



Construction Environmental Management Plan (CEMP)

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DISTRIBUTION

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APPROVAL

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| Name | Designation | Role | Signature | Date |
|------------|--|-------------|-----------|------|
| V Moonieya | SHEQ Manager | Verified by | | |
| N Makhoba | Executive Manager: Corporate Affairs & SHE Management Representative | Approved by | | |

FOREWORD

The East London Industrial Development Zone (SOC Ltd) (ELIDZ) encourages sustainable environmental management practices in the East London Industrial Development Zone (IDZ). This applies to all planning, design, construction and operation of the ELIDZ.

The Strategic Environmental Assessment (SEA) for the ELIDZ - completed in November 1997 by the CSIR - recommended that a series of principles and guidelines be applied to minimize negative environmental impacts and enhance the positive environmental impacts during the planning of the ELIDZ. These conditions and guidelines (as part of the Draft SEA) were submitted for public comment and, revised accordingly.

The CEMP incorporates specifications derived from recommendations in the SEA, ELIDZ Rezoning Environmental Impact Assessment (EIA) and Comments Report, Department of Economic Affairs, Environment and Tourism's Conditions of Approval for the rezoning EIA, together with specifications for 'good environmental practice' for construction work.

ENVIRONMENTAL POLICY

The East London Industrial Development Zone (ELIDZ) (SOC) Ltd is a world class operator of a prestigious industrial complex where highly competitive organizations thrive on streamlined business benefits and stimulate regional economic growth. ELIDZ aims to apply world-class environmental management practices within its Industrial Development Zone (IDZ), hence becoming the model for similar developments throughout Africa. The East London IDZ (ELIDZ) shall be developed and operated in a manner, which is economically, socially acceptable and sustainable. ELIDZ (SOC) Ltd recognizes that Environmental Management is an integral part of its overall business performance as any failure in this area will negatively impact on the Organization, its employees, tenants, contractors and the public.

The ELIDZ (SOC) Ltd is committed to striving for environmental best practice in all phases of development by:

1. Complying with all applicable environmental legislation, government policies and any other requirements that pertains to the Industrial Development Zone (IDZ);
2. Encouraging the participation of interested and affected parties in all phases of development of the IDZ;
3. Monitoring all tenants' activities within ELIDZ's jurisdiction that could have potential adverse impacts for the environment.
4. Avoiding or limiting the disturbance of landforms, ecosystems and loss of biological diversity through all phases of development and operation;
5. Promote the responsible use of water, energy and other non-renewable natural resources where feasible;
6. Preventing pollution and waste where feasible.
7. Limiting potentially detrimental impacts of the IDZ on neighbouring communities.
8. Continual improvement of the Environmental Management System

These objectives focus on the planning, design and development and operations phases of the IDZ.

In order to achieve the aforementioned objectives, the ELIDZ (SOC) Ltd will develop and

maintain an Environmental Management System according to the principles contained in ISO 14001.

This policy will be communicated to all employees and contractors working for or on behalf of the ELIDZ.

Top Management take full responsibility for the Environmental responsibility of the ELIDZ (SOC) Ltd and hereby assert that adherence to this Environmental Policy is mandatory to all employees, contractors and visitors within the ELIDZ. Top Management, hereby, further pledge on behalf of the ELIDZ, to integrate Environmental considerations into our decision-making processes.

The environmental policy will be reviewed periodically as need arise to ensure it remains relevant and appropriate to the ELIDZ and will be distributed to the public on request.

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List of Abbreviations

| | |
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| CSIR | Council for Scientific and Industrial Research |
| ELIDZ | East London Development Zone (SOC) Ltd. |
| IDZ | Industrial Development Zone |
| SHEQM | Safety, Health, Environment & Quality Management (for the ELIDZ). |
| CEMP | Construction Environmental Management Plan |
| EMS | Environmental Management System for the ELIDZ (SOC) Ltd |
| EMP | Environmental Management Plan |
| ESA | Environmentally Sensitive Area |
| ECO | Environmental Control Officer |
| PECO | Project Environmental Control Officer |
| SABS | South African Bureau of Standards |
| SANS | South African National Standards |
| SSSI | Sites of Special Scientific Interest |
| DEDEAT | Department of Economic Development, Environmental Affairs and Tourism |
| PA | Principal Agent, or duly appointed principal Consultant |
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1 PURPOSE OF THE CEMP

The purpose of the CEMP is to translate the recommendations of the Strategic Environmental Assessment (SEA) and the Rezoning EIA into a contractual environmental management plan for application during construction activities within the ELIDZ.

The CEMP provides specifications that the Contractor shall adhere to in order to minimize adverse environmental impacts and to develop a project specific EMP. It is critical that the contractor make provision for the implementation and maintenance of the requirements of the ELIDZ CEMP and their project specific EMP.

2 IMPLEMENTATION OF THE CEMP

The CEMP is intended for dissemination by the SHEQM to approved PA's (or persons responsible for management of projects) who shall ensure that it is included in all Tender Documents issued to the prospective Contractors. The Pa's and Contractors shall incorporate the requirements of the CEMP in their tenders and are required to make it an integral part of their contract with Subcontractors.

The Safety, Health Environment & Quality Management (SHEQM) shall be responsible for updating the CEMP as required, auditing the implementation of the CEMP for each construction project and for maintaining the document control and record systems associated with the CEMP.

The CEMP is a generic document that will be applicable for all construction activities within the ELIDZ and will be implemented by the key role players of the project team including the Pa's, and Contractor, as per the organizational requirements specified.

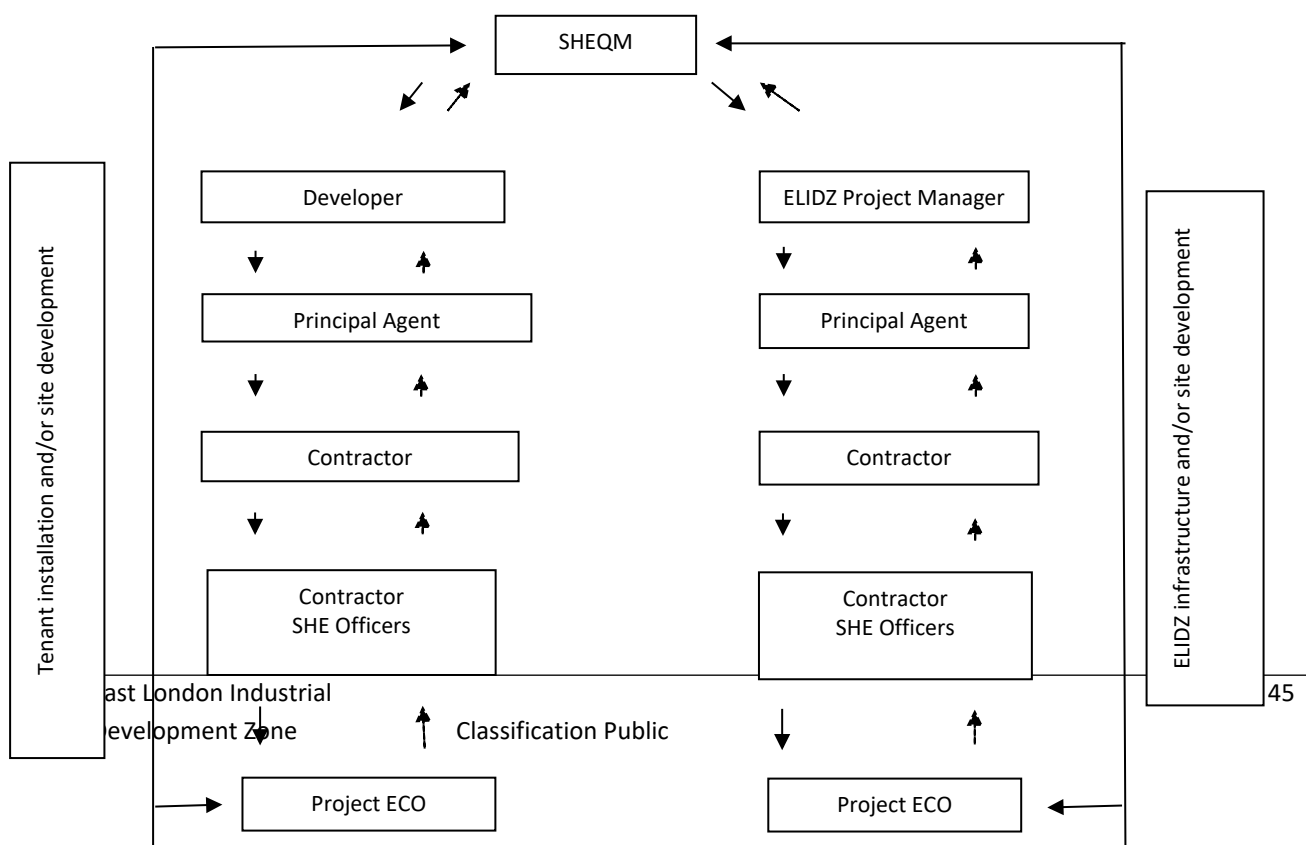
3 ORGANIZATIONAL REQUIREMENTS

3.1 Organizational Structure

This section outlines the required management structure for the administration of the CEMP, with particular emphasis on the roles and responsibilities of key individuals.

The organizational structure for the implementation of the CEMP is presented in Figure 1 and should be viewed in conjunction with the roles and responsibilities identified below.

Figure 1: *Organisational structure showing lines of responsibility and communication.*



3.2 Roles and responsibilities

3.2.1 Safety, Health, Environment & Quality Management (SHEQM)

The ELIDZ is ultimately responsible for ensuring effective environmental management of the ELIDZ in terms of the conditions in the Environmental Management System. It is the function of the Safety, Health and Environment Manager (SHEQM) of the ELIDZ or the duly appointed representative to monitor the implementation of the requirements of the CEMP by ELIDZ Project Management team, Consultants and Contractors, as specified in the CEMP.

The SHEQM shall ensure the appointment of a Project Environmental Control Officer (PECO) to act as his representative. The PECO shall have the same authority as the SHEQM except that a work stoppage instruction shall be subject to a 24 hour delay pending confirmation by the SHEQM and the PA.

In terms of the application of this CEMP the SHEQM shall have, inter alia, the following responsibilities:

- 3.2.1.1 Maintain the CEMP and its contents for issue to PA's and Contractors.
- 3.2.1.2 Receive and adjudicate any requests for deviations from PA's and Contractors and issue a decision within 21 days of the date of receipt of any application.
- 3.2.1.3 Confirm the issue of the CEMP for every construction project within the ELIDZ.
- 3.2.1.4 Issue any work stoppage instruction for serious non-compliance of the CEMP to the PA for further action.
- 3.2.1.5 Upon Environmental Close-out of a project, verify Environmental Project Closure Report for the requirements of the CEMP.

3.2.2 Project Environmental Control Officer (PECO)

The SHEQM may ensure the appointment of a Project Environmental Control Officer (PECO) to act as his representative. The PECO shall have the same authority as the SHEQM except that a work stoppage instruction shall be subject to a 24 hour delay pending confirmation by the SHEQM and the PA.

- 3.2.2.1 PECO to brief Contractors on the general requirements of the CEMP for each project prior to establishing site and stipulate any variations to the CEMP and indicate the method statements required for the project.
- 3.2.2.2 PECO to conduct contractor environmental awareness and induction.

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- 3.2.2.3 PECO to receive, review and approve in writing any method statements required for the project within 10 days of receipt, or reject inadequate method statements and request alterations within the same 10 day period.
 - 3.2.2.4 PECO to frequently inspect the Contractor's site to check compliance with the CEMP and any required method statements (at least monthly) and maintain independent inspection reports on file.
 - 3.2.2.5 PECO to participate in monthly project site meetings.
 - 3.2.2.6 PECO to provide SHEQM with written reports related to non-conformance with the CEMP and method statements. Escalate to SHEQM issues which cannot first be resolved in co-operation with the relevant PA and Contractor, and distribute copies of the record to the PA and Contractor.
 - 3.2.2.7 Carry out site completion inspections and provide details of any outstanding issues for the Contractors attention, and make recommendations on rehabilitation.
 - 3.2.2.8 Carry out at least two (2) post-construction inspections to monitor the site with respect to re-vegetation, alien vegetation control and erosion.
 - 3.2.2.9 PECO to submit Environmental Close-out report for SHEQM to Issue a project closure instruction for the requirements of the CEMP to the PA .

3.2.3 The Developer

In terms of the application of this CEMP the Developer or his duly appointed representative shall, inter alia, have the following responsibilities:

- 3.2.3.1 The Developer shall notify the ELIDZ (SOC Ltd) in writing of any intention to undertake construction activities or installation of infrastructure;
- 3.2.3.2 Notify the ELIDZ (SOC Ltd) in writing of the appointed Principal Agent for the project.
- 3.2.3.3 Include the CEMP with any tender document related to maintenance or construction activities on site;
- 3.2.3.4 Submit an Environmental Management Plan (EMP) for the proposed development to the ELIDZ (SOC Ltd);
- 3.2.3.5 Allow the SHEQM or PECO access to the site for monitoring purposes; and
- 3.2.3.6 Submit monthly environmental reports and audits to the ELIDZ (SOC Ltd).

3.2.4 Principal Agent (PA) and ELIDZ Project Managers

In terms of the application of this CEMP the PA or his duly appointed representative shall, inter alia, have the following responsibilities:

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- 3.2.4.1 Include most up to date version of the CEMP in any tender document related to construction activities within the ELIDZ
 - 3.2.4.2 Provide feedback to the SHEQM on any areas of the project for which the CEMP may require deviation.
 - 3.2.4.3 Instruct the Contractor to appoint an Environmental Control Officer (ECO) for the project.
 - 3.2.4.4 Include in all site meetings the opportunity to address environmental matters from all parties to the works and keep minutes of these meetings.
 - 3.2.4.5 Stop work on site on instructions of the SHEQM in the event of serious non-compliance to the CEMP.
 - 3.2.4.6 Request a project closure instruction for the requirements of the CEMP from the SHEQM to authorize the release of retention monies for the project.
 - 3.2.4.7 Only release the retention monies for the project once the CEMP project closure instruction is received from the SHEQM.

3.2.5 Contractor

In terms of the application of this CEMP the Contractor shall have, inter alia, the following responsibilities:

- 3.2.5.1 Comply with the requirements of the CEMP as provided in the contract document
- 3.2.5.2 Provide copies of any method statements required for the work to the PA 10 days prior to commencing work on site. These method statements shall be in sufficient detail that a third party with the relevant experience of the work and the site could reasonably carry out the work based on the method statement provided.
- 3.2.5.3 Provide to the PA and the PECO, a detailed CV of the proposed SHE Officer, responsible for managing the CEMP on the Contractors behalf, for approval. The proposed SHE Officer shall have the required environmental experience to manage the CEMP and the SHEQM shall reserve the right to reject the appointment of unsuitable persons.

- 3.2.5.4 Provide a copy of the letter of appointment of the SHE Officer to the PA. The appointed SHE Officer shall be available on site during normal working hours.
- 3.2.5.5 The contractor shall be required to undertake post-construction CEMP activities on site until such time as a project closure certificate is issued by the PA.
- 3.2.5.6 Provide information to the ELIDZ as required during external audits that shall be conducted by the ELIDZ as part of the EMS auditing procedure. The information required shall include the reports of internal audits conducted by the Contractor.

3.2.6 Contractor: SHE Officer

The SHE Officer for the Contractors site shall be responsible for, inter alia, the following tasks:

- 3.2.6.1 Be familiar with the contents of the CEMP and be capable of ensuring compliance with all aspects of the document.
- 3.2.6.2 Conduct regular internal audits to ensure that the system for implementation of the CEMP is operating effectively.
- 3.2.6.3 Be familiar with the method statements that apply to any work and audit the compliance to those requirements and keep all these documents in an Environmental File..
- 3.2.6.4 Ensure that employees of Contractors, sub-Contractors, suppliers etc. receive appropriate environmental awareness training prior to commencing work on the project and maintain records of training.
- 3.2.6.5 Record any transgressions of the method statements, that lead to adverse environmental impacts in an incident register, and report these to the PECO, PA and SHEQM immediately.
- 3.2.6.6 Submit and file Incident Corrective Action Reports for closure of an Incident.
- 3.2.6.7 Participate in monthly project site meetings.
- 3.2.6.8 Maintain a site log of any public complaints, details of the corrective action taken, and confirmation that the complainant has been advised that the issue has been resolved.
- 3.2.6.9 At the completion of the contract period the Environmental File with full records of all the CEMP related documents for the project shall be submitted to the PECO within 30 days.

4. MANAGEMENT AND MONITORING

4.1 General inspection, monitoring and reporting

The Contractor shall ensure that the following is complied with:

- 4.1.1 Keep the records of daily site inspection reports to ensure that the environmental specifications are adhered to.
- 4.1.2 Maintain records of all tool box talks and awareness training
- 4.1.3 Maintain a record of all incidents (spills, impacts, complaints, legal transgressions etc.) as well as corrective and preventive actions taken, for submission to the PECO, SHEQM and PA at the scheduled monthly meetings.

4.2. Method Statements

The Contractor shall submit written method statements indicating how compliance with the Particular Specification for Environmental Management will be achieved. An example of a typical method statement format is attached as Annexure 1.

- 4.2.1 Method statements shall state clearly:
 - Timing, location and phasing of activities
 - materials to be used
 - how and where materials will be stored
 - containment of leaks or spills of any liquid or material that may occur
 - equipment and staffing requirements
 - the proposed construction procedure designed to implement the relevant environmental specifications
 - description of potential positive and negative environmental impacts and how these will be managed
 - the system to be implemented to ensure compliance with the above
 - other information deemed necessary by the ELIDZ and Consultant
- 4.2.2 Method statements shall be submitted to the PECO, for approval at least ten working days prior to commencement of related works on site, to allow the PECO time to study and approve the method statement. The Contractor shall not commence work on the activity requiring a method statement until such time as the method

statement has been approved in writing by the PECO which shall be done within ten working days of receipt.

- 4.2.3 Approved method statements shall be kept on site for auditing purposes.

4.3 Documentation

- 4.3.1 The Contractor shall maintain an Environmental Management file that includes but might not be limited to: method statements, monthly reports, internal audits and other relevant material. These files shall be available on site at all times and are to be presented on request.
- 4.3.2 The Contractor shall ensure that all records of spills, pollution incidents, spot fines, training details etc. are copied to the PECO.
- 4.3.3 The Contractor shall ensure that a register of public complaints and action taken thereon, plus the relevant documentation from the PECO, is maintained.
- 4.3.4 All records relating to the CEMP are to be copied to a file which is to be handed over to the PECO on completion of the project.

4.4. Penalties

Failure to comply with the provisions of the CEMP will attract the following penalties:

4.4.1 Spot Fines

Spot fines not exceeding R1,500.00 shall be recommended by the PECO and imposed by the PA on the Contractor if the Contractor is found to be in breach of this Specification. The PA shall advise the Contractor in writing of the nature of the infringement and the amount of the spot fine, which shall be deducted from monthly payment certificates.

The imposition of spot fines does not replace any legal proceedings the ELIDZ (SOC Ltd), authorities, landowners and/or members of the public may institute against the Contractor. The severity of the spot fine shall be decided at the discretion of the PA, and the PA's decision is final.

Spot fines will be imposed for the following infringements that include but might not be limited to:

- 4.4.1.1 Commencement of work without approval of method statements
- 4.4.1.2 Moving outside the demarcated Site boundaries;
- 4.4.1.3 Using the river for any purposes other than those specified;
- 4.4.1.4 Littering of the Site and surrounds;
- 4.4.1.5 Burying waste on Site and surrounds;
- 4.4.1.6 Smoking in the vicinity of fuel storage and filling areas and in any other areas where flammable materials are stored/used;
- 4.4.1.7 Making fires outside designated areas;
- 4.4.1.8 Defacement of natural features;
- 4.4.1.9 Performing ablutions outside of designated ablution areas.
- 4.4.1.10 Spillage onto the ground of oil, diesel, etc;
- 4.4.1.11 Harming / damaging Flora and Fauna within the ELIDZ; and
- 4.4.1.12 Other acts deemed by the PECO to be in breach of the CEMP.

Spot fines that are issued by the PA, will be issued as a 'Compliance Notice', compiled by the PECO, to the Contractor, and the Compliance Notice shall present the activity that caused the non-compliance, and the amount to be paid. A copy of the Compliance Notice will also be submitted to the financial manager for the project who will deduct the value of the fine from the Contractors payment claim.

4.4.2 Fines

More severe fines may be issued by the PA, by recommendation of the PECO, on a Contractor if there are repeated contraventions of the CEMP. The fines that are issued shall be in accordance with the severity of the incident, and these will be classified as minor-, medium-, or major environmental incidents.

4.4.2.1 Minor environmental incidents

This refers to an incident or sequence of incidents, whether immediate or delayed, that does not result in any negative impact on the environment immediately after remedial action, and does not result in pollution, and does not pose risk of injury or death.

Minor environmental incidents may attract a fine not exceeding R5,000.00 imposed at the discretion of the PA. The PA's decision is final and the Contractor remains liable for the costs of any remedial action required.

4.4.2.2 Medium environmental incidents

This refers to an incident or sequence of incidents, whether immediate or delayed, which results in reversible significant negative impact on the environment, and/or risk of legal liability to the ELIDZ and does pose risk of injury or death.

Medium environmental incidents may attract a fine not exceeding R10,000.00 imposed at the discretion of the PA. The PA's decision is final and the Contractor remains liable for the costs of any remedial action required and / or legal liabilities.

4.4.2.3 Major environmental incidents

This refers to an incident or sequence of incidents, whether immediate or delayed, that results in irreversible significant negative impact on the environment, and/or risk of legal liability to the ELIDZ.

Major environmental incidents may attract a fine not exceeding R50,000.00 imposed at the discretion of the PA and endorsed by the SHEQM. The SHEQM endorsed decision is final and the Contractor remains liable for the costs of any remedial action required and / or legal liabilities.

4.4.2.4 Fines Procedure

1. PECO will issue the contractor with a pre-compliance notice.
2. The pre-compliance notice will include the non-conformance as well as recommendations for corrections.
3. Final corrective actions are to be implemented within 48 hours of receipt of the pre-compliance notice.

4. Failure to address the pre-compliance notice will result in a compliance notice being issued to the contractor and copy to the PA as well as SHEQM.
5. The compliance notice will include the non-conformance, proposed corrective action, failure to address non-conformance and recommended fine value.
6. The compliance notice shall be addressed within 48 hours, failing which related construction activities are at risk of being stopped by SHEQM.
7. The PA will ensure that a copy of the Compliance Notice will be submitted to the project's financial manager with an instruction to deduct the value of the fine from the Contractor's next payment certificate.

4.4.2.5 Repeat Offences

A repeated contravention of the CEMP requirements shall be sufficient grounds for the PECO to recommend removal to the SHEQM of the person responsible for the non-compliance from the Site, and the Contractor shall have no claim for such action.

A repeat major environmental incident may be grounds for the SHEQM to claim a 'breach of contract' against the Contractor and the ELIDZ shall have the right to terminate the contract in such circumstances.

4.4.3 Dispute Resolution

Dispute resolution will be in accordance with the terms dictated by the construction contract entered into between the Contractor and ELIDZ (SOC) Ltd (i.e. GCC, JBCC etc.).

5. ENVIRONMENTAL AUDITING

It shall be the responsibility of the SHEQM and the PECO to attend to the preliminary briefing of the Contractor on the CEMP at the site hand-over meeting and to conduct external audits of the works area at not less than monthly intervals.

The audit shall assess compliance with each clause of the CEMP, including any variations and additions which may have been approved.

6. ENVIRONMENTALLY SENSITIVE AREAS

6.1 The Contractor is advised that certain areas within the IDZ have been identified as being Environmentally Sensitive Areas (ESA's). The ESA's include the following:

- coastal grasslands
- wetlands which protect and support aquifers and riverine systems
- the Mvubukazi and Ngqenga River
- steep slopes which are prone to erosion when vegetation is removed or disturbed and which support areas of pristine indigenous vegetation

6.2 No ESA shall not be entered or used for any purpose unless a written motivation has been submitted through the PECO to the SHEQM by the Contractor, and a written approval has been received from the SHEQM.

6.3 The Contractor shall exercise special care when working close to an ESA in order to avoid physical disturbance or pollution of these areas.

6.4 The Contractor shall keep a log of entries into an ESA with comment on reasons and activities which took place in the entered ESA.

PARTICULAR SPECIFICATIONS TO THE ELIDZ CEMP

PS 1 INTRODUCTION

The Contractor's attention is drawn to requirements of the Environmental Specification which are intended to comply with the requirements of the ISO 14000 Series, and to complement the requirements laid down in SANS 2001 and are not intended to extend these requirements except where the Contractor fails to take due care, whereupon any additional requirements shall be at the expense of the Contractor.

PS 2 GENERAL ISSUES

PS 2.1 Access to Marine Zone

The Contractors and their staff are specifically prohibited from going across to the marine zone (and beach) adjacent to the ELIDZ directly from the ELIDZ.

PS 2.2 Pollution of Groundwater

The Contractor must ensure that pollution of the ground or surface water does not occur as a result of the release, accidental or otherwise, of contaminated run-off from construction sites, discharge of contaminated construction water, chemicals, oils, fuels, sewage, run off from stockpiles, solid waste and litter.

PS 2.3 Wind Generated Pollution

The Contractor is advised that the site is prone to strong winds. All material storage areas should be designed so as to reduce the risk of spillage, dispersal or damage from materials as a result of strong winds. The protection of stored materials should be included in method statements.

PS 2.4 General Emergency Procedures

- PS 2.4.1 The Contractor shall submit his Emergency Procedure Method Statement for approval prior to commencing activities on site.

- PS 2.4.2 Emergency response procedures shall include, but are not limited to, the reaction to fire, spills contamination, ground contamination, accidents to employees, accidental discharge of hazardous substances, etc.
- PS 2.4.3 Emergency procedures, including contact details of emergency response services, shall be made available to all the relevant personnel and shall be clearly displayed at the relevant locations around the site.
- PS 2.4.4 The Contractor shall advise the PECO, SHEQM and PA of any emergencies on site, together with a record of action taken as soon as practical but not later than 36 hours after the event.
- PS 2.4.5 The Contractor must provide the PECO and the PA with temporary site closure procedures in the event that the construction site is closed for five days or more.

PS 2.5 Fire prevention

The Contractor shall take all the necessary precautions to ensure that fires are not started as a result of his activities on site and shall also comply with the requirements of the Occupational Health and Safety Act 85 of 1993.

The Contractor shall be liable for any expenses incurred by any organisations called to assist with fighting fires, and for any costs relating to the rehabilitation of burnt areas.

PS 2.6 Hazardous materials

The Contractor shall provide spill kits and his staff are to be trained in the use of the equipment for the purpose of dealing with any spills. In addition, the Contractor shall ensure that key personnel are aware of local Contractors who are experienced in hazmat handling in the event of the on-site reaction proving inadequate.

PS 3 ENVIRONMENTAL PROTECTION

PS 3.1 Protection of Flora and Fauna

- PS3.1.1 Indigenous flora is to be protected throughout the areas surrounding the site. All fauna within and around the site is to be protected.

PS 3.1.2 It is illegal, in terms of applicable Environmental legal and other requirements to remove or pick any protected or unprotected indigenous flora without the written permission of the landowner. The applicable Environmental Legislation sets out particular penalties for offenders and the PECO as well as SHEQM will ensure compliance.

PS 3.2 Poaching, disturbance of Wildlife and domestic pets

PS 3.2.1 No fauna shall be disturbed on site or in surrounding indigenous bush and open spaces.

PS 3.2.2 Wildlife shall not be caught or killed by any means, including poisoning, trapping, shooting, or setting of snares. Offenders shall be prosecuted in terms of the applicable Environmental Legislation.

PS 3.2.3 Any Contractor's staff caught interfering with wildlife will face suspension from the project. Criminal charges will be initiated if poaching is detected.

PS 3.2.4 No domestic pets will be allowed on site.

PS 3.3 Defacement of Natural Features

Defacement of any features within the ELIDZ shall be cause for the PECO as well as SHEQM to invoke penalties in accordance with clause 4.4 - Penalties

PS 3.4 "Threatened or Protected Species" (TOPS)

A number of species of fauna and flora that occur in ELIDZ have been declared "Threatened or Protected Species" in terms of the applicable Environmental legislation. This includes plants like Cycads, trees like Milkwood trees, Cheesewood trees, and Yellowwood trees, and animals such as Cape Clawless Otter, Black-footed Cat, Porcupine, and Common Duiker.

In terms of the applicable Environmental legislation, these species may not be gathered, transported or relocated without a permit. These species must therefore be avoided, or if unavoidable, the PECO as well as the SHEQM and the PA must be notified timeously so that the necessary approvals for removal and rehabilitation can be obtained.

PS 3.5 Indigenous Vegetation

PS 3.5.1 No indigenous trees or bush shall be disturbed or removed without approval from the PECO and SHEQM.

PS 3.5.2 Areas where construction will occur near indigenous forest/bush must be strictly controlled and the limits of the construction activities must be demarcated with net hoarding. No construction staff may access indigenous vegetation areas at any time.

PS 3.6 Alien Vegetation

PS 3.6.1 The PECO will assist in the identification of alien plant species which must be removed and will advise the Contractor on methods of eradication

PS 3.6.2 The Contractor shall remove all alien vegetation that establishes within the demarcated site after construction commences. The removal of alien vegetation shall comply with legal and other requirements, with related method statements approved by the PECO prior to removal.

PS 3.6.3 Treatment of alien vegetation with herbicides shall be approved by the PECO prior to implementation.

PS 3.7 Fire Prevention and Control

PS 3.7.1 The Contractor shall always ensure that fires do not start or spread in or around the site as a result of the Works or the actions of employees.

PS 3.7.2 No open fires, that is fires in undesignated and/or unauthorized areas, are allowed on site or anywhere else within the ELIDZ.

PS 3.7.3 In the event of fire the Contractor shall immediately implement construction site emergency preparedness protocol to have the fire emergency addressed.

PS 3.8 Erosion Control

- PS 3.8.1 Areas affected by construction related activities must be monitored on an ongoing basis for evidence of soil erosion. Where evidence of soil erosion occurs, the Contractor shall develop and implement remedial measures at an early stage to avoid severe erosion problems occurring. Proposed remedial action must be approved by the PECO, SHEQM, the PA and the ELIDZ before implementation can commence.
- PS 3.8.2 The disturbance of steep slopes by the removal of vegetation, may result in slope instability and erosion by rain and surface run off. The Contractor shall ensure that slopes that are disturbed during construction are stabilised to prevent erosion occurring. Where re-vegetation of slopes is undertaken, this shall be in accordance with the CEMP specification for rehabilitation.
- PS 3.8.3 The positions of scour valves are to be checked on site by the PA, PECO and Contractor prior to construction thereof, to ensure that scouring will not cause erosion. All scour positions will require some form of erosion protection.

PS 3.9 Archaeological and Paleontological sites

If any possible paleontological / archaeological material is found during excavations, the Contractor shall stop work immediately and inform the PECO and the SHEQM who will inform the South African Heritage Resources Agency (SAHRA) and arrange for a palaeontologist /archaeologist to inspect, and if necessary, excavate the material, subject to acquiring the requisite permits from SAHRA.

PS 3.10 Environmentally sensitive areas

The Contractor must refer to Clause 6 above:

- PS 3.10.1 No ESA shall be entered or used for any purpose unless a written motivation has been submitted to the PECO by the Contractor, and a written approval has been received from the SHEQM.
- PS 3.10.2 The Contractor shall exercise special care when working close to the ESA to avoid physical disturbance or pollution of these areas.

- PS 3.10.3 Damage caused to an ESA by the Contractor shall be cause for the PECO and SHEQM to invoke penalties in accordance with clause 4.4 - Penalties.

PS 4 CONSTRUCTION SITE ACTIVITIES

PS 4.1 Sanitation

- PS 4.1.1 The Contractor shall provide the necessary ablution facilities for all his personnel.

A temporary connection to the ELIDZ sewerage system for use during construction shall take precedence, failing which chemical toilets shall be provided with a minimum of one toilet per 15 persons.

Chemical toilets shall be cleaned and serviced at least twice per week by a reputable toilet servicing company, and shall be emptied before weekends, long weekends and shutdown periods (also known as builders holidays). The toilet servicing company shall provide proof that they are licensed to dispose of toilet waste to the Buffalo City Municipality sewers.

- PS 4.1.2 The Contractor shall ensure that chemicals and/or waste from toilet cleaning operations are not spilled on the ground at any time. Should there be repeated spillage of chemicals and/or waste (i.e. more than three), the Contractor shall place the toilets on a solid base with a sump, at his own expense. Accumulations of chemicals and waste will have to be removed from the site and disposed at an approved waste disposal site or sewage plant.

PS 4.1.3 Wastewater from any other ablution or kitchen facilities on site shall be discharged into a suitable conservancy tank or directed to the nearest sewer. The Contractor shall be responsible for ensuring that the system continues to operate effectively for the duration of the construction activity and that the conservancy tank is emptied as required during the project. The Contractor shall engage a suitably qualified sub-contractor or the local authority to empty the conservancy tank and provide proof that the effluent is discharged to a licensed disposal site.

PS 4.2 Refuse

PS 4.2.1 All waste shall be collected and contained immediately.

Examples of typical construction waste which could be expected on the site and how they should be classified include but not limited to what is indicated in the following table:

Table 1

| WASTE | CLASSIFICATION | |
|---|----------------|---------|
| | HAZARDOUS | GENERAL |
| Aerosol containers | X | |
| Batteries, fluorescent light bulbs, circuit boards, etc. | X | |
| Clean soil | | X |
| Soil or debris contaminated with oil or organic compounds | X | |
| Domestic waste | | X |
| Empty drum (depends on prior use) | X | X |
| Empty paint and coating containers | | X |
| Explosive waste | X | |
| Waste paint and/or solvent | X | |
| Previously contaminated building waste | X | |
| Uncontaminated rubble | | X |
| Waste plastic | | X |
| Waste cable | | X |
| Waste oil | X | |
| Waste concrete | | X |
| Waste containing asbestos | X | |
| Waste timber | | X |
| Sewerage sludge | X | |
| Scrap metal | | X |
| Chemically derived sanitary waste | X | |

PS 4.2.2 The Contractor shall not dispose of any waste and/or construction debris by burning or burying. Waste bins and / or skips are to be provided. The bins shall have lids and an external closing mechanism to prevent their

contents blowing out. Bins shall not be used for any purposes other than waste collection and shall be emptied on a regular basis. All waste shall be disposed of off - site at approved landfill sites.

PS 4.2.3 Construction waste refers to Building and Demolition waste and the Contractor is encouraged where possible to use the waste as fill. The Building and Demolition waste may not contain any hazardous waste or hazardous chemicals, and may not be contaminated with plastic, PVC products, steel, glass, tin, and wood.

PS 4.2.4 Waste generated at the construction camps shall be separated into recyclable and non-recyclable waste, and shall be separated as follows:

- Hazardous waste (including old oil, diesel, petrol tins, paint, bitumen, etc.)
- Recyclable waste (paper, tins, glass)
- General waste
- Reusable construction material.

PS 4.2.4.1 Recyclable waste shall be deposited in separate skips and removed off site for recycling.

PS 4.2.4.2 Hazardous waste, including waste oil and other chemicals (e.g. paints, solvents) shall be stored in enclosed area/s and shall be clearly marked. Such waste shall be disposed of off-site by a specialist waste contractor, at a licensed hazardous waste disposal site. A Certificate of Safe Disposal will be kept in the Environmental File.

PS 4.3 Dust

The Contractor shall develop and maintain a Dust Management plan to maintain the control of dust emanating from all the Works areas, access roads/tracks, stockpiles, spoil sites and borrow pits. Dust suppression may entail the judicious use of water and care shall be taken to avoid unnecessary runoff and / or erosion.

The Contractor shall take note that some surrounding facilities are 'dust free environments' and dust from the construction must not disturb the economic and operating activities of these facilities.

PS 4.4 Cement and Concrete

The Contractor is advised that cement and concrete are regarded as highly hazardous to the natural environment on account of the very high pH of the material, and the chemicals contained therein.

PS 4.4.1 On-site mixing of Concrete and Mortar

The Contractor shall ensure that:

- All mixing is done on mortar boards, and not directly on the ground.
- The visible remains of concrete, either solid, or from washings, are physically removed immediately and disposed of as waste. Washing the visible signs into the ground is not acceptable.
- Contaminated ground, because of mixing, shall be rehabilitated to its original state and approved by the PECO
- All efforts shall be made as far as reasonably practicable, for Mixing to be restricted to areas which are to become hardstand areas.

PS 4.4.2 Cement stabilization

The Contractor shall not undertake cement stabilization during windy periods. Special care shall be taken when working in the vicinity of the demarcated wetlands and Mvubukazi and Ngqenga Rivers to avoid damage caused by cement entering the water.

PS 4.4.3 Concrete Batching

PS 4.4.3.1 Concrete batching plants shall be located more than 100 m from the nearest river channel or wetland. The batching site shall be bunded with earth berms or sandbags such that runoff cannot escape from the site. Contaminated storm water and wastewater runoff shall not be permitted to enter streams but shall be led to a pit where the water can soak away.

PS 4.4.3.2 Waste concrete and cement sludge shall be scraped off the site of the batching plant and carted to an approved landfill site.

PS 4.4.3.3 Adequate measures shall be taken to control dust from stockpiles and the batching plant processes. The placement of the batching plant shall not be closer than 500 metres from the nearest dwelling or occupied premises, other than the site camp.

PS 4.4.3.4 No cement contaminated water, or cement sludge shall not be allowed to enter any storm water drains.

PS 4.4.4 Concrete Mixing

PS 4.4.4.1 Concrete mixing stations shall be located on the construction site and shall be bunded with earth berms or sandbags such that runoff cannot escape from the site. Contaminated storm water and wastewater runoff shall not be permitted to enter storm water reticulation and/or streams but shall be led to a pit where the water can soak away and any dried debris can be collected and disposed of.

PS 4.4.4.2 The cleaning of concrete mixing trucks is prohibited on the construction site or anywhere else on the ELIDZ property.

PS 4.5 Blasting Operations

Notification of blasting operations shall be provided to the SHEQM, PECO and PA at least 72 hours before the planned activity. Blasting activities may not commence until written approval is received from the SHEQM, (SHE agent where applicable), PA and PECO.

The Contractor must take appropriate measures to minimise the generation of dust and fly rock from blasting operations. No blasting is permitted unless the Contractor has satisfied the PA, PECO and SHEQM that the proposed blasting methods and controls are such that no damage will be caused to any adjoining structures, pipelines, services, trees or sensitive vegetation.

Topsoil may not be used as over-burden for blasting.

PS 4.6 Open Excavations

Adequate measures must be taken to prevent humans or animals from injuring themselves by falling into any open excavations. All excavations deeper than 1.5 m that are likely to be left unattended for more than 24 hours are to have the sides cut back to a 1 : 3 slope to allow persons or animals to climb out.

PS 4.7 Protection of Indigenous trees

Indigenous trees shall be protected and may not be removed nor damaged. The area immediately around the stems of the trees must be kept free of piled rubble, soil, or material stockpile.

PS 4.8 Servicing and Refuelling of Equipment

- PS 4.8.1 Servicing should preferably occur off site however if these activities occur on site the contractor will be required to conduct all servicing of machines and equipment within a designated area within the site camp.
- PS 4.8.2 The Contractor shall ensure that there are adequate facilities for the handling and storage of used parts, oils, grease, cleaning fluids and fuels. Drip trays are to be available for use at the servicing area.

- PS 4.8.3 In the event of a breakdown on site, the contractor may temporarily repair equipment on location if drip trays are in place during all work and a spill control kit is immediately available.
- PS 4.8.4 No vehicles or machines shall be refuelled on site except at designated refuelling locations.
- PS 4.8.5 A designated areas for refuelling, and vehicle servicing shall have an impermeable layer to prevent contamination of the soil and ground water.
- PS 4.8.6 The designated areas shall also be equipped with a fire extinguisher.
- PS 4.8.7 No smoking is to be allowed within a five-metre radius of the service area and a no-smoking area must be designated by signage.
- PS 4.8.8 MSDSs for all fuels, oils and lubricants used shall be available on site and kept updated in the applicable SHE files.
- PS 4.8.9 All employees working directly with any fuels, oils and lubricants will be trained on the relevant MSDSs and must be issued with the required PPE.

PS 4.9 Fuels and Chemicals

The Contractor shall take all reasonable precautions to prevent the pollution of the ground and/or water resources by fuels and chemicals from his activities.

- PS 4.9.1 The Contractor shall keep the necessary materials and equipment on site to deal with ground spills of any of the materials used or stored on site.
- PS 4.9.2 The Contractor shall ensure that no oil, petrol, diesel, etc. is discharged onto the ground. Drip trays shall be provided where required, cleaned and emptied regularly and the waste disposed of off-site at a facility appropriately permitted to handle such wastewater.
- PS 4.9.3 The Contractor shall remove any oil-, petrol-, and diesel-soaked ground immediately and shall dispose of it as hazardous waste.
- PS 4.9.4 Tanks containing fuels shall have lids and shall remain firmly shut. Fuel stores shall be placed on a bunded sealed base - the bunds shall have a volume of 110% of the volume of the largest tank in the storage area. Any wastewater

or spilled fuel collected within the bund shall be disposed of as hazardous waste.

PS 4.9.5 The Contractor shall ensure that there is adequate fire-fighting equipment at the fuel stores, and smoking shall be prohibited in the vicinity of the stores.

PS 4.9.6 No open fuel containers may be stored on bare ground or left near a designated smoking area.

PS 4.9.10 No hot works shall be allowed within five meters of any fuel storage.

PS 4.10 Storage Areas

All areas used for the storage of materials shall be clearly demarcated and shall prohibit unauthorised access. The storage of sand, stone, bricks and large pipes is not to take place on areas without removing and stockpiling topsoil for the rehabilitation of the site after use.

PS 5 MATERIAL HANDLING

PS 5.1 Borrow Pits

Material from outside of the actual construction site may not be borrowed without the prior approval of the SHEQM and PA. Contractors will not be allowed to open borrow pits outside of the site and all materials supplied to site are to be sourced from external sites with valid licenses from the Department of Minerals and Energy. The Contractor shall be required to supply copies of the licenses to the PECO prior to obtaining material from the site. Such licenses will be kept in the Environmental File on site.

PS 5.2 Spoil Sites

PS 5.2.1 Spoil sites within the ELIDZ are reserved for stockpiling of good quality topsoil for later use on the site for rehabilitation. The SHEQM and PA shall approve the quality and quantity of material to be stockpiled and location thereof.

- PS 5.2.2 The on-site stockpiles shall be maintained by the Contractor for the duration of the project. This maintenance shall include, inter alia, seeding, erosion control and storm water management relating to the stockpile.
- PS 5.2.3 The spoiling of surplus material off-site will be required and the Contractor shall be responsible for identifying suitable sites for the disposal of this material. The contractor shall provide a letter of consent for the location of the disposal of such material from the landowner.

PS 5.3 Construction Materials

The way materials are transported onto site, and stored prior to use, must be controlled by the Contractor. The impacts of noise, dust, traffic and social disruption must be considered, and materials stored on site are to be placed so as not to negatively impact on operations within the ELIDZ.

PS 5.4 Hazardous Materials

- PS 5.4.1 The Contractor shall comply with all relevant National, Regional and Local legislation regarding the transport, use and disposal of hazardous materials. If necessary, the Contractor shall obtain the advice of the manufacturer about the safe handling of hazardous materials.
- PS 5.4.2 The Contractor shall provide the SHEQM and PA with a list of all hazardous materials on site, together with storage procedures for these materials.
- PS 5.4.3 The Contractor shall ensure that information on all hazardous substances is available to all relevant personnel on site. The Contractor shall furthermore be responsible for the training of all personnel on site who will be handling the material, regarding the proper use, handling and disposal thereof.

- PS 5.4.4 Only the personnel trained to handle hazardous materials shall handle these materials and they must have the appropriate PPE while handling the materials.

PS 6 SITE REHABILITATION

- PS 6.1 The Contractor shall be responsible for rehabilitating all areas cleared or disturbed for construction purposes to return these areas to their former condition. This will include removal of all cement sludge, waste concrete, builders, refuse etc., ripping of compacted surfaces to a depth of 150 mm to loosen soil.

- PS 6.2 Areas that require reshaping shall be cut, filled and compacted so as to follow the contours of the surrounding landscape. Topsoil removed from the area initially shall be replaced. Care must be taken not to mix the topsoil with the subsoil during shaping operations. Should a crust form on the soil before re-vegetation is commenced, the Contractor(s) shall, at own cost, loosen the crust by scarifying to a depth of 150 mm.

- PS 6.3 The re-establishment of vegetation will be monitored for six months after completion of rehabilitation to ensure the vegetation cover is adequate to prevent erosion. i.e.: When in the PECO's opinion the grass is fully established (75% cover per square metre).

Extra measures including composting, sodding, sprigging, hand seeding or hydroseeding may be required to achieve this.

- PS 6.3.1 Seeding
A commercial annual and perennial grass seed mix shall be used which has an annual to perennial ratio of greater than 1.5:1. Seeding shall not take place in windy conditions.

- PS 6.3.2 Irrigation
Irrigation will enhance the rehabilitation and should be considered if unusually dry conditions prevail.

- PS 6.3.3 Fertiliser

Before seeding, 2:3:2 (N:P:K) fertiliser shall be mixed into the topsoil at a rate of 30g/m². Trafficked topsoil shall be loosened. The soil shall then be watered so that it is visibly moist to a depth of 100 mm (at a rate and frequency of 15 mm/m² per week).

PS 6.4 The Contractor shall remove all alien vegetation that establishes within the demarcated site after construction commences. The removal of alien vegetation shall be by uprooting. The treatment of alien vegetation by weed killer is not acceptable. Disposal of alien vegetation, after removal, may be controlled by burning with the written permission of the PECO.

PS 6.5 All construction equipment and excess aggregate, gravel, stone, concrete, bricks, temporary fencing and the like shall be removed from the site upon completion of the work. No discarded materials of whatsoever nature shall be buried on the site or within the confines of the ELIDZ.

PS 7 STORM WATER AND EFFLUENT MANAGEMENT

PS 7.1 The Contractor shall take reasonable precautions to prevent the pollution of the ground and / or water resources on and adjacent to the site because of his activities.

PS 7.2 No natural watercourse is to be used for the cleaning of tools or any other apparatus. This includes for purposes of bathing, or the washing of clothes etc.

PS 7.3 All washing operations will take place off-site at a location where wastewater can be disposed of in an acceptable manner.

PS 7.4 No spills may be hosed down into a storm water drain or sewer, or into the surrounding natural environment.

PS 8 ACCESS TO WATER

PS 8.1 Contractors shall not make use of/collect water from any other source than those pointed out to them as suitable for use by them.

PS 9 NOISE CONTROL

PS 9.1 The Contractor shall take all reasonable precautions to minimize noise generated on site as a result of construction operations.

PS 9.2 Excessive noise levels shall be limited to normal working hours, that is between 08h00 and 17h00.

PS 10 TEMPORARY SITE CLOSURE

This is applicable in any period where the site is closed for 3 days or more. On such occasions the following controls will be implemented:

- All construction areas will be sufficiently closed off to make these safe, and to prevent unauthorized access.
- All plant left on site during this period will be parked at the designated parking area that has been prepared with an impermeable layer or returned to the Contractors yard for safe keeping.
- Any plant left at the designated parking will still have a drip tray placed under the engine and these shall be periodically checked by standby staff to make sure there is no overflow.
- All equipment shall be removed from site or safely stored in storage containers.
- All waste containers shall be emptied.
- All waste skips shall be emptied before Christmas shutdown and covered with a rainproof sail in the case of large skips or turned over in the case of small skips, so that these do not fill with rainwater.
- All chemical toilets shall be emptied before temporary shutdown
- Temporary electrical connections shall be shut down, with a connection for security being left in working order.
- Water connections to site shall be shut, with a single water connection for security being left usable.
- Portable or other toilet facilities left on site shall be serviced as usual for the duration of the temporary site closure.
- Security shall remain on site for the duration of the period and will do regular inspection of the entire site and works area.
- Security shall be issued with an emergency contact list of senior personnel and standby personnel who will be contactable in case of emergencies.

- Security shall allow access to site for ELIDZ Personnel but shall keep a record of such visits.
- No items of any sort may be removed from the site during this period.

PS 11 FINANCIAL CLAIMS

The ELIDZ shall make payment to the contractor on submission of a payment certificate from the Consultant. The Consultant shall adjudicate claims based on performance and compliance with the requirements of the CEMP and fulfilment by the contractor of the requirements of the CEMP specification against the scheduled items.

These scheduled items shall inter alia include:

1. Provision for management of the general requirements of the CEMP as a lump sum payable pro rata against progress (time based). This amount shall be considered to include all contractual obligations of the CEMP not priced separately in the Bill.
2. Costs of administration of the meetings required for the CEMP, including minute keeping, distribution, venue and management. The amount payable shall be reflected as a monthly cost and shall include all the administration costs of managing the CEMP.
3. Requirement for method statements for selected activities shall be paid per method statement provided the method statement adequately fulfils the requirement of the activity. The amount payable will be deemed to include all costs of producing the method statement, including any revisions and the costs of applying the requirements of the method statement.
4. Training requirements of the CEMP shall be payable as a lump sum once proof of training has been provided to the Consultant and certified adequate by the ELIDZ 25 % of the amount will be withheld until the end of the contract and shall be paid if additional training obligations for new staff were met.

LEGISLATION APPLICABLE TO THIS SPECIFICATION

In terms of the constitution, environmental matters are delegated to the province, but not exclusively. National Acts of relevance to this environmental specification are:

Conservation of Agricultural Resources Act, No 43 of 1983

Environment Conservation Act, No 73 of 1989

National Environmental Management Act, No 107 of 1998 (NEMA)

National Environmental Management: Air Quality Act, No 39 of 2004

National Environmental Management: Biodiversity Act, No 10 of 2004

National Environmental Management: Biodiversity Act, Alien Invasive Species Regulations

National Environmental Management: Waste Act, No 59 of 2008

National Forests Act, No 84 of 1998

National Heritage Resources Act, No 25 of 1999 (NHRA)

National Veld and Forest Fires Act, No 101 of 1998

National Water Act, No 36 of 1998 (NWA)

Provincial Nature Conservation Ordinances.

Minerals and Petroleum Resources Development Act, No 28 of 2002.

Health Act, No 63 of 1977

DOCUMENT REVIEW

This document shall be reviewed after two years or earlier if necessary

ANNEXURE 1: **METHOD STATEMENT SHEET - ENVIRONMENTAL METHOD STATEMENT**

| | | | | | |
|--------------|--|---------------------------|--|------------------------------|--|
| WHAT: | Subject of M/Statement | | | | |
| WHO: | Site Foreman/contact person: | | | | |
| | Submitted to (e.g. PECO): | | Approved by: | | |
| | Date Submitted on: | | Date Approved: | | |
| WHEN: | Date works start | | Date works complete | | |
| | Rehabilitation period: | | Programme restrictions (critical path, season restrictions etc.) | | |
| | Split work Phasing: | Item | start date | end date | |
| | Phase 1 | | | | |
| | Phase 2 | | | | |
| WHERE | Area of works – submit plan or sketch if appropriate – stockpile, detention ponds, boundaries / restriction of works, special features or mitigation works landscape specials etc: | | | | |
| HOW: | Route/site layout pegged: | Date available to inspect | | Inspection persons required: | |
| | Landscape concerns: (Specify items not covered in CEMP. Refer to CEMP items if required.) | | | | |
| | Existing features & services affected (e.g. paths, curbing, irrigation etc.) | | | | |
| | Trees (protection or removal methods). | | | | |
| | Special vegetation | | | | |
| | Reinstatement methods | | | | |
| | Maintenance | | | | |
| | Restricted areas | | | | |
| | Access: | | | | |
| | Machinery: | | | | |

| | |
|--|---|
| | Earthworks & dust control: |
| | Concrete works: |
| | Storm-water control: |
| | Stockpiles: |
| | Refuse/rubble: |
| | Water quality – pumping, source & discharge points, settlement, filtration, duration etc: |
| | Hydrocarbon control measures: |
| | I&AP notifications: |
| | Fire/emergency contingencies: |
| | Special conditions / mitigation measures (e.g. stream crossings, live sewer proximity etc): |
| | Comments: |