate measures are to be provided by a qualified specialist towards immediate management of the heritage resource.

4. Should the specialist conclude that the find is a heritage resource protected in terms of the NRHA (1999) Sections 34, 36, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), the specialist must notify SAHRA on behalf of the Developer.
5. If required by SAHRA, the specialist must conduct a HIA in terms of NHRA Section 38 that must include rescue actions/excavations.

Graves

Should any unmarked human burials/remains be found during the course of construction:

1. Work in the immediate vicinity should cease and the find must immediately be reported to the archaeologist, or the South African Heritage Resources Agency (SAHRA).
2. Where human remains are part of a burial they would need to be exhumed under a permit from SAHRA (for pre-colonial burials as well as burials later than about AD 1500).
3. For newer graves, should the specialist conclude that the find is a heritage resource protected in terms of the NHRA (1999) Section 35 and NHRA (1999) Regulations (Regulation 38, 39, 40) SAHRA may require that an identification of interested parties, consultation and /or grave relocation take place;
4. Consultation must take place in terms of NHRA (1999) Regulations 39, 40, 42;
5. Grave relocation must take place in terms of NHRA (1999) Regulations 34.
6. These measure should be undertaken by a qualified archaeologist, and in accordance with relevant legislation, permitting, statutory permissions and subject to any local and regional provisions, laws and by-laws pertaining to human remains.
7. If required by current, relevant legislation, a full social consultation process should occur in conjunction with the mitigation of cemeteries and burials.
8. Under no circumstances may burials be disturbed or removed until such time as necessary statutory procedures required for grave relocation have been met.