



TRANSNET GROUP CAPITAL
ENVIRONMENT & SUSTAINABILITY

**CONSTRUCTION ENVIRONMENTAL
MANAGEMENT PLAN (CEMP)**

ENV-STD-001 Rev04

Document Control

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TABLE OF CONTENTS

1 Purpose	4
2 Scope	4
3 Abbreviations and Definitions	4
3.1 Abbreviations	4
3.2 Definitions	5
4 Overview of the CEMP	8
5 Implementation of the CEMP	9
5.1 Roles and Responsibilities	9
5.1.1 TGC Project Environmental Manager (PEM).....	9
5.1.2 TGC Construction Manager	10
5.1.3 TGC Environmental Officer.....	10
5.1.4 Environmental Control Officer.....	12
5.1.5 Contractor's Environmental Officer.....	12
5.1.6 The Contractor	14
5.2 Organisational structure	15
5.3 Availability of the CEMP	16
5.4 Project Environmental Management Plan	16
5.5 Environmental Method Statements	16
5.6 Environmental Incidents.....	18
5.6.1 Level 1 Environmental Incident	18
5.6.2 Level 2 Environmental Incident	18
5.6.3 Level 3 Environmental Incident	19
5.6.4 Level 4 Environmental Incident	20
5.7 Public Complaints	22
5.8 Environmental Non-Conformances	22
5.9 Documentation and Records	24
5.10 Application for Exemption	25
6 Main Actions required by the Contractor to comply	25
6.1 Prior to Commencement.....	25
6.1.1 Declaration of Understanding (DoU).....	26
6.1.2 Appointment of Contractor's Environmental Officer	26
6.1.3 Environmental Management Plans and Method Statements.....	26
6.1.4 Environmental Induction	27

6.2 During Construction	28
6.2.1 Copy of the CEMP and familiarisation thereof.....	28
6.2.2 Compliance with the SES and PES and relevant permits and licences	28
6.2.3 Site clean-up for Closure.....	28
7 Environmental Inspections and Audits	28
7.1 Environmental Inspections and Audits	28
7.1.1 Work Places Inspection.....	29
7.1.2 Construction Site Audit	31
7.2 Environmental Performance Criteria	33
8 Associated Forms	33
9 Records	33
10 Annexures	33
Annexure A: Contents for Contractor's Environmental File.....	33
Annexure B: Environmental Method Statement Example	33
Annexure C: Declaration of Understanding	33
Annexure D: Appointment of Contractor's Environmental Officer	33

1 Purpose

This document describes the main environmental management 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 enhanced. This document is critical to the principal Contractor and the Contractor's Environmental Officer (EO) as well as any sub-contractors performing work on the principal Contractor's behalf.

The purpose of this Document is to:

- Describe how project environmental risks will be identified and managed during the construction phase;
- Detail the roles and responsibilities of all parties with respect to environmental management during construction;
- Outline the organisational structure for effective implementation of the CEMP;
- Assist the Contractor in understanding the requirements of complying with the CEMP and any relevant specifications; and
- Provide a set of standards for environmental management during the construction phase.

2 Scope

This standard applies to Contractors that work on site under the control of Transnet Group Capital (TGC).

3 Abbreviations and Definitions

3.1 Abbreviations

Abbreviation	Meaning
CEMP	Construction Environmental Management Plan
CV	Curriculum Vitae
DEA	Department of Environmental Affairs
EA	Environmental Authorisation
ECO	Environmental Control Officer
EO	Environmental Officer

Abbreviation	Meaning
EGF	Environmental Governance Framework
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
NEMA	National Environmental Management Act 107 of 1998 (as amended)
NCR	Non-conformance Report
PES	Project Environmental Specification
SES	Standard Environmental Specification
SHEQ	Safety, Health, Environment and Quality
TGC	Transnet Group Capital
CM	Construction Manager
PEM	Project Environmental Manager
PM	Project Manager

3.2 Definitions

Compliance	The action or fact of complying with legislation or regulations.
Conformance	The action or fact of conforming to this standard and other internal policies, procedures, guidelines and best practice.
Construction Manager	Works together with the Project Manager and the TGC EO to ensure that construction proceeds in accordance with the relevant specifications and agreed schedule.
Contractor	The Principal Contractor as engaged by Transnet Group Capital for infrastructure 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 engaged by Transnet Group Capital directly in connection with any part of the construction operations which is not a nominated sub-contractor to the Principal Contractor.

Contractor's Environmental Officer	Contractor's Environmental Officer responsible for ensuring compliance with the CEMP.
Corrective Action	It is generally a reactive process used to address problems after they have occurred. Corrective action may be triggered by a variety of events, e.g. Non-conformance to documented procedures and work instructions, non-conformances raised through internal audits, unacceptable monitoring and measurement results, internal & external SHEQ complaints, etc.
Emergency	Sudden unforeseen event needing immediate or prompt action.
Environment	Surroundings in which the Contractor operates, including air, water, land, natural resources, flora, fauna, humans and their interrelations.
Environmental Aspect	Element of a Contractor's activities, products or services that can interact with the environment and cause an environmental impact (e.g. dust, noise etc.).
Environmental Authorisation	Environmental Authorisation is the authorisation granted by a competent authority of a listed activity or specified activity in terms of National Environmental Management Act 107 of 1998 (as amended).
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from a Contractor's activities, products or services.
Environmental Management Plan	A plan generated by the Contractor describing the relevant roles and responsibilities and how potential environmental risks will be assessed and managed including the monitoring and recording thereof.

Environmental Management Programme	A programme that has been approved by the Competent Authority in terms of NEMA, 107 of 1998 stipulating information on any proposed management, mitigation, protection or remedial measures that will be undertaken to address the environmental impacts that have been identified
Environmental Risk	The product of the likelihood and severity of an unforeseen occurrence/incident/aspect and the impact it would have, if realised, on the environment
Incident/Occurrence	An undesired event occurring at work that results in physical harm to a person or death, or damage to the environment, plant and/or equipment, and/or loss of production.
Method Statement	A document that describes how the Contractor will implement environmental management measures associated with a particular environmental aspect during construction.
Non-conformance	An action or situation that does not conform to Transnet/TGC's SHEQ standards, procedures or legislative requirement(s) and that can be, or lead to, an unacceptable SHEQ incident.
Non-compliance	Contravention to environmental legislative requirements.
Project Environmental Manager	Works together with the Project Manager and Construction Manager to ensure that the requirements of the CEMP/SES and applicable PES are met.
Project Manager	A person/s, as appointed by Transnet, responsible for the overall management and implementation of a project.

4 Overview of the CEMP

It is the stated goal of TGC to implement sustainable environmental management practices within the organisation. This will apply to the planning, design, construction, operation, restoration, reuse and decommissioning activities related to all infrastructure development, upgrade and maintenance. The CEMP is the tool used to ensure this goal is achieved during the construction and commissioning phases. Some decommissioning may occur during site clearing in brownfield sites and this CEMP will also apply to those activities.

The CEMP has been developed in line with the requirements of all relevant South African Environmental Legislation and Standards of Best Practice.

The CEMP and associated documents or specifications as well as the EA will be included in the Tender Documents issued to the prospective Contractors. The Contractors will incorporate all requirements set out in the specifications in their submissions to TGC.

There are two types of environmental specifications:

- **Standard Environmental Specification (SES)** describes the minimum standards for environmental management for a range of environmental aspects associated with all construction projects with which the Contractor must comply.
- **Project Environmental Specification (PES)** describes standards specific to a particular project. Variations and additions to the SES are set out in this PES. These would include the EA issued to the project or elements generally drawn from the EA or permits for that project or from specific requirements set by TGC Clients. The PES may also require a more stringent standard to that described in the SES if required by the EA or a particular industry code to which Transnet subscribes including any environmental constraints at a construction site. The PES need not be a separate document; however it can be in a format of an appendix/addendum making reference to environmental authorisation(s), permit(s) or licence(s) applicable to the project. In cases where the project does not trigger any of the NEMA listed activities or any permit(s)/licence(s), the PES may be compiled to prescribe additional environmental management measures over and above the measures stipulated on the SES.

The specifications are configured as performance specifications to ensure that TGC and any entities that enter into formal agreements with TGC achieve the required level of environmental performance.

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

5 Implementation of the CEMP

5.1 Roles and Responsibilities

5.1.1 TGC Project Environmental Manager (PEM)

The TGC PEM will be responsible for ensuring that the CEMP and associated specifications or requirements are complied with during construction. The TGC PEM will report functionally to the TGC Senior Manager: Environment and Sustainability, and relevant Project Manager.

Specific tasks during the construction stage will include:

- Liaison with the relevant authorities;
- Preparation of the PES;
- Tender evaluation, development of environmental criteria and adjudication thereof;
- Review all reports from the Environmental Officer/Specialist, including sign off on Method Statements and Monthly Audit reports;
- Conduct any environmental incident enquiries;
- Identify, with support from the TGC Construction Manager; the need for corrective or remedial measures with regard to proposed works;
- Ensure induction material includes project appropriate environmental issues;
- Approve training programmes and other awareness initiatives;
- Coordinate or facilitate internal environmental audits;
- Sign-off on audit reports prepared by ECOs; and
- Prepare environmental monitoring protocols (if monitoring to be done by Environmental Officer and not by an outside consultant).

The TGC PEM may delegate part or all of these responsibilities to the TGC Environmental Officer, based on the merits of the particular project at hand.

5.1.2 TGC Construction Manager

The TGC Construction Manager has overall responsibility for environmental management on site which includes the implementation of the CEMP, SES and PES and reports to the Project Manager. The TGC Construction Manager is supported by the TGC Environmental Officer/Specialist.

The specific environmental tasks for TGC the Construction Manager during the construction phase will include:

- Reviewing the monthly reports compiled by the TGC Environmental Officer/Specialist;
- Communicating directly with the Contractors on environmental issues observed on site; and
- Issuing non-conformance notifications to Contractors in consultation with the TGC Environmental Officer/Specialist

5.1.3 TGC Environmental Officer

The TGC Environmental Officer reports functionally to the TGC Construction Manager and TGC PEM and is responsible for conducting the tasks required to ensure that the CEMP, SES and PES are implemented on the construction site.

The TGC Environmental Officer will conduct the following tasks:

- Ensure that environmental issues receive adequate attention in the site induction training;
- Prepare Risk Reports;
- Prepare and conduct environmental awareness training, as and when required (e.g. posters, tool box talks, signage);
- Generate an inspection checklist prior to the project commencement for sign off by the TGC PEM;
- Review and approve site layout plan;
- Conduct monthly observation & inspection of all work places based on the approved inspection checklist;
- Monitor the Contractor's compliance with the CEMP, SES and PES;

- Develop an Audit Finding and Close out Register that documents all audit findings, close out actions and the time frame allowed for in order to close the finding/s;
- Ensure that all environmental monitoring programmes (sampling, measuring, recording etc. when specified) are carried out according to protocols and schedules;
- Measurement of completed work (e.g. areas top soiled, re-vegetated, stabilised etc.);
- Attendance at scheduled SHE meetings, as and when required, and project coordination meetings;
- Ensure that site documentation (permits, EA, EMPr, CEMP, method statements, audit reports, waste disposal slips etc.) related to environmental management is maintained on the relevant Document Control System;
- Inspect and report on environmental incidents and check corrective action;
- Keep a photographic record of all environmental incidents;
- Completion of Flash Reports for all Level 1 and 2 environmental incidents;
- Implementation of environmental-related actions arising from the minutes of scheduled meetings;
- Management of complaints register;
- Review and Sign off Method Statements prepared by Contractor's EO, as delegated by the TGC PEM;
- Audit conformance to Environmental Method Statements;
- Collate information received, including monitoring results into a monthly report that is supported with photographic records to the TGC Construction Manager showing progress against targets; and
- Report environmental performance of the project on a monthly basis through relevant governance channels.

The key deliverables will include the compilation of:

- Project Start Up Checklist
- Monthly Inspection Checklist
- Monthly Environmental Audit Report
- Monitoring Results, where required
- Flash reports
- Incident investigation Reports
- Environmental Incident Register
- Environmental Non-Conformance Register & Reports
- Complaints Register

- Method Statements Register
- Site Close Out Inspection
- Site Close-Out Reports

5.1.4 Environmental Control Officer

The Environmental Control Officer (ECO) is an independent person legally appointed to monitor compliance of construction related activities with the conditions of the Environmental Authorisation. The ECO fulfils an autonomous role and submits audit reports to the Competent Authority at intervals specified in the EA.

The ECO will conduct the following tasks:

- Monitor compliance to the conditions of the EA, EMPr and can include permits and licenses applicable to a project;
- Attend project meetings as and when required;
- Conduct audits at a frequency stipulated on the EA/EMPr; and
- Compile audit reports and submits them to relevant authorities.

5.1.5 Contractor's Environmental Officer

The Contractor will appoint an Environmental Officer before commencement of any work on site whose role is to ensure implementation of the requirements of the CEMP, SES and PES where applicable. The Contractor will submit the name and CV of the Environmental Officer as well as an Environmental Management Plan detailing roles and responsibilities with their tender submission. The Environmental Officer should have relevant environmental qualifications and experience required for the project. The level of qualifications and experience will depend on the complexity of the project and the sensitivity of the site. This will be for TGC's approval and no work can commence on site if this has not been done.

The Contractor's Environmental Plan will include, but not be limited to:

- Contractor's Environmental Organogram;
- A description of environmental management responsibilities of the Contractor's Project Manager, Contractor's Site Manager and the Contractor's Environmental Officer;
- A signed and dated organisational Environmental Policy;
- Environmental Method Statements; and

- Project-specific Environmental Management Plan;

The Contractor's Environmental Officer will liaise with the TGC Environmental Officer on site. It will be the responsibility of the Contractor's Environmental Officer to ensure that all work is conducted according to the approved Environmental Method Statements and that the roles and responsibilities as set out in this document are fulfilled. The Contractor Environmental Officer's tasks will include:

- Daily and weekly inspections of the work area(s) as per schedule or authorised through written instruction by TGC PEM or Environmental Officer. The Contractor is referred to Section 7 for an example of the items that will need to be inspected and which items will be audited by the TGC Environmental Officer;
- Prepare project-specific activity/aspect based Environmental Method Statements;
- Identify local, provincial and national environmental legislation that applies to the Contractor's activities;
- Ensure conformance/compliance to the CEMP, SES, PES, licenses and permits and approved Environmental Method Statements;
- Conduct ongoing Environmental Awareness Training of the Contractor's site personnel;
- Reporting, investigating and recording of any environmental incidents caused by the Contractor or due to the Contractor's activities, including their sub-contractors;
- Close out of environmental incidents;
- Attendance at all SHE meetings and induction programmes, and toolbox talks where required
- Monitor Waste Management;
- Monitor Water and Energy use;
- Ensure that environmental signage and barriers are correctly placed;
- Taking required corrective action within specified time frame and close out of non-conformances;
- Maintain site documentation related to environmental management (permits, CEMP, method statements, EA, reports, audits, monitoring results, receipts for waste removal etc.). Documentation to be maintained on the relevant site Document Control System;
- The compilation of the Project Environmental Management File
- Hazardous Substances Register; and
- Ensure the environmental file content is scanned monthly or in intervals agreed to by the TGC EO, as per the TGC index and submitted to the TGC document control monthly.

The Contractor's Environmental Officer will be expected to submit daily/weekly checklists as agreed by the TGC Environmental Officer to the TGC Environmental Officer.

When the Contractor's Environmental Officer is replaced after the person has been approved by TGC, the Contractor will submit a CV of a replacement Environmental Officer who has at least the same level of qualification and experience of the previous approved person for approval by the TGC Environmental Officer and TGC Construction Manager. No work can proceed until the replacement Environmental Officer has been approved.

5.1.6 The Contractor

The Contractor shall comply with the requirements of the CEMP and abide by the TGC Project Manager's and TGC Environmental Officer/Specialist's instructions regarding the implementation of the CEMP.

The Declaration of Understanding, as detailed in **Section 6**, must be signed during tender stage, and a signed copy must be submitted to the TGC Environmental Officer prior to the start of construction.

Section 6 details some of the main actions required from the Contractor at various stages during the contract. The TGC Environmental Officer will monitor that all of these actions are undertaken in accordance with the CEMP.

It must be noted, however, that **Section 6** does not list all the requirements of the CEMP, but rather serves as a guide as to where definite actions are required before certain activities can commence. It should be read in conjunction with the SES, and the PES.

Section 7 contains aspects that will be subject to regular inspections and audits by the various parties.

5.2 Organisational structure

The organisational structure identifies and defines the responsibilities and authority of the various entities involved in the project. All instructions and official communications regarding environmental matters will follow the organisational structure shown in **Figure 1**.

All instructions that relate to the CEMP will be given to the Contractor via the TGC Project Manager. In an emergency situation, however, the TGC Environmental Officer may give an instruction directly to the Contractor. Environmental Management of the site will be an item on the agenda of the monthly site meetings, and the TGC Environmental Officer will attend these meetings on request by the Contractor. If at any time the TGC Project Manager is uncertain in any way with respect to an environmentally related issue or specification in the CEMP, he will consult with the TGC PEM.

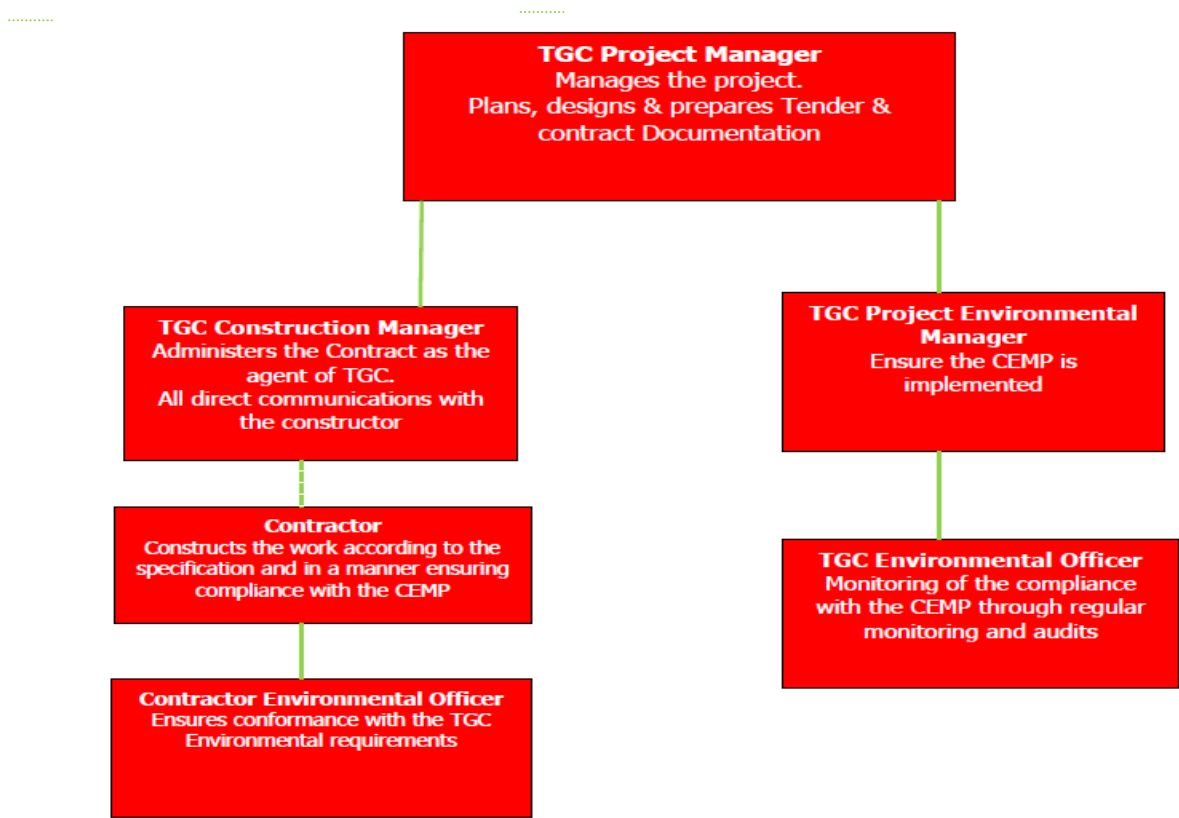


Figure 1: Typical TGC Organogram for Construction

5.3 Availability of the CEMP

Copies of the relevant CEMP documentation (SES, & PES, and any Contractor's Guideline Documents) must be available at the site offices of the Contractor and/or on site.

5.4 Project Environmental Management Plan

The Contractor is required to submit an Environmental Management Plan (EMP) with his Tender Documents. The EMP should describe the relevant roles and responsibilities and how potential environmental risks will be assessed and managed including the monitoring and recording thereof. These will be used to establish a Contractor's competency and experience of preventing and managing potential environmental impacts.

5.5 Environmental Method Statements

Environmental Method Statements are written submissions by the Contractor to the TGC Construction Manager and Environmental Officer describing:

- The proposed activity, setting out the plant, equipment, materials, labour and method the Contractor proposes using to carry out an activity;
- The environmental management of site conditions – waste management, housekeeping, site establishment;
- Transportation of the equipment to and from site;
- How the equipment/ material will be moved while on site;
- How and where material will be stored;
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- Timing and location of activities;
- Description of potential positive and negative environmental impacts and how they will be managed;
- Conformance/ non-conformance with the Standard Environmental Specification and any other statutory and best practice standards;
- Monitoring and reporting requirements;
- Records Management; and
- Any other information deemed necessary by the TGC Construction Manager and TGC EO as well as ECO where applicable.

The Contractor will compile Activity/Aspect-based Environmental Method Statements for all activities proposed. The Environmental Method Statements will enable the potential positive and negative environmental impacts associated with the proposed construction activity to be identified and mitigation measures put in place. All method statements must be signed by both the Contractor and TGC CM and EO, with the addition of the ECO on authorised projects, thereby indicating that the works will be carried out according to the methodology described therein.

Activities may only commence once the Environmental Method Statements have been approved by the TGC PEM, Construction Manager and/or ECO. In some instances local authorities may also need to approve the method statements. This will be highlighted in the Project Environmental Specification, when applicable.

All changes to the original Method Statements must be approved by the TGC PEM/EO and/or TGC Construction Manager prior to implementation. The Contractor, TGC CM, EO and/or ECO will also be required to re-sign the amended Environmental Method Statement.

To enable timely approvals, the environmental method statements will be submitted to the TGC Construction Manager and TGC Environmental Officer for review **two (2) weeks** prior to the intended date of commencement of the activity, or as directed by the TGC Project Manager/Construction Manager.

Where changes to the work methodology are proposed, Environmental Method Statements must be amended accordingly and signed off by all relevant parties as indicated above. These Environmental Method Statements MUST contain sufficient information and detail to enable the TGC Construction Manager and/or Environmental Officer to apply their minds to the potential impacts of the works on the environment. The Contractor will also need to thoroughly understand what is required of him/her in order to undertake the works.

The initial Environmental Method Statements required for submission and approval are listed in the environmental specifications. Others may be requested by the TGC Construction Manager and/or TGC Environmental Officer/ECO during the Contract.

An explanatory example of an environmental method statement on the pro forma method statement sheet to be completed has been included as **Annexure B**.

5.6 Environmental Incidents

Environmental incidents are classified under four levels: 1, 2, 3 and 4. For the purpose of this document; they are defined as follows:

5.6.1 Level 1 Environmental Incident

An incident or sequel of incidents, whether immediate or delayed, that results or has the potential to result in:

- A significant impact on the physical or biological environment (air, ground, water and habitat) with extensive or long term impairment of ecosystem function or surface and ground water resources.
- An inconvenience/ disturbance/disruption/annoyance (including odour, dust, noise, traffic problem, loss of water supply) of a long duration or with a long term impact on interested and affected parties. A release of material (gas, liquid, solid) or energy that will cause chronic illness, permanent lost time injury, fatality or extensive property damage experienced by interested and affected parties.
- Irreparable damage to highly valued structures and sacred locations.
- Public or national / international media outcry.
- Instances where inspections undertaken by or for the regulator to check legal compliance, were found to be outside the permitted limits and have resulted in prosecution.

Where the environmental impact of a Level 2 environmental incident is still present 120 days after occurrence, the incident will be reclassified as a Level 1 incident.

NOTE: A Level 1 environmental incident usually should be reported to the authorities, the incident usually results in significant pollution and may entail risk of public danger. Level 1 environmental incidents usually cause an irreversible impact even with the involvement of long-term external intervention i.e. expertise, best available technology, remedial actions, excessive financial cost etc.

5.6.2 Level 2 Environmental Incident

An incident or sequel of incidents, whether immediate or delayed, that results or has the potential to result in:

- A moderate impact on the physical or biological environment (air, ground, water or habitat) with limited impairment of ecosystem function and/or surface and ground water resources.
- An inconvenience disturbance/ disruption/annoyance (including odour, dust, noise, traffic problems, loss of water supply) of moderate or with medium effect on interested and affected parties.
- A release of material (gas, liquid, solid) or energy that causes severe but reversible illness, non-lost time injury or moderate property damage experienced by interested and affected parties.
- Damage to rare structures of cultural significance or significant infringement of cultural values / sacred locations.
- Attention from local media or widespread complaints.
- Instances where inspections undertaken by or for the regulator to check legal compliance have been outside the permitted limits and an official pre-directive or directive was issued.
- Inability of Contractors to close out corrective actions in an NCR without proper reason.

NOTE: A Level 2 environmental incident may be reported to the authorities, can result in significant pollution or may entail risk of public danger. The impact of Level 2 environmental incidents should be reversible within a short to medium term with or without intervention.

5.6.3 Level 3 Environmental Incident

An incident or sequel of incidents, whether immediate or delayed, that results or has the potential to result in:

- A minor impact on the physical or biological environment (air, ground, water or habitat), with no significant or long-term impairment to the ecosystem function or surface/ground water resources.
- An inconvenience / disturbance / disruption / annoyance (including odour, dust, noise, traffic problems, loss of water supply) of short duration and with no long-term effect on the employees and the community.
- A release of material (gas, liquid, solid) or energy that has the potential to cause illness, or that causes short term discomfort or reversible health effect to interested and affected parties.
- Isolated complaints by interested and affected parties.

- Instances where inspections undertaken taken by or for the regulator to check for legal compliance, have been outside the permitted limits and a non-compliance notice was issued.

NOTE: A Level 3 environmental incident is not reportable to authorities, should not result in pollution and may not have a risk of public danger. The impact of Level 3 environmental incidents should be insignificant immediately after occurrence and/or once-off intervention on the day of occurrence.

5.6.4 Level 4 Environmental Incident

A minor incident with lesser significance that did not necessarily result in damage or injury but that had the potential to cause damage to the environment, including:

- Could result in service disruption with a lesser significance;
- Did not necessarily result in damage; and/or
- Had the potential, under different circumstances, to cause major damage to the environment

In the event of an environmental incident, the Contractor will follow the following procedure:

- | | |
|---------|--|
| Step 1: | Immediately take all reasonable measures to contain and minimise the effects of the incident, including its effects on the environment and any risks posed by the incident to the health, safety and property of persons; |
| Step 2: | Telephonically notify the TGC Environmental Officer and follow up in writing within <i>one(1) working day</i> including the following information: the nature of the incident and initial classification; substances involved with quantities; initial measures taken to minimise impacts; causes of the incident; measures taken and proposed to avoid the reoccurrence of the incident; |
| Step 3: | Step 3: Report the incident on all relevant documents and systems - TGC Environmental Incident Register; TGC Environmental Incident Report and TGC Incident Flash Report; |
| Step 4: | Undertake clean-up procedures; |
| Step 5: | Remedy the effects of the incident; and |

Step 6: Assess the immediate and long-term effects of the incident on the environment and on public health;

In the event of any Level 1 or 2 environmental incidents, the Contractor's Environmental Officer must complete a TGC Incident Flash Report (FAC-FAT-0005); TGC Environmental Incident Report and document the incident on the TGC Environmental Incident Register.

In the event of any Level 1 or 2 environmental incidents, the TGC Environmental Officer will:

- Ensure that an Incident Flash Report (FAC-FAT-0005) has been compiled and that it contains the necessary information; and
- Ensure that Contractor has complied with relevant Transnet protocols on Occurrence Management.

In the event of any Level 3 environmental incident, the Contractor's Environmental Officer must complete a TGC Environmental Incident Report and document the incident on the TGC Environmental Incident Register.

In the event of any Level 4 environmental incidents, the Contractor's Environmental Officer must document the incident on the TGC Environmental Incident Register and/or the Contractor's Incident Register.

In the event of an incident (regardless of level) occurring, the TGC EO shall ensure that the problem statement on the report is clear, the actual or potential consequences are noted, and priority mitigation actions and responsibility for actions are indicated where necessary.

5.7 Public Complaints

Any public complaint received shall be dealt with as depicted in Figure 2.

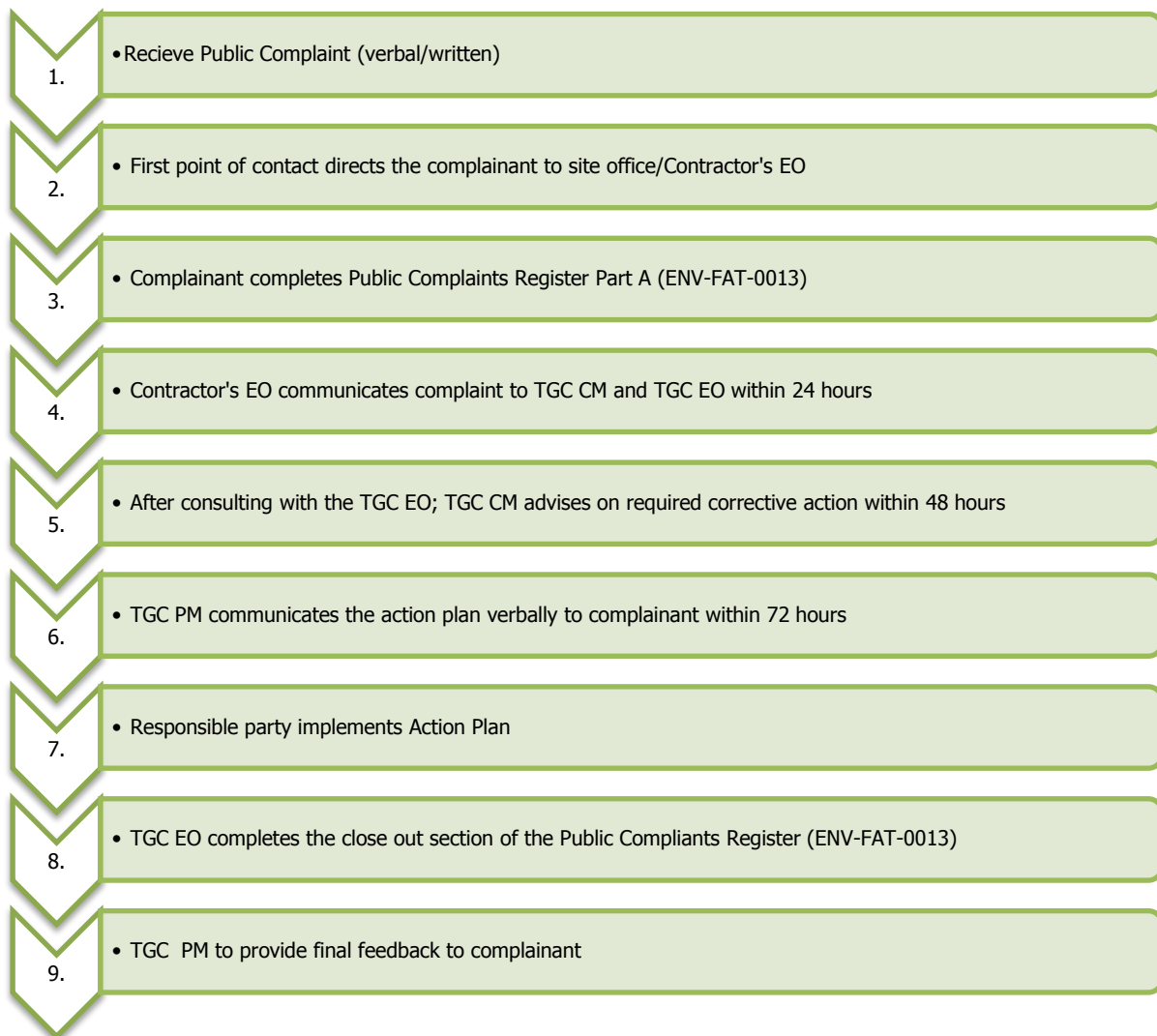


Figure 2: Public Complaints Procedure

5.8 Environmental Non-Conformances

A non-conformance may be issued to the Contractor by the TGC Project Manager/Construction Manager/Environmental Officer where:

- The incident response procedure described in section 5.6 above (including administrative requirements) was not successfully implemented; or
- There are repeated incidents due to inadequate environmental practices on site;
- Documentation required to comply with the CEMP is not prepared or maintained adequately on site; or

- Any non-compliance/non-conformance with the requirements of the Environmental Authorisations, the CEMP, permit(s), licence(s) and Environmental Specifications are identified.

Any environmental non-conformance will be dealt with similarly to a *Defect* as defined in the Contract. A defect is due to non-compliance with the *Works Information* and it is the responsibility of the Contractor to correct the defect in order to ensure that the work takes place in accordance with the *Works Information*. Similarly, non-conformance with the CEMP and SES or with any other permit or licence will be regarded as a non-conformance with the *Works Information*. The Contractor is responsible to rectify any *defect* (non-conformance) as defined above promptly.

The Contractor's EO shall be responsible to search for and identify non-conformances with the environmental specifications at inspection intervals agreed to with the TGC Environmental Officer. The TGC Environmental Officer shall also undertake such inspections on a monthly basis. If such monthly inspections indicate that any part of the Contractor's work is non-conformant with the requirements of the CEMP, permit(s), licence(s), the TGC Environmental Officer shall complete an Environmental Non-Conformance Report and advise the TGC PM to issue a Defects Notification to the Contractor accordingly. The Contractor shall correct the non-conformance (defect) within the timeframes specified in the report and notification and submit proof of such correction to the TGC Environmental Officer by virtue of a completed Non-Conformance Report and up to date Non-Conformance Register.

The Contractor shall be responsible to rectify all environmental non-conformances at the time depicted as per Non-conformances that have not been rectified by the defects in the Contract date, the TGC Environmental Officer shall not issue the Contractor with a Site Closure Certificate. In such an event, the Supervisor may also make use of any reasonable contractual means to rectify the non-conformance(s) as allowed by the Contract (retention moneys etc.).

If the defect (non-conformance) is not corrected within the Defect Correction Period, the TGC Construction Manager can assess the cost of correction by others, and this amount needs to be paid by the Contractor.

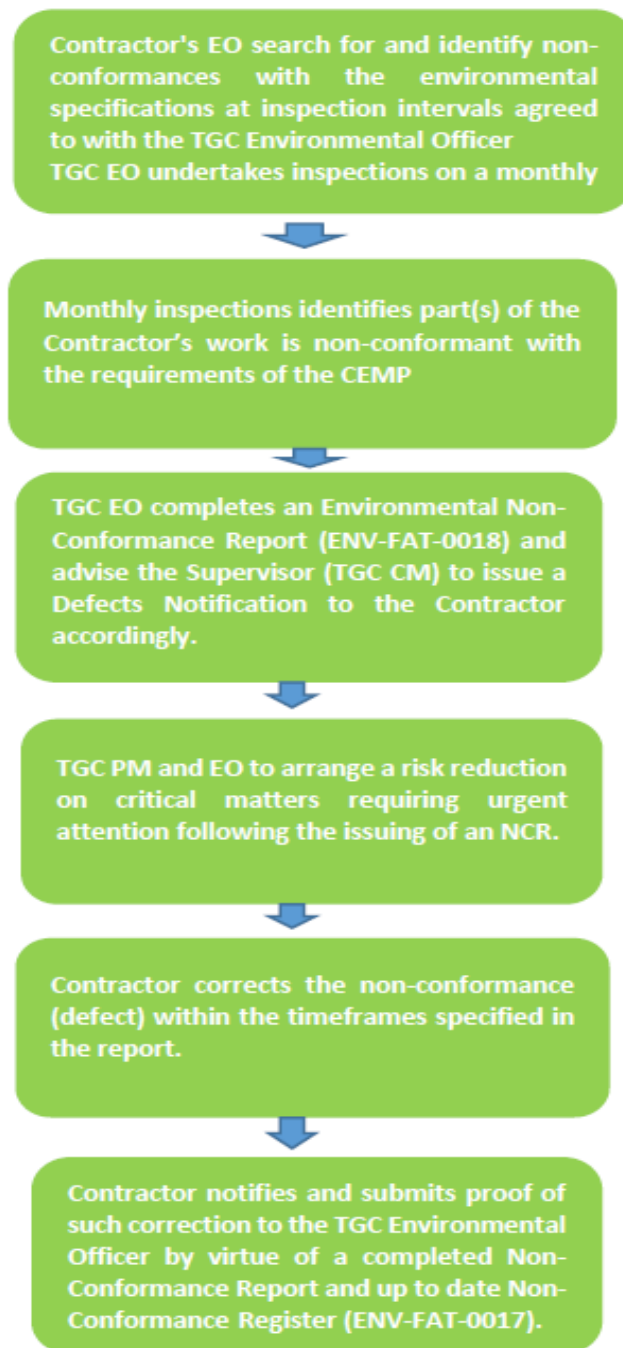


Figure 3: Non-Conformance procedure

NOTE: Each Non-conformance should be listed and numbered separately.

5.9 Documentation and Records

The TGC Document Control will ensure that the Contractor is supplied with all required/applicable documents listed in the TGC Contents for the Contractors Environmental Management File. This Document has been included as **Annexure A**.

The Contractor's Environmental Officer will complete and maintain copies of all documents and records listed in Annexure A and ensure that these documents and records are kept up to date.

The Contractor's Environmental Officer will submit these documents to the TGC Environmental Officer on a frequency as agreed to, except where documents have remained unchanged in which case written notification to this effect must be provided to the TGC Environmental Officer. The Contractor's EO must ensure that electronic copies of these documents are saved on the system.

Once the construction activities have been completed and the TGC Environmental Officer has conducted a site closure inspection and notified the Contractor that site closure will be granted, all documents described above must be handed over to the TGC Environmental Officer after which a Site Closure Certificate will be issued.

NOTE: All documents/records are to be retained, within the TGC Document Control System, for a period of 10 years. In the event of environmental documentation/record being lost before receiving a Site Closure Certificate, the Contractor will be penalised according to the specifications laid down in the relevant project-specific contract.

5.10 Application for Exemption

It is intended that the CEMP and SES be applicable to projects or activities of any size or complexity. For projects with minimal environmental impacts, or where the scope of work is limited; the Contractor may request, in writing to the TGC Project Manager, for exemption from parts of the CEMP. The TGC Project Manager will consult the TGC PEM/TGC Environmental Officer in reaching a decision on whether exemption from some of the CEMP provisions may be granted.

6 Main Actions required by the Contractor to comply

6.1 Prior to Commencement

The TGC Project Manager must ensure that the requirements below are requested of the Contractor in the Project Construction Contract Document, the Letter of Appointment and any other relevant correspondence with the Contractor prior to the start of works, as relevant.

6.1.1 Declaration of Understanding (DoU)

The Declaration of Understanding will be signed, by a person of authority, and provided by the Contractor as part of his Tender Document. The signed DoU is a written confirmation by the Contractor that the requirements of the CEMP, PES, EA, EMPr and other licenses/permits are understood and will be complied with for the duration of their works on site. Post-contract award, a DoU must be signed by the Contractor's EO to confirm that the requirements of the CEMP, SES, PES and other applicable permits and licences will be complied with. A signed DoU must be kept in the green file at all times.

The pro forma DoU to be signed by the Contractor has been included as **Annexure C**.

6.1.2 Appointment of Contractor's Environmental Officer

The Contractor will appoint an Environmental Officer or depending on the environmental impact of the project, assign a competent person, roles and responsibilities for environmental management during construction. The qualifications and experience of this person shall be stipulated at tender stage taking due regard to the complexity of the project and the sensitivity of the environment. The Contractor will forward details of the appointment to the TGC Construction Manager and TGC PEM for their review and approval. Should the Contractor's Environmental Officer or the person originally assigned with responsibilities for environmental management change from that person identified during either the tender stage, or the construction period, the Contractor will submit the details of such appointment or assignment for the TGC Project Manager's approval. No work will proceed until the new Environmental Officer is assigned or appointed. The Contractor's EO must be employed for the duration of the contract and be 100% allocated to project. Sharing of an EO resource between projects is not allowed unless if it's agreed upon with TGC Environment and Sustainability Department.

The pro forma appointment letter for the Environmental Officer to be appointed by the Contractor has been included as **Annexure D**.

6.1.3 Environmental Management Plans and Method Statements

Where relevant, an Environmental Management Plan and Environmental Method Statements, to meet the requirements of the CEMP, SES and relevant EA, permits/licences (activity based environmental method statements), will be provided by the Contractor as part of their Tender.

Required method statements will be specified in the Quality Criteria of the tender. These include, but are not limited to, the following where applicable:

- Establishment of construction lay down area
- Hazardous and non-hazardous waste management
- Storm water management
- Handling, Storage and Management of Hazardous Substances
- Contaminated water management
- Prevention of marine pollution
- Hydrocarbon spills
- Diesel tanks and refuelling procedures
- Dust control
- Spoil dumping
- Sourcing, excavating, transporting and dumping of fill material
- Noise and vibration control
- Removal of rare, endemic or endangered species
- Removal and stockpiling of topsoil
- Rodent and pest control
- Environmental awareness training
- Site establishment and demarcation
- Emergency procedures for environmental incidents
- Closure of construction laydown area
- Rehabilitation

Emergency construction activity Environmental Method Statements may also be required. The activities requiring Environmental Method Statements cannot commence if they have not been approved by the Construction Manager and PEM, ECO or Environmental Officer.

6.1.4 Environmental Induction

The Contractor will ensure that all management, foremen and the general workforce, as well as all sub-contractors, suppliers and visitors to site have attended the TGC Environmental Induction Programme prior to commencing any work on site. Where new personnel commence work on site during the construction period, the Contractor will ensure that these personnel also undergo the TGC Environmental Induction Programme and are made aware of the environmental specifications on site. The Contractor must ensure that all of their personnel understand the

requirements of the EA, EMPr, CEMP, SES, relevant permits and licences and PES as relevant to their scope of work.

6.2 During Construction

6.2.1 Copy of the CEMP and familiarisation thereof

A copy of the CEMP, SES and where relevant, EA, licenses and permits will be available on site and the Contractor will ensure that all the personnel on Site (including sub-contractors and their staff) as well as suppliers, are familiar with and understand the specifications contained in these documents.

6.2.2 Compliance with the SES and PES and relevant permits and licences

The Contractor will ensure that all sections of the SES and PES (where relevant), relevant EA, permits and licences are complied with during the construction period.

6.2.3 Site clean-up for Closure

Retention moneys will not be paid until a Site Closure Inspection (conducted by the TGC Environmental Officer) has taken place and site closure granted and signed off by the TGC Construction Manager and TGC PEM together with the Site Closure Certificate.

7 Environmental Inspections and Audits

7.1 Environmental Inspections and Audits

Environmental inspections and audits are conducted using five basic techniques:

- Interviews with Contractor's staff including Sub-contractors and suppliers
- Document review
- Observations
- Monitoring
- Measurement and verification

This document sets out the areas and aspects of the construction site that will be inspected or audited, the frequency of such audits, the auditor and auditee.

It should be noted that these lists are not exhaustive and that each site will have specific issues that will need to be audited.

For each construction project, the auditor and auditee are as follows:

Table 1: Relationship between Auditor/Auditee

Place	Inspector/Auditor	Auditee	Inspection/audit frequency
Work places	Contractor's Environmental Officer	Contractor's team	Daily/Weekly Inspection
Construction site (entire area)	TGC Environmental Officer	Contractor's Environmental Officer	Monthly Audit
Construction site (entire area)	Environmental Specialist: Assurance	TGC EO and PEM	As stipulated on the annual audit protocol
Construction site (entire area)	Environmental Control Officer	Construction team (TGC and Contractors)	As stipulated on the EA or TGC Contract

7.1.1 Work Places Inspection

The Contractor's Environmental Officer will be required to conduct daily/weekly inspections of all work places for which the Contractor is responsible, including but not limited to the following:

- Contractor's camp, recreational and canteen facilities
- Material lay down areas
- Liquid and solid waste storage facilities (general, hazardous, recycling and scrap)
- Workshops
- Oil traps
- Wash bays
- Construction work area
- Spray Booths
- Haul roads
- No-go areas
- Storm water drains

- Any other construction area for which the SHE Officer is responsible

At each of these sites, the Contractor's Environmental Officer will be required on a daily basis to check for the following, where relevant:

By observation:

- Litter
- Separation of solid waste as per system
- Hydrocarbon spills
- Effectiveness of dust control measures
- Illegal washing out of containers in drains
- Wash bay drainage systems are working
- Correct usage of drip trays
- Effectiveness of oil separators
- Water use and wastage
- Pollution of rivers and sea
- Provision and use of toilet facilities
- Any other illegal activities

By document check:

- Removal of oil for recycling as per schedule
- Removal of packaging as per agreements with suppliers
- Removal of hazardous waste by specialist Contractors as per schedule
- Correct placement of environmental signage and posters
- Document board listing emergency numbers, hazmat info sheets, etc.

The following records must also be kept up to date (information must include that of sub-contractors where relevant):

- Fuel consumption for entire contract period measured in litres (including plant, generators, other equipment, vehicles etc.)
- Electricity consumption for entire contract period measured in Watt hours
- Quantities of general waste submitted for recycling measured in kilograms
- Quantities of general waste disposed of to landfill measured in kilograms
- Quantities of hazardous waste submitted for recycling measured in kilograms
- Quantities of hazardous waste disposed of to landfill measured in kilograms

- Water consumption, including water used for construction and human consumption measured in litres

7.1.2 Construction Site Audit

The TGC Environmental Officer will be required to conduct monthly inspections of the entire construction site, which may involve more than one Contractor and may include, but not be limited to the following:

- Entire site
- Fencing
- Environmentally sensitive areas
- Contractor's camp, recreational and canteen facilities
- Material lay down areas
- Scrap yard
- Workshops
- Oil traps
- Wash bays
- Sewage plant
- Quarries and borrow pits used for fill and construction material
- Spoil dumping areas
- Solid waste disposal areas
- Liquid waste disposal areas
- Bioremediation site
- Area for the temporary storage of hazardous waste
- Fuel depot and hydrocarbon storage areas
- Construction work area
- Concrete batching plant
- Spray booths
- Haul roads
- No-go areas
- Storm water drains
- And any other construction areas not listed

At each of these sites, the TGC Environmental Officer will be required to check for the following, where relevant:

By observation:

- Litter
- Separation of solid waste as per system
- Hydrocarbon spills
- Use of bunding, hard standing and other protection measures
- Illegal dumping
- Effectiveness of dust control measures
- Illegal washing out of containers in drains
- Wash bay drainage systems are working
- Correct usage of drip trays
- Effectiveness of oil separators
- Illegal use of tracks and off-road driving in no-go areas
- Correct procedures are followed for topsoil removal and stockpiling
- Effectiveness of erosion protection measures
- Excess noise and vibration
- Water use and wastage
- Pollution of rivers and sea
- Provision and use of toilet facilities
- Topsoil removed and stockpiled
- Any other illegal activities

By document check:

- All receipts for the collection of old oil, general recycled waste and hazardous waste
- Correct placement of environmental signage, SHEQ policies and posters
- Document board listing emergency numbers, hazmat info sheets, etc.
- Complete and accurate record of Contractor's Environmental File

By measurement:

- Amount of water used by each Contractor (where practical and/or required by TGC EO)
- Amount of land stabilisation completed
- Area re-vegetated
- Amount of waste recycled, sent to scrap yard or disposed in dump
- Amount of material treated in the bioremediation site

By monitoring:

- Effectiveness of dust control systems
- Effectiveness of pollution control systems
- Effectiveness of rehabilitation and re-vegetation programmes
- Effectiveness of erosion control methods
- Effectiveness of noise control barriers

A site-specific inspection checklist will be provided to the TGC Environmental Officer, by the Contractor's EO, prior to site establishment.

7.2 Environmental Performance Criteria

The Contractor will be required to achieve the minimum requirement for environmental audits. The standard/minimum requirement for all environmental audits, as per the TGC Environmental Governance Framework is 80%. Furthermore, the standard/minimum requirement for all audits conducted by ECO is 90%.

8 Associated Forms

The list of applicable environmental forms and templates will be maintained by TGC's Document Management Department, and these are revised as and when required.

9 Records

All environmental records/documents generated during the construction phase of the project will be managed in terms of the Transnet Document, Data and Records Management Procedure.

10 Annexures

- Annexure A: Contents for Contractor's Environmental File**
- Annexure B: Environmental Method Statement Example**
- Annexure C: Declaration of Understanding**
- Annexure D: Appointment of Contractor's Environmental Officer**

Annexure A: Contents for Contractor's Environmental File



CONTENTS FOR CONTRACTOR'S ENVIRONMENTAL FILE

PROJECT NAME:		DOCUMENT NO:	
PROJECT NO:		DATE:	
CONTRACTOR:		CONTRACT NO:	

The following documents must be incorporated into the Contractors Environmental File

No	Item Description	Document No	Tick
1.1	Transnet Safety, Health, Environmental and Quality – Risk Management Policy Statement dated 10 June 2016.		
1.2	TGC Safety, Health, Environmental Management and Quality Policy dated 01 June 2016.		
1.3	Transnet Construction Environmental Management Plan (CEMP) as supplied to Contractor by Transnet Group Capital	ENV-STD-001 Rev03	
1.4	Transnet Standard Environmental Specification (SES) as supplied to Contractor by Transnet Group Capital	ENV-STD-002 Rev03	
2	Project Environmental Specification (PES) as supplied to Contractor by Transnet Group Capital	ENV-FAT-0001	
3	Declaration of Understanding (Signed)	ENV-FAT-0002	
4.1	Contractor's Information	ENV-FAT-0003	
4.2	Contractor's Environmental Policy		
4.3	Contractor's Organogram		
4.4	Contractor's Environmental Management Plan		
4.5	Appointment of Contractors EO and Declaration of Understanding (Including CV and Job Profile)	ENV-FAT-0004	
5	Schedule of Contractor's Construction Plant and Equipment	ENV-FAT-0005	
6	Hazardous Substances Register	ENV-FAT-0006	
7	Emergency Contacts Register	ENV-FAT-0007	
8	Energy Consumption Register	ENV-FAT-0032	

CONTENTS FOR CONTRACTOR'S ENVIRONMENTAL FILE

9	Water Usage Register	ENV-FAT-0033	
10	List of Interested and Affected Parties	ENV-FAT-0008	
11	Induction Attendance Register	Rev 00-01	
12	Project Start-Up Checklist	ENV-FAT-0022	
13	Site Access Certificate	ENV-FAT-0010	
14	Method Statement Register	ENV-FAT-0011	
15	Method Statements	ENV-FAT-0026	
16	Waste Disposal Register	ENV-FAT-0012	
17	Daily Inspection Checklist	ENV-FAT-0023	
18	Weekly Inspection Checklist	ENV-FAT-0024	
19	Monthly Compliance Audits	ENV-FAT-0025	
20	Public Complaints Register	ENV-FAT-0013	
21	Record of Formal External Communications	ENV-FAT-0014	
22	Incident Register	ENV-FAT-0015	
23	Incident Reports	ENV-FAT-0016	
24	Non Conformance Register	ENV-FAT-0017	
25	Non Conformance Reports	ENV-FAT-0018	
26	Awareness/Toolbox Attendance Register (Including Awareness Material)	ENV-FAT-0019	
27	Minutes of Monthly SHE Meetings		
28.1	Environmental Site Rules for Visitors	ENV-GL-0002	
28.2	Environmental Site Rules for Contractors	ENV-GL-0003	
29	Basic Site Procedures	ENV-GL-0001	

CONTENTS FOR CONTRACTOR'S ENVIRONMENTAL FILE

30	TGC Environmental Induction		
31	Contractor's Environmental Management File Handover	ENV-FAT-0020	
32	Site Closure Inspection Form	ENV-FAT-0021	
33	Site Closure Certificate	ENV-FAT-0021	
34	Application for Exemption	ENV-FAT-0034	

Annexure B: Environmental Method Statement Example



ENVIRONMENTAL METHOD STATEMENT

PROJECT NAME:

PROJECT NO: **DOCUMENT NO:**

CONTRACTOR: **DATE:**

PROPOSED ACTIVITY (give title of method statement and reference number from the CEMP):

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works):

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works):

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:

End Date:

DESCRIPTION OF HOW POTENTIAL ENVIRONMENTAL IMPACTS WILL BE PREVENTED OR MANAGED (provide as much detail as possible, including annotated sketches and plans where possible):

ENVIRONMENTAL STANDARDS (list the applicable environmental standards to be met):

MONITORING AND RECORD KEEPING (Describe how the activity will be monitored to ensure that the environmental standards are met, as well as the records to be kept):

DECLARATIONS

CONTRACTOR'S ENVIRONMENTAL OFFICER (The work described in this Environmental Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm):

Print Name	Signature	Date
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PERSON UNDERTAKING THE WORKS I understand the contents of this Environmental Method Statement and the scope of the works required of me. I further understand that this Environmental Method Statement may be amended on application to other signatories and that Transnet Group Capital Environmental Manager and Construction Manager will audit my compliance with the contents of this Environmental Method Statement

ENV-FAT-0026Rev 2 Page 1



ENVIRONMENTAL METHOD STATEMENT

Print Name	Signature	Date
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TGC ENVIRONMENTAL OFFICER The work described in this Environmental Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm:

Print Name	Signature	Date
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APPROVING AUTHORITY (i.e. the Employer's Construction Manager)

The works described in this Method Statement are approved.

Print Name	Signature	Date
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Annexure C: Declaration of Understanding



DECLARATION OF UNDERSTANDING

PROJECT NAME:		DOCUMENT NO:	
PROJECT NO:		DATE:	
CONTRACTOR:		CONTRACT NO:	

I,

(Name)

(Designation)

(Representing)

Declare that I have read and understood the contents of the Construction Environmental Management Plan (ENV-STD-001) and associated documents for the above mentioned Project and Contract.

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed	Signature	Date
Place		
Witness 1:	Signature	Date
Witness 2:		

Annexure D: Appointment of Contractor's Environmental Officer



APPOINTMENT OF CONTRACTOR ENVIRONMENTAL OFFICER & DECLARATION OF UNDERSTANDING

APPOINTMENT OF CONTRACTOR ENVIRONMENTAL OFFICER AND DECLARATION OF UNDERSTANDING		REFERENCE	
We, _____ (Contractor), hereby confirm that _____ has been appointed as Environmental Officer for the duration of Contract _____, the scope of which entails _____ _____ (Description of scope of works) _____ I, _____ (Appointed Environmental Officer) declare that I have read and understand the contents of: The Transnet Group Capital (TGC) Construction Environmental Management Plan (CEMP) and Standard Environmental Specification (SES), documentation issued for Contract _____ I, (Appointed Environmental Officer) also declare that I understand my responsibilities in terms of enforcing and implementing the requirements of the Construction Environmental Management Plan, Standard Environmental Specification (SES) and any Project Environmental Specifications (PES) that may be relevant or required for this project.			
Environmental Officer CV attached	Y	N	Environmental Officer Job Description attached
Signed (Contractors Environmental Officer)	Signature		Date
Received By (TGC Environmental Officer)	Signature		Date