

Transnet National Ports Authority

an Operating Division **TRANSNET SOC LTD**

[Registration Number 1990/000900/30]

REQUEST FOR PROPOSAL (RFP)

APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR A PERIOD OF FIVE (5) MONTHS.

RFP NUMBER	: TNPA/2022/08/0868/9744/RFP
ISSUE DATE	: 06 OCTOBER 2022
COMPULSORY BRIEFING SESSION	: 14 OCTOBER 2022
CLOSING DATE	: 03 NOVEMBER 2022
CLOSING TIME	: 16:00
TENDER VALIDITY PERIOD	: 12 weeks from closing date

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T1.1 TENDER NOTICE AND INVITATION TO TENDER

SECTION 1: NOTICE TO TENDERERS

1. INVITATION TO TENDER

Responses to this Tender [hereinafter referred to as a **Tender**] are requested from persons, companies, close corporations or enterprises [hereinafter referred to as a Tenderer].

DESCRIPTION	APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR A PERIOD OF FIVE (5) MONTHS.
TENDER ISSUE AND DOWNLOADING	<p>Tender issue date: 06 October 2022.</p> <p>The RFP may also be downloaded from the Transnet website at www.transnet.net free of charge. To access the Transnet e-Tender portal, please click here</p> <p>AND/ OR</p> <p>This RFP may be downloaded from National Treasury's e-Tender Publication Portal at www.etenders.gov.za free of charge.</p> <p>To download RFP and Annexures:</p> <ul style="list-style-type: none"> • Click on "Tender Opportunities"; • Select "Advertised Tenders"; • In the "Department" box, select Transnet SOC Ltd; <p>Once the tender has been located in the list, click on the "Tender documents" tab and process to download all uploaded documents.</p> <p>FREE OF CHARGE</p>
INTENTION TO TENDER	<p>Tenderers are to please indicate their intention to respond to this tender to the following addresses: Bhatisani.Widzani@transnet.net and Sisanda.Msi@Transnet.net.</p> <p>This is to ensure that any required communication (e.g. addenda to the RFP) in relation to this RFP reaches those intending to respond.</p>

	<p>Any addenda to the RFP or clarifications will be published on the e-tender portal and Transnet website. Bidders are required to check the e-tender portal or Transnet website prior to finalising their bid submissions for any changes or clarifications to the RFP.</p> <p>Transnet will not be held liable if Tenderers do not respond by this date and do not receive the latest information regarding this RFP with the possible consequence of either being disadvantaged or disqualified as a result thereof.</p>
COMPULSORY TENDER CLARIFICATION MEETING	<p>A Compulsory Tender Clarification Meeting will be conducted at eMendi Building, eLwandle Boardroom, Ground Floor, Port of Ngqura, Port Elizabeth on 14 October 2022, at 13:00 o'clock for a period of \pm 2 (two) hours. [Tenderers to provide own transportation and accommodation].</p> <p>The Compulsory Tender Clarification Meeting will start punctually and information will not be repeated for the benefit of Tenderers arriving late.</p> <p>A Site visit/walk will take place, tenderers are to note:</p> <ul style="list-style-type: none"> • Tenderers are required to wear safety shoes and long sleeve shirts long pants. • Tenderers without the recommended PPE will not be allowed on the site walk. • Tenderers and their employees, visitors, clients and customers entering Transnet Offices, Depots, Workshops and Stores will have to undergo breathalyser testing. • All forms of firearms are prohibited on Transnet properties and premises. • The relevant persons attending the meeting must ensure that their identity documents, passports or drivers licences are on them for inspection at the access control gates.

	<p>Certificate of Attendance in the form set out in the Returnable Schedule T2.2-01 hereto must be completed and submitted with your Tender as proof of attendance is required for a compulsory site meeting and/or tender briefing.</p> <p>Tenderers are required to bring this Returnable Schedule T2.2-01 to the Compulsory Tender Clarification Meeting to be signed by the <i>Employer's</i> Representative.</p> <p>Tenderers failing to attend the compulsory tender briefing will be disqualified.</p>
CLOSING DATE	<p>16:00 on 03 November 2022</p> <p>Tenderers must ensure that tenders are uploaded timeously onto the system. If a tender is late, it will not be accepted for consideration.</p>
RFP CLARIFICATION REQUEST	<p>For specific queries relating to this RFP, an RFP Clarification Request Form should be submitted onto the system and to Bhatiani Widzani before 12:00noon on 27 October 2022 substantially in the form set out hereto. In the interest of fairness and transparency, Transnet's response to such a query will be published on the e-tender portal and Transnet website.</p>
VALIDITY PERIOD	<p>12 weeks from Closing Date</p> <p>Bidders are to note that they may be requested to extend the validity period of their bid, at the same terms and conditions, if the internal evaluation process has not been finalised within the validity period. However, once the adjudication body has approved the process and award of the business to the successful bidder(s), the validity of the successful bidder(s)' bid will be deemed to remain valid until a final contract has been concluded.</p>

2. TENDER SUBMISSION

Transnet has implemented a new electronic tender submission system, the e-Tender Submission Portal, in line with the overall Transnet digitalization strategy where suppliers can view advertised tenders, register their information, log their intent to respond to bids and upload their bid proposals/responses on to the system.

a) The Transnet e-Tender Submission Portal can be accessed as follows:

Log on to the Transnet e-Tenders management platform website (<https://transnetetenders.azurewebsites.net>);

- Click on "ADVERTISED TENDERS" to view advertised tenders;
- Click on "SIGN IN/REGISTER – for bidder to register their information (must fill in all mandatory information);
- Click on "SIGN IN/REGISTER" - to sign in if already registered;
- Toggle (click to switch) the "Log an Intent" button to submit a bid;
- Submit bid documents by uploading them into the system against each tender selected.
- **Tenderers are required to ensure that electronic bid submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Transnet will not be held liable for any challenges experienced by bidders as a result of the technical challenges. Please do not wait for the last hour to submit. A Tenderer can upload 30mb per upload and multiple uploads are permitted.**

b) The tender offers to this tender will be opened as soon as possible after the closing date and time. Transnet shall not, at the opening of tenders, disclose to any other company any confidential details pertaining to the Tender Offers / information received, i.e. pricing, delivery, etc. The names and locations of the Tenderers will be divulged to other Tenderers upon request.

c) Submissions must not contain documents relating to any Tender other than that shown on the submission.

3. CONFIDENTIALITY

All information related to this RFP is to be treated with strict confidentiality. In this regard Tenderers are required to certify that they have acquainted themselves with the Non-Disclosure Agreement. All information related to a subsequent contract, both during and after completion thereof, will be treated with strict confidence. Should the need however arise to divulge any information gleaned from provision of the Works, which is either directly or indirectly related to Transnet's business, written approval to divulge such information must be obtained from Transnet.

4. DISCLAIMERS

Tenderers are hereby advised that Transnet is not committed to any course of action as a result of its issuance of this Tender and/or its receipt of a tender offer. In particular, please note that Transnet reserves the right to:

- 4.1. Award the business to the highest scoring Tenderer/s unless objective criteria justify the award to another tenderer.
- 4.2. Not necessarily accept the lowest priced tender or an alternative Tender;
- 4.3. Go to the open market if the quoted rates (for award of work) are deemed unreasonable;
- 4.4. Should the Tenderers be awarded business on strength of information furnished by the Tenderer, which after conclusion of the contract is proved to have been incorrect, Transnet reserves the right to terminate the contract;
- 4.5. Request audited financial statements or other documentation for the purposes of a due diligence exercise;
- 4.6. Not accept any changes or purported changes by the Tenderer to the tender rates after the closing date;
- 4.7. Verify any information supplied by a Tenderer by submitting a tender, the Tenderer/s hereby irrevocably grant the necessary consent to the Transnet to do so;
- 4.8. Conduct the evaluation process in parallel. The evaluation of Tenderers at any given stage must therefore not be interpreted to mean that Tenderers have necessarily passed any previous stage(s);

- 4.9. Unless otherwise expressly stated, each tender lodged in response to the invitation to tender shall be deemed to be an offer by the Tenderer. The Employer has the right in its sole and unfettered discretion not to accept any offer.
- 4.10. Not be held liable if tenderers do not provide the correct contact details during the clarification session and do not receive the latest information regarding this RFP with the possible consequence of being disadvantaged or disqualified as a result thereof.
- 4.11. Transnet reserves the right to exclude any Tenderers from the tender process who has been convicted of a serious breach of law during the preceding 5 [five] years including but not limited to breaches of the Competition Act 89 of 1998, as amended. Tenderers are required to indicate in tender returnable [clause 12 on T2.2-22], [**Breach of Law**] whether or not they have been found guilty of a serious breach of law during the past 5 [five] years.
- 4.12. Transnet reserves the right to perform a risk analysis on the preferred tenderer to ascertain if any of the following might present an unacceptable commercial risk to the employer:
- *unduly high or unduly low tendered rates or amounts in the tender offer;*
 - *contract data of contract provided by the tenderer; or*
 - *the contents of the tender returnables which are to be included in the contract.*
5. Transnet will not reimburse any Tenderer for any preparatory costs or other work performed in connection with this Tender, whether or not the Tenderer is awarded a contract.

6. NATIONAL TREASURY'S CENTRAL SUPPLIER DATABASE

Tenderer are required to self-register on National Treasury's Central Supplier Database (CSD) which has been established to centrally administer supplier information for all organs of state and facilitate the verification of certain key supplier information. The CSD can be accessed at <https://secure.csd.gov.za/>. Tenderer are required to provide the following to Transnet in order to enable it to verify information on the CSD:

Supplier Number..... and Unique registration reference number.....(**Tender Data**)

Transnet urges its clients, suppliers and the general public

to report any fraud or corruption to

TIP-OFFS ANONYMOUS: 0800 003 056 OR Transnet@tip-offs.com

T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts. The Standard for Uniformity in Construction Procurement was first published in Board Notice 62 of 2004 in Government Gazette No 26427 of 9 June 2004. It was subsequently amended in Board Notice 67 of 2005 in Government Gazette No 28127 of 14 October 2005, Board Notice 93 of 2006 in Government Gazette No 29138 of 18 August 2006, Board Notice No 9 of 2008 in Government Gazette No 31823 of 30 January 2009, Board Notice 86 of 2010 in Government Gazette No 33239 of 28 May 2010, Board Notice 136 of 2015 in Government Gazette 38960 of 10 July 2015 and Board Notice 423 of 2019 in Government Gazette No 42622 of 8 August 2019.

This edition incorporates the amendments made in Board Notice 423 of 2019 in Government Gazette 42622 of 8 August 2019. (see www.cidb.org.za).

The Standard Conditions of Tender make several references to Tender data for detail that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced in the left-hand column to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause	Data
C.1.1 The <i>Employer</i> is	Transnet SOC Ltd (Reg No. 1990/000900/30)
C.1.2 The tender documents issued by the <i>Employer</i> comprise:	
Part T: The Tender	
Part T1: Tendering procedures	T1.1 Tender notice and invitation to tender T1.2 Tender data
Part T2: Returnable documents	T2.1 List of returnable documents T2.2 Returnable schedules
Part C: The contract	
Part C1: Agreements and contract data	C1.1 Form of offer and acceptance C1.2 Contract data (Part 1 & 2) C1.3 Form of Securities
Part C2: Pricing data	C2.1 Pricing instructions

		C2.2 Activity Schedule
Part C3: Scope of work		C3.1 Works Information
Part C4: Site information		C4.1 Site information
C.1.4	The Employer's agent is:	Procurement Officer
	Name:	Bhatisani Widzani
	Address:	eMendi Building Port of Ngqurha Port Elizabeth 6001
	Tel No.	063 251 8721
	E – mail	Bhatisani.Widzani@transnet.net
C.2.1	Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:	
	1. Stage One - Eligibility with regards to attendance at the compulsory clarification meeting: An authorised representative of the tendering entity or a representative of a tendering entity that intends to form a Joint Venture (JV) must attend the compulsory clarification meeting in terms C2.7 <i>Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.</i> Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:	
	2. Stage Two – Pre-qualification criteria for CIDB Grading Designation: (a) Only those tenderers who are registered with the CIDB or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to 6CE or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a 5CE or higher class of construction work, are eligible to have their tenders evaluated. (b) Joint Venture (JV) Joint ventures are eligible to submit tenders subject to the following: <ul style="list-style-type: none"> every member of the joint venture is registered with the CIDB; 	

- the lead partner has a contractor grading designation of **4CE** class of construction work; and
- the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a **5CE** or higher class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations

The tenderer shall provide a certified copy of its signed joint venture agreement.

Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.

3. Stage Three - Pre-qualification criteria for preferential procurement in terms of the Preferential Procurement Regulations, 2017:

- a) A tenderer having a stipulated minimum B-BBEE status level of contributor of 2.

Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.

4. Stage Four - Pre-qualification criteria for preferential procurement in terms of the Preferential Procurement Regulations, 2017:

- a) Only EME's or QSE's are eligible to submit a tender offer.

Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.

5. Stage Five - Functionality:

Only those tenderers who obtain the minimum qualifying score for functionality will be evaluated further in terms of price and the applicable preference point system. The minimum qualifying score for functionality is 60 points.

The evaluation criteria for measuring functionality and the points for each criteria and, if any, each sub-criterion are as stated in C.3.11.3 below.

Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.

C.2.7 The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. **Tenderers must complete and sign the attendance register.** Addenda will be issued to and tenders will only be received from those tendering entities including those entities that intends forming a joint venture appearing on the attendance register.

Tenderers are also **required to bring their RFP document to the briefing session and have their returnable document T2.2-01 certificate of attendance** signed off by the Employer's authorised representative.

C.2.12 No alternative tender offers will be considered.

C.2.13.3 Each tender offer shall be in the **English Language**.

C.2.13.5 The *Employer's* details and identification details that are to be shown on each tender offer are as follows:

Identification details:

The tender documents must be uploaded with:

- **Name of Tenderer:**
.....(insert company name)
- **Contact person and details:**
.....(insert details)
- **The Tender Number:**
TNPA/2022/08/0868/9744/RFP
- **The Tender Description:** APPOINTMENT OF A
SERVICE PROVIDER TO DESIGN AND BUILD
ADDITIONAL PARKING BAYS AT EMENDI
ADMINISTRATION BUILDING, PORT OF NGQURA
FOR A PERIOD OF FIVE (5) MONTHS.

Documents must be marked for the attention of:

Employer's Agent: Bhatiani Widzani

C.2.13.9 Telephonic, telegraphic, facsimile or e-mailed tender offers will not be accepted.

C.2.15 The closing time for submission of tender offers is:

Time: **16:00** on the **03 November 2022**

Location: The Transnet e-Tender Submission Portal:

(<https://transnetetenders.azurewebsites.net>);

NO LATE TENDERS WILL BE ACCEPTED

C.2.16 The tender offer validity period is **12 weeks** after the closing date. Tenderers are to note that they may be requested to extend the validity period of their tender, on the same terms and conditions, if Transnet's internal evaluation and governance approval processes has not been finalised within the validity period.

C.2.23 The tenderer is required to submit with his tender:

1. A valid Tax Clearance Certificate issued by the South African Revenue Services.
Tenderers also to provide Transnet with a TCS PIN to verify Tenderers compliance status.
2. A **valid B-BBEE Certificate** from a Verification Agency accredited by the South African Accreditation System [**SANAS**], or a **sworn affidavit** confirming annual turnover and level of black ownership in case of all EMEs and QSEs with 51% black ownership or more together with the tender;
3. A valid CIDB certificate in the correct designated grading;
4. Proof of registration on the Central Supplier Database;
5. Letter of Good Standing with the Workmen's compensation fund by the tendering entity or separate Letters of Good Standing from all members of a newly constituted JV.

Note: Refer to Section T2.1 for List of Returnable Documents

C3.11 The minimum number of evaluation points for functionality is: **60**

The procedure for the evaluation of responsive tenders is Functionality, Price and Preference:

Only those tenderers who attain the minimum number of evaluation points for Functionality will be eligible for further evaluation, failure to meet the minimum threshold will result in the tender being disqualified and removed from any further consideration.

Functionality Criteria

The functionality criteria and maximum score in respect of each of the criteria are as follows:

Part 1: Tendering Procedures

T1.2: Tender Data

Functionality shall be scored independently by not less than 3 (three) evaluators and averaged in accordance with the following schedules:

- T2.2-05: Previous Experience
- T2.2-06: CVs of Key Persons
- T2.2-07: Approach Paper or Methodology or Method Statement
- T2.2-08: Work Plan or Schedule or Programme
- T2.2-09: Quality Management
- T2.2-10: Environmental Management
- T2.2-11: Health and Safety Requirements

Each evaluation criteria will be assessed in terms of scores of 0, 20, 40, 60, 80 or 100 (linear scale, more suitable for NEC3, ECC (construction related procurement)).

The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for functionality, unless scored collectively. (See CIDB Inform Practice Note #9).

Note: Any tender not complying with the above-mentioned requirements, will be regarded as non-responsive and will therefore not be considered for further evaluation. This note must be read in conjunction with Clause C.2.1.

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- C.3.11. Only tenders that achieve the minimum qualifying score for functionality will be evaluated further in accordance with the 80/20 preference points systems as described in Preferential Procurement Regulations 6 and 7.

80 where the financial value of one or more responsive tenders received have a value equal to or below R50 million, inclusive of all applicable taxes.

Up to 100 minus W_1 tender evaluation points will be awarded to tenderers who complete the preferencing schedule and who are found to be eligible for the preference claimed. **Should the B-BBEE rating not be provided, tenderers with no verification will score zero points for preferencing.**

Note: Transnet reserves the right to carry out an independent audit of the tenderers scorecard components at any stage from the date of close of the tenders until completion of the contract.

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- C.3.13 Tender offers will only be accepted if:

1. The tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt

Activities Act of 2004 as a person prohibited from doing business with the public sector;

2. the tenderer does not appear on Transnet's list for restricted tenderers and National Treasury's list of Tender Defaulters;
3. the tenderer has fully and properly completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state.
4. Transnet reserves the right to award the tender to the tenderer who scores the highest number of points overall, unless there are **objective criteria** which will justify the award of the tender to another tenderer. Objective criteria include but are not limited to the outcome of a due diligence exercise to be conducted. The due diligence exercise may take the following factors into account inter alia; the tenderer:
 - a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
 - b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
 - c) has the legal capacity to enter into the contract,
 - d) is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
 - e) complies with the legal requirements, if any, stated in the tender data and
 - f) is able, in the option of the employer to perform the contract free of conflicts of interest.

C.3.17 The number of paper copies of the signed contract to be provided by the Employer is 1 (one).

T2.1 List of Returnable Documents

2.1.1 These schedules are required for pre-qualification and eligibility purposes:

- T2.2-01 **Stage One as per CIDB: Eligibility Criteria Schedule** - Certificate of attendance at Compulsory Tender Clarification Meeting
- T2.2-02 **Stage Two as per CIDB: Eligibility Criteria Schedule** - CIDB Registration
- T2.2-03 **Stage Three as per Pre-qualification criteria for preferential procurement in terms of the Preferential Procurement Regulations, 2017:**
 - a) A tenderer having a stipulated minimum B-BBEE status level of contributor of 2
- T2.2-04 **Stage Three as per Pre-qualification criteria for preferential procurement in terms of the Preferential Procurement Regulations, 2017:**
 - a) Only EME's or QSE's are eligible to submit a tender offer

2.1.2 Stage Five as per CIDB: these schedules will be utilised for evaluation purposes:

- T2.2-05 **Evaluation Schedule:** Previous experience
- T2.2-06 **Evaluation Schedule:** Management & CV's
- T2.2-07 **Evaluation Schedule:** Proposed Approach/ Methodology/Method Statement
- T2.2-08 **Evaluation Schedule:** Work Plan or Schedule or Programme
- T2.2-09 **Evaluation Schedule:** Quality Management
- T2.2-10 **Evaluation Schedule:** Environmental Management
- T2.2-11 **Evaluation Schedule:** Health and Safety Management

2.1.3 Returnable Schedules:

General:

- T2.2-12 Authority to submit tender
- T2.2-13 Record of addenda to tender documents
- T2.2-14 Letter of Good Standing
- T2.2-15 Risk Elements
- T2.2-16 Availability of equipment and other resources
- T2.2-17 Site Establishment requirements
- T2.2-18 RFP Clarification Request Form

2.1.4 Agreement and Commitment by Tenderer:

- T2.2-19: CIDB SFU ANNEX G Compulsory Enterprise Questionnaire
- T2.2-20 Non-Disclosure Agreement
- T2.2-21 RFP Declaration Form
- T2.2-22 RFP – Breach of Law
- T2.2-23 Certificate of Acquaintance with Tender Document
- T2.2-24 Service Provider Integrity Pact
- T2.2-25 Supplier Code of Conduct
- T2.2-26 POPIA

2.1.5 Bonds/Guarantees/Financial/Insurance:

- T2.2-27 Insurance provided by the Contractor
- T2.2-28 Form of Intent to provide a Performance Guarantee
- T2.2-29 Three (3) years audited financial statements

2.2 C1.1 Offer portion of Form of Offer & Acceptance

2.3 C1.2 Contract Data

2.4 C1.3 Forms of Securities

2.5 C2.1 Pricing Instructions (Activity Schedule)

2.6 C2.2 Activity Schedule

T2.2-01: Eligibility Criteria Schedule:

Certificate of Attendance at Tender Clarification Meeting

This is to certify that

(Company Name)

Represented
by:

(Name and
Surname)

Was represented at the compulsory tender clarification meeting

Held at:		
On (date)		Starting time:

Particulars of person(s) attending the meeting:

Name

Signature

Capacity

Attendance of the above company at the meeting was confirmed:

Name

Signature

**For and on Behalf of the
Employers Agent.**

Date

T2.2-02: Eligibility Criteria Schedule - CIDB Grading Designation

Note to tenderers:

Tenderers are to indicate their CIDB Grading by filling in the table below. **Attach a copy of the CIDB Grading Designation or evidence of being capable of being so registered.**

CRS Number	Status	Grading	Expiry Date

- Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a **5CE** class of construction work, are eligible to have their tenders evaluated.

2. Joint Venture (JV)

Joint ventures are eligible to submit tenders subject to the following:

- every member of the joint venture is registered with the CIDB;
- the lead partner has a contractor grading designation of not lower than one level one level below the required grading designation in the class of construction works under consideration and possesses the required recognition status; and
- the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a **4CE** class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations
- the Contractor shall provide the employer with a certified copy of its signed joint venture agreement;
- and in the event that the joint venture is an 'Incorporated Joint Venture' the Memorandum of Incorporation to be provided within 4 (four) weeks of the Contract Date.

T2.2-03 ELIGIBILITY CRITERIA SCHEDULE: B-BBEE STATUS LEVEL

In an endeavour to grow and develop Black Owned (BO) companies as well as to ensure that Transnet meets its Shareholder Compact Objectives, Potential Tenderers are required to meet the eligibility criteria of B-BBEE Status Level/EME or QSE/Sub-contracting.

It is a specific tendering condition that tenderers must:

- Have a minimum B-BBEE status level of 2

Tenderers are required to submit the **valid B-BBEE certificates or Sworn Affidavits** of the Sub-contractors Company/ies together with the Tender submission should they have proposed sub-contractors.

Tenderer to note that any deviations from this list of proposed sub-contractors will be subject to acceptance by the *Employer's Agent* in terms of the Conditions of Contract. Please also read the applicable Z Clauses in the Contract Data by Employer.

Provide information of the Sub-contractors below:

	Name of proposed Sub-contractors	Proposed Sub-consultant: National Treasury Central Supplier Database Registration Number	Nature and extent of work	B-BBEE Certificates or Sworn Affidavit attached to this schedule? Yes/No	Amount of work sub-consulted in Rands (excl. 15% Vat)	Percentage (%) of the sub-consulted amount in terms of the tendered total of the prices.
1.						
2.						
3.						
4.						
5.						

6.						
7.						

The Tenderer is to submit the following documents or copies thereof for each of the proposed sub-contractor(s) with this schedule:

- Valid B-BBEE Sworn Affidavits or B-BBEE Certificates of each of the proposed sub-contractors.

NOTE TO TENDERERS: FAILURE TO PROVIDE THE ABOVE DOCUMENTS WILL RESULT IN THE NOMINATED SUB-CONTRACTOR 'S PERCENTAGE BEING DISCOUNTED TO ZERO.

Transnet reserves the right to request additional information of the nominated sub-contractors should it be deemed necessary to verify the compliance to the black ownership percentage or sub-contractor's entity size. These may include but not limited to;

- Agreement or Letter of Intent confirming the Sub-Contracting Agreement between the tenderer and proposed sub-contractor(s);
- Copies of the identity documents of the members of shareholders of the sub-contractor;
- Copies of the Audited Financial Statements or Income Statement of the sub-contractor.

T2.2-03 ELIGIBILITY CRITERIA SCHEDULE: EME OR QSE

In an endeavour to grow and develop Black Owned (BO) companies as well as to ensure that Transnet meets its Shareholder Compact Objectives, Potential Tenderers are required to meet the eligibility criteria of B-BBEE Status Level/EME or QSE/Sub-contracting.

It is a specific tendering condition that tenderers must:

- Are an EME or QSE.

Tenderers are required to submit the **valid B-BBEE certificates or Sworn Affidavits** of the Sub-contractors Company/ies together with the Tender submission should they have proposed sub-contractors.

Tenderer to note that any deviations from this list of proposed sub-contractors will be subject to acceptance by the *Employer's Agent* in terms of the Conditions of Contract. Please also read the applicable Z Clauses in the Contract Data by Employer.

Provide information of the Sub-contractors below:

	Name of proposed Sub-contractors	Proposed Sub-consultant: National Treasury Central Supplier Database Registration Number	Nature and extent of work	B-BBEE Certificates or Sworn Affidavit attached to this schedule? Yes/No	Amount of work sub-consulted in Rands (excl. 15% Vat)	Percentage (%) of the sub-consulted amount in terms of the tendered total of the prices.
1.						
2.						
3.						
4.						
5.						

6.						
7.						

The Tenderer is to submit the following documents or copies thereof for each of the proposed sub-contractor(s) with this schedule:

- Valid B-BBEE Sworn Affidavits or B-BBEE Certificates of each of the proposed sub-contractors.

NOTE TO TENDERERS: FAILURE TO PROVIDE THE ABOVE DOCUMENTS WILL RESULT IN THE NOMINATED SUB-CONTRACTOR 'S PERCENTAGE BEING DISCOUNTED TO ZERO.

Transnet reserves the right to request additional information of the nominated sub-contractors should it be deemed necessary to verify the compliance to the black ownership percentage or sub-contractor's entity size. These may include but not limited to;

- Agreement or Letter of Intent confirming the Sub-Contracting Agreement between the tenderer and proposed sub-contractor(s);
- Copies of the identity documents of the members of shareholders of the sub-contractor;
- Copies of the Audited Financial Statements or Income Statement of the sub-contractor.

T2.2-05: Evaluation Schedule: Previous Experience (15 points)

Experience Variety and Variability of Infrastructure Types of Projects as in the Scope of Service (10 points):

Tenderers to submit detailed portfolio of similar projects demonstrating competency in the Key area of specialty as mentioned in the scope of service for:

- Design
- Site Supervision
- Construction
- Material Testing
- Hand-over and Close-out

This will be assessed as a number of services counted as per the key area/s mentioned.

1. Parking Areas, Roads and Highways
2. Pavement and Materials
3. Hydraulics and Hydrology (Stormwater Drainage)
4. Bulk Earthworks
5. Traffic and Transportation

Score 0	No response
Score 20	Information is not related or Covers 1 service
Score 40	Poor (Covers 2 services)
Score 60	Satisfactory (Covers 3 services)
Score 80	Good (Covers 4 services)
Score 100	Excellent (Covers All 5 or more services)

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PERIOD OF FIVE (5) MONTHS

References from Clients (or Clients' Representative/s) of Previously Completed Similar Projects (i.e. for Design and Site Supervision (3 points):

Written References to be submitted from clients (or Clients' Representative/s) of previously completed similar projects, the submitted reference letters must have client's letter head, contactable number(s) and person(s).

The portfolio of completed work must comprise of a formal written appraisal of the tenderer's performance on the project in a Client's letter head confirming the implementation, sites where previous similar work/projects were implemented.

Score 0	No response
Score 20	1 reference letter submitted
Score 40	2 reference letters submitted
Score 60	3 reference letters submitted
Score 80	4 reference letters submitted
Score 100	5 or more reference letters submitted

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References from Clients (or Clients' Representative/s) of Previously Completed Similar Projects (i.e. for Construction (2 points)):

Written References to be submitted from clients (or Clients' Representative/s) of previously completed similar projects, the submitted reference letters must have client's letter head, contactable number(s) and person(s).

The portfolio of completed work must comprise of a formal written appraisal of the tenderer's performance on the project in a Client's letter head confirming the implementation, sites where previous similar work/projects were implemented.

Score 0	No response
Score 20	1 reference letter submitted
Score 40	2 reference letters submitted
Score 60	3 reference letters submitted
Score 80	4 reference letters submitted
Score 100	5 or more reference letters submitted



T2.2-06: Evaluation Schedule: Management & CVs of Key Persons (30 points)

The tenderer must be able to demonstrate that the project personnel have sufficient knowledge, experience and qualifications to provide the required service.

Submit the following documents as a minimum with your tender document:

1. Organizational structure to include a clear indication of roles and responsibilities and specific function of each team member.
2. The experience of assigned key persons in relation to the scope of work will be evaluated from two different points of view, namely:
 - a. Relevant experience.
 - b. The education, training, and skills. (Proof of education and training must be attached. Copies of all qualifications must be certified by a Commissioner of Oaths)
 - c. Key personnel should include at least, amongst others but not limited to:
 - Project Manager/Civil Engineering Lead (Pr. Eng. Civil/Pr. Tech Civil).
 - Site Agent/ Construction Manager (registered with SACPCMP as a CM).
 - Pr. Eng. Electrical/Pr. Tech. Electrical.
 - Electrician
 - Health and Safety Officer
 - Environmental Officer

No.	Key Persons	Name and Surname	CV attached (Yes/No)	Registered (Yes/No)
1	Project Manager / Civil Eng. Lead (Pr.Eng Civil / Pr.Tech Civil)			
2	Site Agent / Construction Manager (registered with SACPCMP as a CM)			
3	Pr.Eng Electrical / Pr.Tech Electrical			
4	Electrician			
5	Health and Safety Officer			
6	Environmental Officer			

Note: CV's and profiles should show experience, background and track record in similar types of projects



The table below will be used as guidelines for scoring / evaluating the management and CVs of key persons submitted by the Tenderer:

	Project Manger / Civil Eng. Lead (Pr.Eng Civil / Pr.Tech Civil)	Site Agent / Construction Manager	Pr.Eng Electrical / Pr.Tech Electrical	Electrician	SHE Officer	Environmental Officer
Criteria	<p>5</p> <p>Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder, proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV.</p> <p>Project Manager/Civil Engineering Lead: Civil Engineer or Technologist: 10 Years Experience in relevant infrastructure projects, construction of urban roads with relevent qualification and Professional Registration (Pr.Eng/Pr.Tech.)</p>	<p>5</p> <p>Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder, proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV.</p> <p>Site Agent: minimum (S4) National Diploma in Civil Engineering or equivalent qualification with 10 Years experience in relevant infrastructure projects, construction of urban roads and Civil Engineering. (registered with SACPCMP as a CM)</p>	<p>5</p> <p>Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder, proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV.</p> <p>Electrical Engineer Pr Eng or Pr Tech ECSA registration with 10 years in similar projects.</p>	<p>5</p> <p>Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder, proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV.</p> <p>Registered Electrician with Wireman's Licence and with 5 years experience</p>	<p>5</p> <p>Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder, proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV.</p> <p>SACPCMP registered Health & Safety Officer with Five (5) years experience</p>	<p>5</p> <p>Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder, proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV.</p> <p>Environmental Officer: minimum (S4) National Diploma in Environmental Management or equivalent qualification with 5 Years Experience in relevant infrastructure projects.</p>

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Score 0	No Pr.Eng Civil/Pr.Eng Tech / no response	No minimum qualification / no response	No Pr.Eng Electrical/Pr.Eng Tech / no response	No wireman licence / no response	Not registered with SACPCMP/no response	No response or adequate experience
Score 20	Pr.Eng Civil/Pr.Eng Tech with less than 5 years experience in relevant infrastructure projects 0 = No Pr.Eng Civil/Pr.Eng Tech / no response	Min qualification with less than 5 years experience in relevant infrastructure projects. No proof of SACPCMP registered.	Pr.Eng Electrical/Pr.Eng Tech with less than 5 years experience in relevant similar projects	Registered Electrician with less than 1 year experience in relevant similar projects	Registered with SACPCMP with less than 1 year experience in relevant similar projects	Environmental officer with 1 year relevant experience
Score 40	Pr.Eng Civil/Pr.Eng Tech with 5 to 6 years experience in relevant infrastructure projects	Min qualification with 5 to 6 years experience in relevant infrastructure projects. No proof of SACPCMP registered.	Pr.Eng Electrical/Pr.Eng Tech with 5 to 6 years experience in relevant similar projects	Registered Electrician with 1 to 2 years experience in relevant similar projects	Registered with SACPCMP with 1 to 2 years experience in relevant similar projects	Environmental officer with 2 years' relevant experience
Score 60	Pr.Eng Civil/Pr.Eng Tech with 7 to 8 years experience in relevant infrastructure projects	Min qualification with 7 to 8 years experience in relevant infrastructure projects. Registration with SACPCMP.	Pr.Eng Electrical/Pr.Eng Tech with 7 to 8 years experience in relevant similar projects	Registered Electrician with 3 years experience in relevant similar projects	Registered with SACPCMP with 3 years experience in relevant similar projects	Environmental officer with has between 3 years' relevant experience
Score 80	Pr.Eng Civil/Pr.Eng Tech with 9 to 10 years experience in relevant infrastructure projects	Min qualification with 9 to 10 years experience in relevant infrastructure projects. Registration with SACPCMP.	Pr.Eng Electrical/Pr.Eng Tech with 9 to 10 years experience in relevant similar projects	Registered Electrician with 4 years experience in relevant similar projects	Registered with SACPCMP with 4 years experience in relevant similar projects	Environmental officer with has between 4 years' relevant experience
Score 100	Pr.Eng Civil/Pr.Eng Tech with equal or greater than 10 years experience in relevant infrastructure projects	Min qualification with equal or greater than 10 years experience in relevant infrastructure projects. Registration with SACPCMP.	Pr.Eng Electrical/Pr.Eng Tech with equal or greater than 10 years experience in relevant similar projects	Registered Electrician with equal or greater than 5 years experience in relevant similar projects	Registered with SACPCMP with equal or greater than 5 years experience in relevant similar projects	Environmental officer with 5 years' or more relevant experience

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T2.2-07: Evaluation Schedule – Method Statement (20 points)

Proposed Approach/ Methodology/Method Statement: Tenderers exhibit a clear understanding of the Project and has shown correct sequencing with a concise method statement for all activities incorporating best practices.

The Tenderer must submit a detailed Work methodology for the resourcing and execution of the technical work.

Furthermore, the Tenderer must provide a detailed Civil Engineering Work methodology procedure covering the below items:

1. Contract Details - Details of the nature of the Civil Engineering services that is to be undertaken.
2. Method of Work - A description of how the works are to be carried out in relation to the design stages, scope, drawing deliverables at each stage, site conditions and site-specific hazards and considerations.
3. Risk Assessments - The inclusion of any risk assessments, project specific health and safety issues which will assist in the identification and management of task specific hazards.
4. Operative Competence - Skills available, including certification, accreditation and training.
5. Monitoring and review - Details of how the scope of the works will be monitored supervised and evaluated.
6. Implementation Methodology is aligned to project scope.
7. Methodology shows execution, handover and close-out stages.
8. Foreseeable construction-related risks are identified on method statement.
9. All stakeholders have been identified.



Score 0	No response (or None of the items covered)
Score 20	Information is not related (Covers 1 - 2 items)
Score 40	Poor Procedure (Covers 3 - 4 items)
Score 60	Satisfactory Procedure (Covers 5 - 6 items)
Score 80	Good Procedure (Covers 7- 8 items)
Score 100	Excellent Procedure (Covers all 9 items)



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T2.2-08: Evaluation Schedule: Programme (10 points)

Work Plan or Schedule or Programme:

- Submission of work organization programme and schedule listing.

Tenderers should propose the main activities for the implementation of the project indicating/describing their contents, durations, major resources utilised (personnel, plant & equipment) and critical path milestones demonstrating that the project can be delivered within a period of 5 months:

- Detailed schedule with key activities and compatible to the Price Schedule;
- Listing all construction activities (including not limited to subcontracted works; procurement activities, time risk allowance and indicate ordering of long lead items);
- All activities should be linked with no open end tasks, Critical Path Method to be used;
- The programme must show that the work will be executed within 5 months period;
- Use one unit of measure (days, weeks);
- Column to be shown, start, finish, duration, float; and
- The program to be submitted on Microsoft Project or Primavera software (can be attached as PDF).

The table below indicate the method of scoring that will be followed to evaluate the programme submitted by the Tenderer:

Score 0	Two or less aspects submitted, tenderer has not submitted the required information/ cannot be rated
Score 20	Three aspects of the work plan have been covered within 5 months
Score 40	Four aspects of the work plan have been covered within 5 months
Score 60	Five aspects of the work plan have been covered within 5 months
Score 80	Six aspects of the work plan have been covered within 5 months
Score 100	Seven aspects of the work plan have been covered within 5 months



T2.2-09: Quality Management (10 points)

Quality Management and inspection tests.

Tenderer has indicated all of the following:

1. Quality Assurance Officer with ISO 9001:2015 quality understanding and implementation certificate and 3 years experience as a quality officer in urban roads construction projects.
2. Project Quality Plan specific to the works.
3. QMS Accreditation (e.g. ISO 9001:2015 certificate of the company) or a QMS manual index of tenderer.
4. Quality data pack index.
5. Project specific Quality Control Plan showing all tests and inspections.

Score 0	Tenderer has not submitted the required information/ cannot be rated
Score 20	One aspect of the quality management plan have been covered
Score 40	Two aspects of the quality management plan have been covered
Score 60	Three aspects of the quality management plan have been covered (number 1, 2 and 5).
Score 80	Four aspects of the quality management plan have been covered (number 1, 2 and 5).
Score 100	All five and more aspects of the quality management plan have been covered



T2.2-10: Evaluation Schedule: Environmental Management (5 points)

Environmental Compliance

1. The tenderer must provide their environmental management policy, detailing their commitment to the protection of the environment.
2. The tenderer must explain their internal environmental management system (EMS) approach and attach the EMS manual/guidance document, as part of the overall quality management system. In accordance with section 6.2 of the Construction Environmental Management Plan (CEMP), refer to Annexure B.
3. The tenderer must submit a Project Environmental Management Plan (EMP). The EMP must comply with the requirements of section 6.2 of the CEMP and must demonstrate how the tenderer will ensure that the requirements of the CEMP are implemented.
4. The tenderer must demonstrate the required level of expertise and experience for the overall management of the construction environmental management process. A minimum of three examples of construction projects within environmentally sensitive areas must be provided with a brief synopsis of the environmental management measures implemented and the success of these measures.
5. The tenderer is to sign the declaration of understanding (refer to Annexure B) acknowledging understanding thereof and the budget provision for the implementation of environmental management requirements.

Score 0	Tenderer has not submitted the required information/ cannot be rated
Score 20	One aspect/s of the environmental management criteria have been covered
Score 40	Two aspects of the environmental management criteria have been covered (including no.5 and 4)
Score 60	Three aspects of the environmental management criteria have been covered (including no.5, 4 and 1)
Score 80	Four aspects of the environmental management criteria have been covered (including no.5, 4, 1 and 3)
Score 100	All Five aspects or more of the environmental management criteria have been covered

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T2.2-11: Compliance to Health and Safety (10 points)

Tenderer to submit required documents or required information to ensure SHE compliance in terms of scope of work.

Tenderer must demonstrate full understanding of the Client's health and safety specification by presenting a detailed health and safety management plan specific to the project.

1. The Tenderer must provide their Contract specific health and safety plan addressing the requirements of Transnet health and safety specification and include the following documents:
 - Health and Safety Company Policy signed by the accounting officer. List the five elements -
 - (a) Commitment to Safety, prevention of pollution,
 - (b) Continual improvement,
 - (c) Compliance to legal requirements, appropriate to the nature of contractor's activities,
 - (d) Hold management accountable for development of the safety systems; and
 - (e) Include objectives and targets.
2. Roles and responsibilities of legal appointees:
 - a) in terms of OHSA 85 of 1993 and its Regulations
 - I. OHS Act, Section 16.2 appointee,
 - II. CR8.7 Construction Supervisor,
 - III. CR 8(2) Assistant Construction Manager,
 - IV. CR9.1 Risk Assessor
 - V. GSR 3(4) First aider (level 3)
 - b) in terms of Construction Regulations, 2014
 - I. CR8.5 Health and Safety Officer (CV and proof of SACPCMP registration)
 - c) in terms of project and Construction Management Professional Act 48 of 2000
 - I. Construction Manager CV and proof of registration with SACPCMP
3. List of key responsible persons (job categories) for project and health and safety competencies required per category
4. Overview of the tenderer's Risk Assessment methodology, and submission of risk assessments indicating major activities of the project and include reference to COVID 19 requirements and mitigations.
5. Two years synopsis of Health and Safety incidents, description, type and action taken to prevent re-occurrence.
6. Submission of completed health and safety cost breakdown sheet

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-
7. Complete and return with tender documentation the tenderer Health and Safety Questionnaire (refer to Annexure L of the tender document) with supporting documentation included as an Annexure.

Score 0	No response (or None of the items covered)
Score 20	Information is not related (Covers 1 item)
Score 40	Poor Procedure (Covers 2 items)
Score 60	Satisfactory Procedure (Covers 3 - 4 items)
Score 80	Good Procedure (Covers 5 - 6 items)
Score 100	Excellent Procedure (Covers all 7 items)

T2.2-12: Authority to submit a Tender

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for his category of organisation or alternatively attach a certified copy of a company / organisation document which provides the same information for the relevant category as requested here.

A - COMPANY	B - PARTNERSHIP	C - JOINT VENTURE	D - SOLE PROPRIETOR

A. Certificate for Company

I, _____ chairperson of the board of directors _____
_____, hereby confirm that by resolution of the
board taken on _____ (date), Mr/Ms _____,
acting in the capacity of _____, was authorised to sign all
documents in connection with this tender offer and any contract resulting from it on behalf of
the company.

Signed

Date

Name

Position

Chairman of the Board of Directors

B. Certificate for Partnership

We, the undersigned, being the **key partners** in the business trading as _____

_____ hereby authorise Mr/Ms _____

acting in the capacity of _____, to sign all documents in

connection with the tender offer for Contract _____ and any

contract resulting from it on our behalf.

Name	Address	Signature	Date

NOTE: This certificate is to be completed and signed by the full number of Partners necessary to commit the Partnership. Attach additional pages if more space is required.

C. Certificate for Joint Venture

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms _____, an authorised signatory of the company _____, acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract _____ and any contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

Furthermore we attach to this Schedule a copy of the joint venture agreement which incorporates a statement that all partners are liable jointly and severally for the execution of the contract and that the lead partner is authorised to incur liabilities, receive instructions and payments and be responsible for the entire execution of the contract for and on behalf of any and all the partners.

Name of firm	Address	Authorising signature, name (in caps) and capacity

D. Certificate for Sole Proprietor

I, _____, hereby confirm that I am the sole owner of the
business trading as _____.

Signed

Date

Name

Position

Sole Proprietor

T2.2-13: Record of Addenda to Tender Documents

This schedule as submitted confirms that the following communications received from the *Employer* before the submission of this tender offer, amending the tender documents, have been taken into account in this specific tender offer:

	Date	Title or Details
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Attach additional pages if more space is required.

T2.2-14 Letter/s of Good Standing with the Workmen's Compensation Fund

Attached to this schedule is the Letter/s of Good Standing.

- 1.
- 2.
- 3.
- 4.

Name of Company/Members of Joint Venture:

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

Tenderers are also to evaluate any risk/s stated by the *Employer* in Contract Data Part C1, and provide possible mitigation thereof.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There is a vertical margin line on the left side, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled document.

Part T2: Returnable Schedules

T2.2-15: Risk Elements

The Tenderer to submit a list of all Equipment and other resources that will be used to execute the *works* as described in the Works Information.

[illegible]

[illegible]

T2.2-19: ANNEX G Compulsory Enterprise Questionnaire

The following particulars hereunder must be furnished.

In the case of a Joint Venture, separate enterprise questionnaires in respect of each partner/member must be completed and submitted.

Section 1: Name of enterprise: _____

Section 2: VAT registration number, if any: _____

Section 3: CIDB registration number: _____

Section 4: CSD number: _____

Section 5: Particulars of sole proprietors and partners in partnerships

Name	Identity number	Personal income tax number

* Complete only if sole proprietor or partnership and attach separate page if more than 3 partners

Section 6: Particulars of companies and close corporations

Company registration number _____

Close corporation number _____

Tax reference number: _____

Section 7: The attached SBD4 must be completed for each tender and be attached as a tender requirement.

Section 8: The attached SBD 6 must be completed for each tender and be attached as a requirement.

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise:

- i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed	_____	Date	_____
Name	_____	Position	_____
Enterprise name	_____		

SBD 6.1

PREFERENCE POINTS CLAIM FORM

This preference form must form part of all bids invited. It contains general information and serves as a claim for preference points for Broad-Based Black Economic Empowerment [**B-BBEE**] Status Level of Contribution.

Transnet will award preference points to companies who provide valid proof of their B-BBEE status using either the latest version of the generic Codes of Good Practice or Sector Specific Codes (if applicable).

1. GENERAL CONDITIONS

- 1.1 The following preference point systems are applicable to all bids:
- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included).
- 1.2 The value of this bid is estimated to not exceed R50 000 000 (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable. Despite the stipulated preference point system, Transnet shall use the lowest acceptable bid to determine the applicable preference point system in a situation where all received acceptable bids are received outside the stated preference point system.
- 1.3 Preference points for this bid shall be awarded for:
- (a) Price; and
 - (b) B-BBEE Status Level of Contribution.
- 1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTION	20
Total points for Price and B-BBEE must not exceed	100

- 1.5 Failure on the part of a bidder to submit proof of B-BBEE status level of contributor together with the bid will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.
- 1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated

or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- (a) **"all applicable taxes"** includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- (b) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (c) **"B-BBEE status level of contributor"** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (d) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the supply/provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- (e) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (f) **"EME"** means an Exempted Micro Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (g) **"functionality"** means the ability of a bidder to provide goods or services in accordance with specification as set out in the bid documents
- (h) **"Price"** includes all applicable taxes less all unconditional discounts.
- (i) **"Proof of B-BBEE Status Level of Contributor"**
 - i) the B-BBEE status level certificate issued by an authorised body or person;
 - ii) a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice; or
 - iii) any other requirement prescribed in terms of the B-BBEE Act.
- (j) **"QSE"** means a Qualifying Small Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (k) **"rand value"** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties.

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 80 points is allocated for price on the following basis:
80/20

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for comparative price of bid under consideration

P_t = Comparative price of bid under consideration

P_{\min} = Comparative price of lowest acceptable bid

4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION

- 4.1 preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (80/20 system)
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

- 4.2 The table below indicates the required proof of B-BBEE status depending on the category of enterprises:

Enterprise	B-BBEE Certificate & Sworn Affidavit
Large	Certificate issued by SANAS accredited verification agency
QSE	Certificate issued by SANAS accredited verification agency Sworn Affidavit signed by the authorised QSE representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership (only black-owned QSEs - 51% to 100% Black owned) [Sworn affidavits must substantially comply with the format that can be obtained on the DTI's website at www.dti.gov.za/economic_empowerment/bee_codes.jsp .]

EME¹	<p>Sworn Affidavit signed by the authorised EME representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership</p> <p>Certificate issued by CIPC (formerly CIPRO) confirming annual turnover and black ownership</p> <p>Certificate issued by SANAS accredited verification agency only if the EME is being measured on the QSE scorecard</p>
------------------------	--

- 4.3 A trust, consortium or joint venture (including unincorporated consortia and joint ventures) must submit a consolidated B-BBEE Status Level verification certificate for every separate bid.
- 4.4 Tertiary Institutions and Public Entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.
- 4.5 A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.
- 4.6 A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.
- 4.7 Bidders are to note that the rules pertaining to B-BBEE verification and other B-BBEE requirements may be changed from time to time by regulatory bodies such as National Treasury or the DTI. It is the Bidder's responsibility to ensure that his/her bid complies fully with all B-BBEE requirements at the time of the submission of the bid.

5. BID DECLARATION

- 5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

6. B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 6.1

- 6.1 B-BBEE Status Level of Contribution: . =(maximum of 20 points)

¹ In terms of the Implementation Guide: Preferential Procurement Regulations, 2017, Version 2, paragraph 11.11 provides that in the Transport Sector, EMEs can provide a letter from accounting officer or get verified and be issued with a B-BBEE certificate by SANAS accredited professional or agency as the Transport Sector Code has not been aligned to the generic Codes. EMEs in the Transport Sector are not allowed to provide a sworn affidavit as the generic codes are not applicable to them.

(Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.)

7. SUB-CONTRACTING

7.1 Will any portion of the contract be sub-contracted?

(***Tick applicable box***)

YES		NO	
-----	--	----	--

7.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE.

(***Tick applicable box***)

YES		NO	
-----	--	----	--

Designated Group: An EME or QSE which is at least 51% owned by:	EME ✓	QSE ✓
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
OR		
Any EME		
Any QSE		

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety

☐ Close corporation

☐ Company

☐ (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....
.....
.....

8.6 COMPANY CLASSIFICATION

☐ Manufacturer

☐ Supplier

☐ Professional Supplier/Service provider

☐ Other Suppliers/Service providers, e.g. transporter, etc.

[TICK APPLICABLE BOX]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If a bidder submitted false information regarding its B-BBEE status level of contributor,, which will affect or has affected the evaluation of a bid, or where a bidder has failed to declare any subcontracting arrangements or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) if the successful bidder subcontracted a portion of the bid to another person without disclosing it, Transnet reserves the right to

- penalise the bidder up to 10 percent of the value of the contract;
- (e) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and
- (f) forward the matter for criminal prosecution.

WITNESSES

1.

2.

.....

SIGNATURE(S) OF BIDDERS(S)

DATE:

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest² in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees /

² the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of institution	State

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....
.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?
YES/NO

2.3.1 If so, furnish particulars:

.....
.....

3 DECLARATION

I, _____ the _____ undersigned,
(name)..... in submitting
the accompanying bid, do hereby make the following statements that I certify to
be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;

3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;

3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor.

- However, communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....
Signature	Date
.....
Position	Name of bidder

³ Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.



T2.2-20 NON-DISCLOSURE AGREEMENT

Note to tenderers: This Non-Disclosure Agreement is to be completed and signed by an authorised signatory:

THIS AGREEMENT is made effective as of day of 20..... by and between:

TRANSNET SOC LTD

(Registration No. 1990/000900/30), a company incorporated and existing under the laws of South Africa, having its principal place of business at Transnet Corporate Centre 138 Eloff Street, Braamfontein, Johannesburg 2000

and

.....
(Registration No.), a private company incorporated and existing under the laws of South Africa having its principal place of business at
.....
.....

WHEREAS

Transnet and the Company wish to exchange Information [as defined below] and it is envisaged that each party may from time to time receive Information relating to the other in respect thereof. In consideration of each party making available to the other such Information, the parties jointly agree that any dealings between them shall be subject to the terms and conditions of this Agreement which themselves will be subject to the parameters of the Tender Document.

IT IS HEREBY AGREED

1. INTERPRETATION

In this Agreement:

- 1.1 **Agents** mean directors, officers, employees, agents, professional advisers, contractors or sub-contractors, or any Group member;
- 1.2 **Bid or Bid Document** (hereinafter Tender) means Transnet's Request for Information [**RFI**] Request for Proposal [**RFP**] or Request for Quotation [**RFQ**], as the case may be;
- 1.3 **Confidential Information** means any information or other data relating to one party [the **Disclosing Party**] and/or the business carried on or proposed or intended to be carried on by that party and which is made available for the purposes of the Bid to the other party [the **Receiving Party**] or its Agents by the Disclosing Party or its Agents or recorded in agreed minutes following oral disclosure and any other information otherwise made available by the Disclosing Party or its Agents to the Receiving Party or its Agents, whether before, on or after the date of this Agreement, and whether in writing or otherwise,

including any information, analysis or specifications derived from, containing or reflecting such information but excluding information which:

- 1.3.1 is publicly available at the time of its disclosure or becomes publicly available [other than as a result of disclosure by the Receiving Party or any of its Agents contrary to the terms of this Agreement]; or
- 1.3.2 was lawfully in the possession of the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] free of any restriction as to its use or disclosure prior to its being so disclosed; or
- 1.3.3 following such disclosure, becomes available to the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] from a source other than the Disclosing Party or its Agents, which source is not bound by any duty of confidentiality owed, directly or indirectly, to the Disclosing Party in relation to such information;
- 1.4 **Group** means any subsidiary, any holding company and any subsidiary of any holding company of either party; and
- 1.5 **Information** means all information in whatever form including, without limitation, any information relating to systems, operations, plans, intentions, market opportunities, know-how, trade secrets and business affairs whether in writing, conveyed orally or by machine-readable medium.

2. CONFIDENTIAL INFORMATION

- 2.1 All Confidential Information given by one party to this Agreement [the **Disclosing Party**] to the other party [the **Receiving Party**] will be treated by the Receiving Party as secret and confidential and will not, without the Disclosing Party's written consent, directly or indirectly communicate or disclose [whether in writing or orally or in any other manner] Confidential Information to any other person other than in accordance with the terms of this Agreement.
- 2.2 The Receiving Party will only use the Confidential Information for the sole purpose of technical and commercial discussions between the parties in relation to the Tender or for the subsequent performance of any contract between the parties in relation to the Tender.
- 2.3 Notwithstanding clause 2.1 above, the Receiving Party may disclose Confidential Information:
 - 2.3.1 to those of its Agents who strictly need to know the Confidential Information for the sole purpose set out in clause 2.2 above, provided that the Receiving Party shall ensure that such Agents are made aware prior to the disclosure of any part of the Confidential Information that the same is confidential and that they owe a duty of confidence to the Disclosing Party. The Receiving Party shall at all times remain liable for any actions of such Agents that would constitute a breach of this Agreement; or
 - 2.3.2 to the extent required by law or the rules of any applicable regulatory authority, subject to clause 2.4 below.
- 2.4 In the event that the Receiving Party is required to disclose any Confidential Information in accordance with clause 2.3.2 above, it shall promptly notify the Disclosing Party and cooperate with the Disclosing

Party regarding the form, nature, content and purpose of such disclosure or any action which the Disclosing Party may reasonably take to challenge the validity of such requirement.

- 2.5 In the event that any Confidential Information shall be copied, disclosed or used otherwise than as permitted under this Agreement then, upon becoming aware of the same, without prejudice to any rights or remedies of the Disclosing Party, the Receiving Party shall as soon as practicable notify the Disclosing Party of such event and if requested take such steps [including the institution of legal proceedings] as shall be necessary to remedy [if capable of remedy] the default and/or to prevent further unauthorised copying, disclosure or use.
- 2.6 All Confidential Information shall remain the property of the Disclosing Party and its disclosure shall not confer on the Receiving Party any rights, including intellectual property rights over the Confidential Information whatsoever, beyond those contained in this Agreement.

3. RECORDS AND RETURN OF INFORMATION

- 3.1 The Receiving Party agrees to ensure proper and secure storage of all Information and any copies thereof.
- 3.2 The Receiving Party shall keep a written record, to be supplied to the Disclosing Party upon request, of the Confidential Information provided and any copies made thereof and, so far as is reasonably practicable, of the location of such Confidential Information and any copies thereof.
- 3.3 The Company shall, within 7 [seven] days of receipt of a written demand from Transnet:
- 3.3.1 return all written Confidential Information [including all copies]; and
- 3.3.2 expunge or destroy any Confidential Information from any computer, word processor or other device whatsoever into which it was copied, read or programmed by the Company or on its behalf.
- 3.4 The Company shall on request supply a certificate signed by a director as to its full compliance with the requirements of clause 3.3.2 above.

4. ANNOUNCEMENTS

- 4.1 Neither party will make or permit to be made any announcement or disclosure of its prospective interest in the Tender without the prior written consent of the other party.
- 4.2 Neither party shall make use of the other party's name or any information acquired through its dealings with the other party for publicity or marketing purposes without the prior written consent of the other party.

5. DURATION

The obligations of each party and its Agents under this Agreement shall survive the termination of any discussions or negotiations between the parties regarding the Tender and continue thereafter for a period of 5 [five] years.

6. PRINCIPAL

Each party confirms that it is acting as principal and not as nominee, agent or broker for any other person and that it will be responsible for any costs incurred by it or its advisers in considering or pursuing the Tender and in complying with the terms of this Agreement.

7. ADEQUACY OF DAMAGES

Nothing contained in this Agreement shall be construed as prohibiting the Disclosing Party from pursuing any other remedies available to it, either at law or in equity, for any such threatened or actual breach of this Agreement, including specific performance, recovery of damages or otherwise.

8. PRIVACY AND DATA PROTECTION

- 8.1 The Receiving Party undertakes to comply with South Africa's general privacy protection in terms Section 14 of the Bill of Rights in connection with this Tender and shall procure that its personnel shall observe the provisions of such Act [as applicable] or any amendments and re-enactments thereof and any regulations made pursuant thereto.
- 8.2 The Receiving Party warrants that it and its Agents have the appropriate technical and organisational measures in place against unauthorised or unlawful processing of data relating to the Tender and against accidental loss or destruction of, or damage to such data held or processed by them.

9. GENERAL

- 9.1 Neither party may assign the benefit of this Agreement, or any interest hereunder, except with the prior written consent of the other, save that Transnet may assign this Agreement at any time to any member of the Transnet Group.
- 9.2 No failure or delay in exercising any right, power or privilege under this Agreement will operate as a waiver of it, nor will any single or partial exercise of it preclude any further exercise or the exercise of any right, power or privilege under this Agreement or otherwise.
- 9.3 The provisions of this Agreement shall be severable in the event that any of its provisions are held by a court of competent jurisdiction or other applicable authority to be invalid, void or otherwise unenforceable, and the remaining provisions shall remain enforceable to the fullest extent permitted by law.
- 9.4 This Agreement may only be modified by a written agreement duly signed by persons authorised on behalf of each party.
- 9.5 Nothing in this Agreement shall constitute the creation of a partnership, joint venture or agency between the parties.
- 9.6 This Agreement will be governed by and construed in accordance with South African law and the parties irrevocably submit to the exclusive jurisdiction of the South African courts.

Signed

Date

Name

Position



Tenderer

TENDER NUMBER: TNPA/2022/08/0868/9744/RFP

DESCRIPTION OF THE WORKS: APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD
ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR A
PERIOD OF FIVE (5) MONTHS



T2.2-21: RFP DECLARATION FORM

NAME OF COMPANY: _____

We _____ do hereby certify that:

1. Transnet has supplied and we have received appropriate tender offers to any/all questions (as applicable) which were submitted by ourselves for tender clarification purposes;
2. we have received all information we deemed necessary for the completion of this Tender;
3. at no stage have we received additional information relating to the subject matter of this tender from Transnet sources, other than information formally received from the designated Transnet contact(s) as nominated in the tender documents;
4. we are satisfied, insofar as our company is concerned, that the processes and procedures adopted by Transnet in issuing this tender and the requirements requested from tenderers in responding to this tender have been conducted in a fair and transparent manner; and
5. furthermore, we acknowledge that a direct relationship exists between a family member and/or an owner / member / director / partner / shareholder (unlisted companies) of our company and an employee or board member of the Transnet Group as indicated below:

[Respondent to indicate if this section is not applicable]

FULL NAME OF OWNER/MEMBER/DIRECTOR/

PARTNER/SHAREHOLDER:

ADDRESS:

Indicate nature of relationship with Transnet:

**TENDER NUMBER:** TNPA/2022/08/0868/9744/RFP**DESCRIPTION OF THE WORKS:** APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD
ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR A
PERIOD OF FIVE (5) MONTHS

[Failure to furnish complete and accurate information in this regard may lead to the disqualification of your response and may preclude a Respondent from doing future business with Transnet]

We declare, to the extent that we are aware or become aware of any relationship between ourselves and Transnet (other than any existing and appropriate business relationship with Transnet) which could unfairly advantage our company in the forthcoming adjudication process, we shall notify Transnet immediately in writing of such circumstances.

6. We accept that any dispute pertaining to this tender will be resolved through the Ombudsman process and will be subject to the Terms of Reference of the Ombudsman. The Ombudsman process must first be exhausted before judicial review of a decision is sought. (Refer "Important Notice to respondents" below).
7. We further accept that Transnet reserves the right to reverse a tender award or decision based on the recommendations of the Ombudsman without having to follow a formal court process to have such award or decision set aside.
8. We have acquainted ourselves and agree with the content of T2.2-24 "Service Provider Integrity Pact".

For and on behalf of duly authorised thereto
Name:
Signature:
Date:

IMPORTANT NOTICE TO TENDERERS

- Transnet has appointed a Procurement Ombudsman to investigate any material complaint in respect of tenders exceeding R5,000,000.00 (five million S.A. Rand) in value. Should a Tenderer have any material concern regarding an tender process which meets this value threshold, a complaint may be lodged with Transnet's Procurement Ombudsman for further investigation.



TENDER NUMBER: TNPA/2022/08/0868/9744/RFP

DESCRIPTION OF THE WORKS: APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD
ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR A
PERIOD OF FIVE (5) MONTHS

- It is incumbent on the Tenderer to familiarise himself/herself with the Terms of Reference for the Transnet Procurement Ombudsman, details of which are available for review at Transnet's website www.transnet.net.
- An official complaint form may be downloaded from this website and submitted, together with any supporting documentation, within the prescribed period, to procurement.ombud@transnet.net
- For transactions below the R5,000,000.00 (five million S.A. Rand) threshold, a complaint may be lodged with the Chief Procurement Officer of the relevant Transnet Operating Division.
- All Tenderers should note that a complaint must be made in good faith. If a complaint is made in bad faith, Transnet reserves the right to place such a tenderer on its List of Excluded Bidders.

**TENDER NUMBER:** TNPA/2022/08/0868/9744/RFP

DESCRIPTION OF THE WORKS: APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD
ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR A
PERIOD OF FIVE (5) MONTHS

T2.2-22: REQUEST FOR PROPOSAL – BREACH OF LAW

NAME OF COMPANY: _____

I / We _____ do hereby
certify that ***I/we have/have not been*** found guilty during the preceding 5 (five) years of a
serious breach of law, including but not limited to a breach of the Competition Act, 89 of
1998, by a court of law, tribunal or other administrative body. The type of breach that the
Tenderer is required to disclose excludes relatively minor offences or misdemeanours, e.g.
traffic offences.

Where found guilty of such a serious breach, please disclose:

NATURE OF BREACH:

DATE OF BREACH:

Furthermore, I/we acknowledge that Transnet SOC Ltd reserves the right to exclude any
Tenderer from the tendering process, should that person or company have been found guilty
of a serious breach of law, tribunal or regulatory obligation.

Signed on this ____ day of _____ 20____

SIGNATURE OF TENDER



T2.2-23 CERTIFICATE OF ACQUAINTANCE WITH TENDER DOCUMENTS

NAME OF TENDERING ENTITY:

1. By signing this certificate I/we acknowledge that I/we have made myself/ourselves thoroughly familiar with, and agree with all the conditions governing this RFP. This includes those terms and conditions of the Contract, the Supplier Integrity Pact, Non-Disclosure Agreement etc. contained in any printed form stated to form part of the documents thereof, but not limited to those listed in this clause.
2. I/we furthermore agree that Transnet SOC Ltd shall recognise no claim from me/us for relief based on an allegation that I/we overlooked any tender/contract condition or failed to take it into account for the purpose of calculating my/our offered prices or otherwise.
3. I/we understand that the accompanying Tender will be disqualified if this Certificate is found not to be true and complete in every respect.
4. For the purposes of this Certificate and the accompanying Tender, I/we understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:
 - a) has been requested to submit a Tender in response to this Tender invitation;
 - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
 - c) provides the same Services as the Tenderer and/or is in the same line of business as the Tenderer
5. The Tenderer has arrived at the accompanying Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive Tendering.
6. In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

**TENDER NUMBER:** TNPA/2022/08/0868/9744/RFP**DESCRIPTION OF THE WORKS:** APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR A PERIOD OF FIVE (5) MONTHS

- a) prices;
 - b) geographical area where Services will be rendered [market allocation]
 - c) methods, factors or formulas used to calculate prices;
 - d) the intention or decision to submit or not to submit, a Tender;
 - e) the submission of a tender which does not meet the specifications and conditions of the tender; or
 - f) Tendering with the intention not winning the tender.
7. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Services to which this tender relates.
8. The terms of the accompanying tender have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening or of the awarding of the contract.
9. I/We am/are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to tenders and contracts, tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation. In addition, Tenderers that submit suspicious tenders may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

Signed on this _____ day of _____ 20____

SIGNATURE OF TENDERER

T2.2-24 SERVICE PROVIDER INTEGRITY PACT

Important Note: All potential tenderers must read this document and certify in the RFP Declaration Form that they have acquainted themselves with and agree with the content.

The contract with the successful tenderer will automatically incorporate this Integrity Pact and shall be deemed as part of the final concluded contract.

INTEGRITY PACT

Between

TRANSNET SOC LTD

Registration Number: 1990/000900/30

("Transnet")

and

The Contractor (hereinafter referred to as the "Tenderer/Service Providers/Contractor")



PREAMBLE

Transnet values full compliance with all relevant laws and regulations, ethical standards and the principles of economical use of resources, fairness and transparency in its relations with its Tenderers/Service Providers/Contractors.

In order to achieve these goals, Transnet and the Tenderer/Service Provider/Contractor hereby enter into this agreement hereinafter referred to as the "Integrity Pact" which will form part of the Tenderer's/Service Provider's/Contractor's application for registration with Transnet as a vendor.

The general purpose of this Integrity Pact is to agree on avoiding all forms of dishonesty, fraud and corruption by following a system that is fair, transparent and free from any undue influence prior to, during and subsequent to the currency of any procurement and/or reverse logistics event and any further contract to be entered into between the Parties, relating to such event.

All Tenderers/Service Providers/Contractors will be required to sign and comply with undertakings contained in this Integrity Pact, should they want to be registered as a Transnet vendor.

1 OBJECTIVES

- 1.1 Transnet and the Tenderer/Service Provider/Contractor agree to enter into this Integrity Pact, to avoid all forms of dishonesty, fraud and corruption including practices that are anti-competitive in nature, negotiations made in bad faith and under-pricing by following a system that is fair, transparent and free from any influence/unprejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:
 - a) Enable Transnet to obtain the desired contract at a reasonable and competitive price in conformity to the defined specifications of the works, goods and services; and
 - b) Enable Tenderers/Service Providers/Contractors to abstain from bribing or participating in any corrupt practice in order to secure the contract.

2 COMMITMENTS OF TRANSNET

Transnet commits to take all measures necessary to prevent dishonesty, fraud and corruption and to observe the following principles:

- 2.1 Transnet hereby undertakes that no employee of Transnet connected directly or indirectly with the sourcing event and ensuing contract, will demand, take a promise for or accept directly or through intermediaries any bribe, consideration,



gift, reward, favour or any material or immaterial benefit or any other advantage from the Tenderer, either for themselves or for any person, organisation or third party related to the contract in exchange for an advantage in the tendering process, Tender evaluation, contracting or implementation process related to any contract.

- 2.2 Transnet will, during the registration and tendering process treat all Tenderers/ Service Providers/Contractor with equity, transparency and fairness. Transnet will in particular, before and during the registration process, provide to all Tenderers/ Service Providers/Contractors the same information and will not provide to any Tenderers/Service Providers/Contractors confidential/additional information through which the Tenderers/Service Providers/Contractors could obtain an advantage in relation to any tendering process.
- 2.3 Transnet further confirms that its employees will not favour any prospective Tenderers/Service Providers/Contractors in any form that could afford an undue advantage to a particular Tenderer during the tendering stage, and will further treat all Tenderers/Service Providers/Contractors participating in the tendering process in a fair manner.
- 2.4 Transnet will exclude from the tender process such employees who have any personal interest in the Tenderers/Service Providers/Contractors participating in the tendering process.

3 OBLIGATIONS OF THE TENDERER / SERVICE PROVIDER

- 3.1 Transnet has a '**Zero Gifts**' Policy. No employee is allowed to accept gifts, favours or benefits.
 - a) Transnet officials and employees **shall not** solicit, give or accept, or from agreeing to solicit, give, accept or receive directly or indirectly, any gift, gratuity, favour, entertainment, loan, or anything of monetary value, from any person or juridical entities in the course of official duties or in connection with any operation being managed by, or any transaction which may be affected by the functions of their office.
 - b) Transnet officials and employees **shall not** solicit or accept gifts of any kind, from vendors, suppliers, customers, potential employees, potential vendors, and suppliers, or any other individual or organisation irrespective of the value.
 - c) Under **no circumstances** should gifts, business courtesies or hospitality packages be accepted from or given to prospective suppliers participating in a tender process at the respective employee's Operating Division, regardless of retail value.



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- d) Gratuities, bribes or kickbacks of any kind must never be solicited, accepted or offered, either directly or indirectly. This includes money, loans, equity, special privileges, personal favours, benefit or services. Such favours will be considered to constitute corruption.
- 3.2 The Tenderer/Service Provider/Contractor commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its Tender or during any ensuing contract stage in order to secure the contract or in furtherance to secure it and in particular the Tenderer/Service Provider/Contractor commits to the following:
- a) The Tenderer/Service Provider/Contractor will not, directly or through any other person or firm, offer, promise or give to Transnet or to any of Transnet's employees involved in the tendering process or to any third person any material or other benefit or payment, in order to obtain in exchange an advantage during the tendering process; and
 - b) The Tenderer/Service Provider/Contractor will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any employee of Transnet, connected directly or indirectly with the tendering process, or to any person, organisation or third party related to the contract in exchange for any advantage in the tendering, evaluation, contracting and implementation of the contract.
- 3.3 The Tenderer/Service Provider/Contractor will not collude with other parties interested in the contract to preclude a competitive Tender price, impair the transparency, fairness and progress of the tendering process, Tender evaluation, contracting and implementation of the contract. The Tenderer / Service Provider further commits itself to delivering against all agreed upon conditions as stipulated within the contract.
- 3.4 The Tenderer/Service Provider/Contractor will not enter into any illegal or dishonest agreement or understanding, whether formal or informal with other Tenderers/Service Providers/Contractors. This applies in particular to certifications, submissions or non-submission of documents or actions that are restrictive or to introduce cartels into the tendering process.
- 3.5 The Tenderer/Service Provider/Contractor will not commit any criminal offence under the relevant anti-corruption laws of South Africa or any other country. Furthermore, the Tenderer/Service Provider/Contractor will not use for illegitimate purposes or for restrictive purposes or personal gain, or pass on to others, any information provided by Transnet as part of the business relationship,



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regarding plans, technical proposals and business details, including information contained or transmitted electronically.

- 3.6 A Tenderer/Service Provider/Contractor of foreign origin shall disclose the name and address of its agents or representatives in South Africa, if any, involved directly or indirectly in the registration or tendering process. Similarly, the Tenderer / Service Provider / Contractor of South African nationality shall furnish the name and address of the foreign principals, if any, involved directly or indirectly in the registration or tendering process.
- 3.7 The Tenderer/Service Provider/Contractor will not misrepresent facts or furnish false or forged documents or information in order to influence the tendering process to the advantage of the Tenderer/Service Provider/Contractor or detriment of Transnet or other competitors.
- 3.8 Transnet may require the Tenderer/Service Provider/Contractor to furnish Transnet with a copy of its code of conduct. Such code of conduct must address the compliance programme for the implementation of the code of conduct and reject the use of bribes and other dishonest and unethical conduct.
- 3.9 The Tenderer/Service Provider/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 3.10 The Tenderer/Service Provider/Contractor confirms that they will uphold the ten principles of the United Nations Global Compact (UNGC) in the fields of Human Rights, Labour, Anti-Corruption and the Environment when undertaking business with Transnet as follows:

a) Human Rights

- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
- Principle 2: make sure that they are not complicit in human rights abuses.

b) Labour

- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- Principle 4: the elimination of all forms of forced and compulsory labour;
- Principle 5: the effective abolition of child labour; and



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- Principle 6: the elimination of discrimination in respect of employment and occupation.

c) Environment

- Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: undertake initiatives to promote greater environmental responsibility; and
- Principle 9: encourage the development and diffusion of environmentally friendly technologies.

d) Anti-Corruption

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

4 INDEPENDENT TENDERING

4.1 For the purposes of that Certificate in relation to any submitted Tender, the Tenderer declares to fully understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:

- a) has been requested to submit a Tender in response to this Tender invitation;
- b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
- c) provides the same Goods and Services as the Tenderer and/or is in the same line of business as the Tenderer.

4.2 The Tenderer has arrived at his submitted Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive tendering.

4.3 In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

- a) prices;
- b) geographical area where Goods or Services will be rendered [market allocation];



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- c) methods, factors or formulas used to calculate prices;
 - d) the intention or decision to submit or not to submit, a Tender;
 - e) the submission of a Tender which does not meet the specifications and conditions of the RFP; or
 - f) tendering with the intention of not winning the Tender.
- 4.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Goods or Services to which his/her tender relates.
- 4.5 The terms of the Tender as submitted have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official Tender opening or of the awarding of the contract.
- 4.6 Tenderers are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to Tenders and contracts, Tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [**NPA**] for criminal investigation and/or may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.
- 4.7 Should the Tenderer find any terms or conditions stipulated in any of the relevant documents quoted in the Tender unacceptable, it should indicate which conditions are unacceptable and offer alternatives by written submission on its company letterhead, attached to its submitted Tender. Any such submission shall be subject to review by Transnet's Legal Counsel who shall determine whether the proposed alternative(s) are acceptable or otherwise, as the case may be.

5 DISQUALIFICATION FROM TENDERING PROCESS

- 5.1 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3 of this Integrity Pact or in any other form such as to put its reliability or credibility as a Tenderer/Service Provider/Contractor into question, Transnet may reject the Tenderer's / Service Provider's / Contractor's application from the registration or tendering process and remove the Tenderer/Service Provider/Contractor from its database, if already registered.



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- 5.2 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3, or any material violation, such as to put its reliability or credibility into question. Transnet may after following due procedures and at its own discretion also exclude the Tenderer/Service Provider/Contractor from future tendering processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, which will include amongst others the number of transgressions, the position of the transgressors within the company hierarchy of the Tenderer/Service Provider/Contractor and the amount of the damage. The exclusion will be imposed for up to a maximum of 10 (ten) years. However, Transnet reserves the right to impose a longer period of exclusion, depending on the gravity of the misconduct.
- 5.3 If the Tenderer/Service Provider/Contractor can prove that it has restored the damage caused by it and has installed a suitable corruption prevention system, or taken other remedial measures as the circumstances of the case may require, Transnet may at its own discretion revoke the exclusion or suspend the imposed penalty.

6 TRANSNET'S LIST OF EXCLUDED TENDERERS (BLACKLIST)

- 6.1 The process of restriction is used to exclude a company/person from conducting future business with Transnet and other organs of state for a specified period. No Tender shall be awarded to a Tenderer whose name (or any of its members, directors, partners or trustees) appear on the Register of Tender Defaulters kept by National Treasury, or who have been placed on National Treasury's List of Restricted Suppliers. Transnet reserves the right to withdraw an award, or cancel a contract concluded with a Tenderer should it be established, at any time, that a tenderer has been restricted with National Treasury by another government institution.
- 6.2 All the stipulations on Transnet's restriction process as laid down in Transnet's Supply Chain Policy and Procurement Procedures Manual (CPM included) are included herein by way of reference. Below follows a condensed summary of this restriction procedure.
- 6.3 On completion of the restriction procedure, Transnet will submit the restricted entity's details (including the identity number of the individuals and registration number of the entity) to National Treasury for placement on National Treasury's Database of Restricted Suppliers for the specified period of exclusion. National Treasury will make the final decision on whether to restrict an entity from doing business with any organ of state for a period not exceeding 10 years and place



the entity concerned on the Database of Restricted Suppliers published on its official website.

- 6.4 The decision to restrict is based on one of the grounds for restriction. The standard of proof to commence the restriction process is whether a "*prima facie*" (i.e. on the face of it) case has been established.
- 6.5 Depending on the seriousness of the misconduct and the strategic importance of the Goods/Services, in addition to restricting a company/person from future business, Transnet may decide to terminate some or all existing contracts with the company/person as well.
- 6.6 A Service Provider or Contractor to Transnet may not subcontract any portion of the contract to a blacklisted company.
- 6.7 Grounds for blacklisting include: If any person/Enterprise which has submitted a Tender, concluded a contract, or, in the capacity of agent or subcontractor, has been associated with such Tender or contract:
- a) Has, in bad faith, withdrawn such Tender after the advertised closing date and time for the receipt of Tenders;
 - b) has, after being notified of the acceptance of his Tender, failed or refused to sign a contract when called upon to do so in terms of any condition forming part of the Tender documents;
 - c) has carried out any contract resulting from such Tender in an unsatisfactory manner or has breached any condition of the contract;
 - d) has offered, promised or given a bribe in relation to the obtaining or execution of the contract;
 - e) has acted in a fraudulent or improper manner or in bad faith towards Transnet or any Government Department or towards any public body, Enterprise or person;
 - f) has made any incorrect statement in a certificate or other communication with regard to the Local Content of his Goods or his B-BBEE status and is unable to prove to the satisfaction of Transnet that:
 - (i) he made the statement in good faith honestly believing it to be correct;
 - and



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- (ii) before making such statement he took all reasonable steps to satisfy himself of its correctness;
 - g) caused Transnet damage, or to incur costs in order to meet the contractor's requirements and which could not be recovered from the contractor;
 - h) has litigated against Transnet in bad faith.
- 6.8 Grounds for blacklisting include a company/person recorded as being a company or person prohibited from doing business with the public sector on National Treasury's database of Restricted Service Providers or Register of Tender Defaulters.
- 6.9 Companies associated with the person/s guilty of misconduct (i.e. entities owned, controlled or managed by such persons), any companies subsequently formed by the person(s) guilty of the misconduct and/or an existing company where such person(s) acquires a controlling stake may be considered for blacklisting. The decision to extend the blacklist to associated companies will be at the sole discretion of Transnet.

7 PREVIOUS TRANSGRESSIONS

- 7.1 The Tenderer/Service Provider/Contractor hereby declares that no previous transgressions resulting in a serious breach of any law, including but not limited to, corruption, fraud, theft, extortion and contraventions of the Competition Act 89 of 1998, which occurred in the last 5 (five) years with any other public sector undertaking, government department or private sector company that could justify its exclusion from its registration on the Tenderer's/Service Provider's/Contractor's database or any tendering process.
- 7.2 If it is found to be that the Tenderer/Service Provider/Contractor made an incorrect statement on this subject, the Tenderer/Service Provider/Contractor can be rejected from the registration process or removed from the Tenderer/Service Provider/Contractor database, if already registered, for such reason (refer to the Breach of Law Returnable Form contained in the document.)

8 SANCTIONS FOR VIOLATIONS

- 8.1 Transnet shall also take all or any one of the following actions, wherever required to:
 - a) Immediately exclude the Tenderer/Service Provider/Contractor from the tendering process or call off the pre-contract negotiations without giving any compensation



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- the Tenderer/Service Provider/Contractor. However, the proceedings with the other Tenderer/ Service Provider/Contractor may continue;
- b) Immediately cancel the contract, if already awarded or signed, without giving any compensation to the Tenderer/Service Provider/Contractor;
 - c) Recover all sums already paid by Transnet;
 - d) Encash the advance bank guarantee and performance bond or warranty bond, if furnished by the Tenderer/Service Provider/Contractor, in order to recover the payments, already made by Transnet, along with interest;
 - e) Cancel all or any other contracts with the Tenderer/Service Provider/Contractor; and
 - f) Exclude the Tenderer/ Service Provider/Contractor from entering into any Tender with Transnet in future.

9 CONFLICTS OF INTEREST

9.1 A conflict of interest includes, inter alia, a situation in which:

- a) A Transnet employee has a personal financial interest in a tendering / supplying entity; and
- b) A Transnet employee has private interests or personal considerations or has an affiliation or a relationship which affects, or may affect, or may be perceived to affect his / her judgment in action in the best interest of Transnet, or could affect the employee's motivations for acting in a particular manner, or which could result in, or be perceived as favouritism or nepotism.

9.2 A Transnet employee uses his / her position, or privileges or information obtained while acting in the capacity as an employee for:

- a) Private gain or advancement; or
- b) The expectation of private gain, or advancement, or any other advantage accruing to the employee must be declared in a prescribed form.

Thus, conflicts of interest of any Tender committee member or any person involved in the sourcing process must be declared in a prescribed form.

9.3 If a Tenderer/Service Provider/Contractor has or becomes aware of a conflict of interest i.e. a family, business and / or social relationship between its owner(s)/ member(s)/director(s)/partner(s)/shareholder(s) and a Transnet employee/ member of Transnet's Board of Directors in respect of a Tender which will be considered for the Tender process, the Tenderer/Service Provider/ Contractor:

- a) must disclose the interest and its general nature, in the Request for Proposal ("RFX") declaration form; or
- b) must notify Transnet immediately in writing once the circumstances has arisen.



- 9.4 The Tenderer/Service Provider/Contractor shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any committee member or any person involved in the sourcing process, where this is done, Transnet shall be entitled forthwith to rescind the contract and all other contracts with the Tenderer/Service Provider/Contractor.

10 DISPUTE RESOLUTION

10.1 Transnet recognises that trust and good faith are pivotal to its relationship with its Tenderer / Service Provider / Contractor. When a dispute arises between Transnet and its Tenderer / Service Provider / Contractor, the parties should use their best endeavours to resolve the dispute in an amicable manner, whenever possible. Litigation in bad faith negates the principles of trust and good faith on which commercial relationships are based. Accordingly, following a blacklisting process as mentioned in paragraph 6 above, Transnet will not do business with a company that litigates against it in bad faith or is involved in any action that reflects bad faith on its part. Litigation in bad faith includes, but is not limited to the following instances:

- a) **Vexatious proceedings:** these are frivolous proceedings which have been instituted without proper grounds;
- b) **Perjury:** where a Tenderer / Service Provider / Contractor make a false statement either in giving evidence or on an affidavit;
- c) **Scurrilous allegations:** where a Tenderer / Service Provider / Contractor makes allegations regarding a senior Transnet employee which are without proper foundation, scandalous, abusive or defamatory; and
- d) **Abuse of court process:** when a Tenderer / Service Provider / Contractor abuses the court process in order to gain a competitive advantage during a Tender process.

11 GENERAL

11.1 This Integrity Pact is governed by and interpreted in accordance with the laws of the Republic of South Africa.

11.2 The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the law relating to any civil or criminal proceedings.

11.3 The validity of this Integrity Pact shall cover all the tendering processes and will be valid for an indefinite period unless cancelled by either Party.



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11.4 Should one or several provisions of this Integrity Pact turn out to be invalid the remainder of this Integrity Pact remains valid.

11.5 Should a Tenderer/Service Provider/Contractor be confronted with dishonest, fraudulent or corruptive behaviour of one or more Transnet employees, Transnet expects its Tenderer/Service Provider/Contractor to report this behaviour directly to a senior Transnet official/employee or alternatively by using Transnet's "Tip-Off Anonymous" hotline number 0800 003 056, whereby your confidentiality is guaranteed.

The Parties hereby declare that each of them has read and understood the clauses of this Integrity Pact and shall abide by it. To the best of the Parties' knowledge and belief, the information provided in this Integrity Pact is true and correct.

I duly authorised by the tendering entity, hereby certify that the tendering entity are **fully acquainted** with the contents of the Integrity Pact and further **agree to abide by it** in full.

Signature

Date



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T2.2-25 : SUPPLIER CODE OF CONDUCT

Transnet SOC Limited aims to achieve the best value for money when buying or selling goods and obtaining services. This however must be done in an open and fair manner that supports and drives a competitive economy. Underpinning our process are several acts and policies that any supplier dealing with Transnet must understand and support. These are:

- The Transnet Procurement Policy – A guide for Tenderers.
- Section 217 of the Constitution - the five pillars of Public PSCM (Procurement and Supply Chain Management): fair, equitable, transparent, competitive and cost effective;
- The Public Finance Management Act (PFMA);
- The Broad Based Black Economic Empowerment Act (BBBEE)
- The Prevention and Combating of Corrupt Activities Act (PRECCA); and
- The Construction Industry Development Board Act (CIDB Act).

This code of conduct has been included in this contract to formally appraise Transnet Suppliers of Transnet's expectations regarding behaviour and conduct of its Suppliers.

Prohibition of Bribes, Kickbacks, Unlawful Payments, and Other Corrupt Practices

Transnet is in the process of transforming itself into a self-sustaining State Owned Enterprise, actively competing in the logistics industry. Our aim is to become a world class, profitable, logistics organisation. As such, our transformation is focused on adopting a performance culture and to adopt behaviours that will enable this transformation.

1. Transnet SOC Limited will not participate in corrupt practices. Therefore, it expects its suppliers to act in a similar manner.

- Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions with, and payments to, our suppliers.
- Employees must not accept or request money or anything of value, directly or indirectly, from suppliers.
- Employees may not receive anything that is calculated to:



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- Illegally influence their judgement or conduct or to ensure the desired outcome of a sourcing activity;
- Win or retain business or to influence any act or decision of any person involved in sourcing decisions; or
- Gain an improper advantage.
- There may be times when a supplier is confronted with fraudulent or corrupt behaviour of Transnet employees. We expect our Suppliers to use our “Tip-offs Anonymous” Hot line to report these acts. (0800 003 056).

2. *Transnet SOC Limited is firmly committed to the ideas of free and competitive enterprise.*

- Suppliers are expected to comply with all applicable laws and regulations regarding fair competition and antitrust practices.
- Transnet does not engage with non-value adding agents or representatives solely for the purpose of increasing BBBEE spend (fronting).

3. *Transnet’s relationship with suppliers requires us to clearly define requirements, to exchange information and share mutual benefits.*

- Generally, suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
 - Misrepresentation of their product (origin of manufacture, specifications, intellectual property rights, etc);
 - Collusion;
 - Failure to disclose accurate information required during the sourcing activity (ownership, financial situation, BBBEE status, etc.);
 - Corrupt activities listed above; and
 - Harassment, intimidation or other aggressive actions towards Transnet employees.



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- Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence is conducted and the supplier is expected to participate in an honest and straight forward manner.
- Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.

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Conflicts of Interest

A conflict of interest arises when personal interests or activities influence (or appear to influence) the ability to act in the best interests of Transnet SOC Limited.

- Doing business with family members.
- Having a financial interest in another company in our industry

Where possible, contracts will be negotiated to include the above in the terms of such contracts. To the extent such terms are not included in contractual obligations and any of the above code is breached, then Transnet reserves its right to review doing business with these suppliers.

I, _____ of _____
(insert name of Director or as per Authority Resolution from Board of Directors) *(insert name of Company)*

hereby acknowledge having read, understood and agree to the terms and conditions set out in the "Transnet Supplier Code of Conduct."

Signed _____ this _____ on _____ day _____ at _____

Signature

T2.2-26 AGREEMENT IN TERMS OF PROTECTION OF PERSONAL INFORMATION ACT, 4 OF 2013 ("POPIA")

1. PREAMBLE AND INTRODUCTION

- 1.1. The rights and obligation of the Parties in terms of the Protection of Personal Information Act, 4 of 2013 ("POPIA") are included as forming part of the terms and conditions of this contract.

2. PROTECTION OF PERSONAL INFORMATION

- 2.1. The following terms shall bear the same meaning as contemplated in Section 1 of the Protection of Person information act, No. of 2013 "(POPIA)":
- consent; data subject; electronic communication; information officer; operator; person; personal information; processing; record; Regulator; responsible party; special information; as well as any terms derived from these terms.
- 2.2. The Operator will process all information by the Transnet in terms of the requirements contemplated in Section 4(1) of the POPIA:
- Accountability; Processing limitation; Purpose specification; Further processing limitation; Information quality; Openness; Security safeguards and Data subject participation.
- 2.3. The Parties acknowledge and agree that, in relation to personal information of Transnet and the information of a third party that will be processed pursuant to this Agreement, the Operator is (insert name of Tenderer.....) hereinafter Operator and the Data subject is "Transnet". Operator will process personal information only with the knowledge and authorisation of Transnet and will treat personal information and the information of a third party which comes to its knowledge as confidential and will not disclose it, unless so required by law or subject to the exceptions contained in the POPIA.
- 2.4. Transnet reserves all the rights afforded to it by the POPIA in the processing of any of its information as contained in this Agreement and the Operator is required to comply with all prescripts as detailed in the POPIA relating to all information concerning Transnet.
- 2.5. In terms of this Agreement, the Operator acknowledges that it will obtain and have access to personal information of Transnet and the information of a third party and agrees that it shall only process the information disclosed by Transnet in terms of this Agreement and only for the purposes as detailed in this Agreement and in accordance with any applicable law.
- 2.6. Should there be a need for the Operator to process the personal information and the information of a third party in a way that is not agreed to in this Agreement, the Operator must request consent

from Transnet to the processing of its personal information or and the information of a third party in a manner other than that it was collected for, which consent cannot be unreasonably withheld.

- 2.7. Furthermore, the Operator will not otherwise modify, amend or alter any personal information and the information of a third party submitted by Transnet or disclose or permit the disclosure of any personal information and the information of a third party to any third party without prior written consent from Transnet.
- 2.8. The Operator shall, at all times, ensure compliance with any applicable laws put in place and maintain sufficient measures, policies and systems to manage and secure against all forms of risks to any information that may be shared or accessed pursuant to the services offered to Transnet in terms of this Agreement (physically, through a computer or any other form of electronic communication).
- 2.9. The Operator shall notify Transnet in writing of any unauthorised access to personal information and the information of a third party , cybercrimes or suspected cybercrimes, in its knowledge and report such crimes or suspected crimes to the relevant authorities in accordance with applicable laws, after becoming aware of such crimes or suspected crime. The Operator must inform Transnet of the breach as soon as it has occurred to allow Transnet to take all necessary remedial steps to mitigate the extent of the loss or compromise of personal information and the information of a third party and to restore the integrity of the affected personal information as quickly as is possible.
- 2.10. Transnet may, in writing, request the Operator to confirm and/or make available any personal information and the information of a third party in its possession in relation to Transnet and if such personal information has been accessed by third parties and the identity thereof in terms of the POPIA.
- 2.11. Transnet may further request that the Operator correct, delete, destroy, withdraw consent or object to the processing of any personal information and the information of a third party relating to the Transnet or a third party in the Operator's possession in terms of the provision of the POPIA and utilizing Form 2 of the POPIA Regulations .
- 2.12. In signing this addendum that is in terms of the POPIA, the Operator hereby agrees that it has adequate measures in place to provide protection of the personal information and the information of a third party given to it by Transnet in line with the 8 conditions of the POPIA and that it will provide to Transnet satisfactory evidence of these measures whenever called upon to do so by Transnet.

The Operator is required to provide confirmation that all measures in terms of the POPIA are in place when processing personal information and the information of a third party received from Transnet:

YES	
------------	--

NO	
-----------	--

2.13. Further, the Operator acknowledges that it will be held liable by Transnet should it fail to process personal information in line with the requirements of the POPIA. The Operator will be subject to any civil or criminal action, administrative fines or other penalty or loss that may arise as a result of the processing of any personal information that Transnet submitted to it.

2.14. Should a Tenderer have any complaints or objections to processing of its personal information, by Transnet, the Tenderer can submit a complaint to the Information Regulator on <https://www.justice.gov.za/infoereg/>, click on contact us, click on complaints.IR@justice.gov.za

3. **SOLE AGREEMENT**

3.1. The Agreement, constitute the sole agreement between the parties relating to the subject matter referred to in paragraph 1.1 of this and no amendment/variation/change shall be of any force and effect unless reduced to writing and signed by or on behalf of both parties.

Signed at _____ on this _____ day of _____ 2021

Name: _____

Title: _____

Signature: _____

Tenderer Name:.....

(Operator)

Authorised signatory for and on behalf of who warrants that he/she is duly authorised to sign this Agreement.

AS WITNESSES:

1. Name: _____ Signature: _____

2. Name: _____ Signature: _____

T2.2-27: Insurance provided by the *Contractor*

Clause 84.1 in NEC3 Engineering & Construction Contract (June 2005) (amended June 2006 and April 2013) requires that the *Contractor* provides the insurance stated in the insurance table except any insurance which the *Employer* is to provide as stated in the Contract Data.

Please provide the following details for insurance which the *Contractor* is still to provide. Notwithstanding this information all costs related to insurance are deemed included in the tenderer's rates and prices.

Insurance against (See clause 84.2 of the ECC)	Name of Insurance Company	Cover	Premium
Liability for death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract			
Comprehensive Insurance in respect of loss of or damage to own and third party property and equipment.			
(Other)			

T2.2-28: Form of Intent to Provide a Performance Guarantee

It is hereby agreed by the Tenderer that a Performance Guarantee drafted **exactly** as provided in the tender documents will be provided by the Guarantor named below, which is a **bank or insurer registered in South Africa**:

Name of Guarantor
(Bank/Insurer)

Address

The Performance Guarantee shall be provided within **2 (Two)** weeks after the Contract Date defined in the contract unless otherwise agreed to by the parties.

Signed

Name

Capacity

On behalf of (name of
tenderer)

Date

Confirmed by Guarantor's Authorised Representative

Signature(s)

Name (print)

Capacity

On behalf of Guarantor
(Bank/insurer)

Date

T2.2-29: Three (3) years audited financial statements

Attached to this schedule is the last three (3) years audited financial statements of the single tenderer/members of the Joint Venture.

NAME OF COMPANY/IES and INDEX OF ATTACHMENTS:

.....

.....

.....

.....

.....

.....

.....

C1.1: Form of Offer & Acceptance

Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

**APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD
ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR
A PERIOD OF FIVE (5) MONTHS.**

The tenderer, identified in the Offer signature block, has

<i>either</i>	examined the documents listed in the Tender Data and addenda thereto as listed in the Returnable Schedules, and by submitting this Offer has accepted the Conditions of Tender.
---------------	---

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the *Contractor* under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the *conditions of contract* identified in the Contract Data.

The offered total of the Prices exclusive of VAT is	R
Value Added Tax @ 15% is	R
The offered total of the Prices inclusive of VAT is	R
(in words)	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s)

Name(s)

Capacity

**For the
tenderer:**

(Insert name and address of organisation)

Name &
signature of
witness

Date

Tenderer's CIDB registration number:

Acceptance

By signing this part of this Form of Offer and Acceptance, the *Employer* identified below accepts the tenderer's Offer. In consideration thereof, the *Employer* shall pay the *Contractor* the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the *Employer* and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any).



Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)

Name(s)

Capacity

**for the
Employer**

Transnet SOC Ltd

(Insert name and address of organisation)

Name &
signature of
witness

Date

Schedule of Deviations

Note:

1. To be completed by the Employer prior to award of contract. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1		
2		
3		
4		
5		

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

	For the tenderer:	For the Employer
Signature	_____	_____
Name	_____	_____
Capacity	_____	_____
On behalf of	<i>(Insert name and address of organisation)</i>	Transnet SOC Ltd
Name & signature of witness	_____	_____

TRANSNET NATIONAL PORTS AUTHORITY
TENDER NUMBER: TNPA/2022/08/0868/9744/RFP
DESCRIPTION OF THE WORKS: APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD
ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR
A PERIOD OF FIVE (5) MONTHS.



Date



C1.2 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	
		A: Priced contract with activity schedule
	dispute resolution Option	W1: Dispute resolution procedure
	and secondary Options	
		X2 Changes in the law
		X4: Parent company guarantee
		X5: Sectional Completion
		X5&7: Delay damages
		X13: Performance Bond
		X16: Retention
		X18: Limitation of liability
		Z: <i>Additional conditions of contract</i>
	of the NEC3 Engineering and Construction Contract June 2005 (amended June 2006 and April 2013)	
10.1	The <i>Employer</i> is:	Transnet SOC Ltd (Registration No. 1990/000900/30)



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PERIOD OF FIVE (5) MONTHS

	Address	Registered address: Transnet Corporate Centre 138 Eloff Street Braamfontein Johannesburg 2000
	Having elected its Contractual Address for the purposes of this contract as:	Transnet National Ports Authority eMendi Building N2 Neptune Road Off Klub Road Port of Ngqura Port Elizabeth 6100
10.1	The <i>Project Manager</i> is: (Name)	Sindiswa Tunzi
	Address	eMendi Building N2 Neptune Road Off Klub Road Port of Ngqura Port Elizabeth 6100
	Tel	+27674290388
	e-mail	Sindiswa.Tunzi@Transnet.net
10.1	The <i>Supervisor</i> is: (Name)	Yandisa Siralarala
	Address	eMendi Building N2 Neptune Road Off Klub Road Port of Ngqura Port Elizabeth 6100
	Tel No.	+27605694491
	e-mail	Yandisa.Siralarala@Transnet.net
11.2(13)	The <i>works</i> are	Design and build parking bays



11.2(14)	The following matters will be included in the Risk Register	<div>1. Damages to underground services</div> <div>2. Design variations</div> <div>3. Contractor might encounter different site conditions</div> <div>4. Design outputs lesser than anticipated</div> <div>5. Encroachment into construction footprint (Nursery)</div>	
11.2(15)	The <i>boundaries of the site</i> are	As stated in Part C4.1."Description of the Site and it surroundings"	
11.2(16)	The Site Information is in	Part C4	
11.2(19)	The Works Information is in	Part C3	
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.	
13.1	The <i>language of this contract</i> is	English	
13.3	The <i>period for reply</i> is	2 weeks	
2	The <i>Contractor's</i> main responsibilities	No additional data is required for this section of the <i>conditions of contract</i> .	
3	Time		
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	16 May 2023	
11.2(9)	The <i>key dates</i> and the <i>conditions</i> to be met are:	<i>Condition to be met</i>	<i>key date</i>
		1 Approval of SHE file	07 Dec 2022
		2 Topography and Geotechnical surveys	30 Nov 2022
		3 Design	12 Jan 2023
		4 Construction area 1	09 Mar 2023
		5 Construction area 2	09 May 2023



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30.1	The <i>access dates</i> are	Part of the Site	Date
		1 Construction area 1	13 Jan 2023
		2 Construction area 2	10 Mar 2023
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	2 weeks of the Contract Date.	
31.2	The <i>starting date</i> is	30 Nov 2022	
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	2 weeks.	
35.1	The <i>Employer</i> is not willing to take over the <i>works</i> before the Completion Date.		
4	Testing and Defects		
42.2	The <i>defects date</i> is	52 (fifty two) weeks after Completion of the whole of the <i>works</i>.	
43.2	The <i>defect correction period</i> is	2 weeks	
5	Payment		
50.1	The <i>assessment interval</i> is monthly on the	25th (twenty fifth) day of each successive month.	
51.1	The <i>currency of this contract</i> is the	South African Rand.	
51.2	The period within which payments are made is	Payment will be effected on or before the last day of the month following the month during which a valid Tax Invoice and Statement were received.	
51.4	The <i>interest rate</i> is	the prime lending rate of Rand Merchant Bank.	
6	Compensation events		
60.1(13)	The <i>weather measurements</i> to be recorded for each calendar month are,	the cumulative rainfall (mm)	



	the number of days with rainfall more than 10 mm
	the number of days with minimum air temperature less than 0 degrees Celsius
	the number of days with snow lying at 08:00 hours South African Time
	and these measurements: mm
The place where weather is to be recorded (on the Site) is:	The <i>Contractor's</i> Site establishment area
The <i>weather data</i> are the records of past <i>weather measurements</i> for each calendar month which were recorded at:	Port of Ngqura
and which are available from:	South African Weather Service 012 367 6023 or info3@weathersa.co.za.

7	Title	No additional data is required for this section of the <i>conditions of contract</i>.
8	Risks and insurance	
80.1	These are additional <i>Employer's</i> risks	1. Damages to underground services 2. Design variations 3. Contractor might encounter different site conditions 4. Design outputs lesser than anticipated 5. Encroachment into construction footprint (Nursery)
84.1	The <i>Employer</i> provides these insurances from the Insurance Table	
	1 Insurance against:	Loss of or damage to the <i>works</i>, Plant and Materials is as stated in the Insurance policy for Contract Works/ Public Liability.
	Cover / indemnity:	to the extent as stated in the insurance policy for Contract Works / Public Liability



The deductibles are:		as stated in the insurance policy for Contract Works / Public Liability
2	Insurance against:	Loss of or damage to property (except the <i>works</i>, Plant and Materials & Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) arising out of or in connection with the performance of the Contract as stated in the insurance policy for Contract Works / Public Liability
	Cover / indemnity	Is to the extent as stated in the insurance policy for Contract Works / Public Liability
	The deductibles are	as stated in the insurance policy for Contract Works / Public Liability
3	Insurance against:	Loss of or damage to Equipment (Temporary Works only) as stated in the insurance policy for contract Works and Public Liability
	Cover / indemnity	Is to the extent as stated in the insurance policy for Contract Works / Public Liability
	The deductibles are:	As stated in the insurance policy for Contract Works / Public Liability
4	Insurance against:	Contract Works SASRIA insurance subject to the terms, exceptions and conditions of the SASRIA coupon
	Cover / indemnity	Cover / indemnity is to the extent provided by the SASRIA coupon
	The deductibles are	The deductibles are, in respect of each and every theft claim, 0,1% of the contract value subject to a minimum of R2,500 and a maximum of R25,000.
	Note:	The deductibles for the insurance as stated above are listed in the document titled "Certificate of Insurance: Transnet (SOC) Limited Principal Controlled Insurance."



-
- 84.1 The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is
- The *Contractor* provides these additional Insurances
- The *Contractor* must comply at a minimum with the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.**
- 1 Where the contract requires that the design of any part of the *works* shall be provided by the *Contractor* the *Contractor* shall satisfy the *Employer* that professional indemnity insurance cover in connection therewith has been affected**
 - 2 Where the contract involves manufacture, and/or fabrication of Plant & Materials, components or other goods to be incorporated into the *works* at premises other than the site, the *Contractor* shall satisfy the *Employer* that such plant & materials, components or other goods for incorporation in the *works* are adequately insured during manufacture and/or fabrication and transportation to the site.**
 - 3 Should the *Employer* have an insurable interest in such items during manufacture, and/or fabrication, such interest shall be noted by endorsement to the *Contractor's* policies of insurance as well as those of any sub-contractor**
 - 4 Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R 5 000 000**



		<p>7 The insurance coverage referred to in 1, 2, 3, 4, 5 and 6 above shall be obtained from an insurer(s) in terms of an insurance policy approved by the <i>Employer</i>. The <i>Contractor</i> shall arrange with the insurer to submit to the <i>Project Manager</i> the original and the duplicate original of the policy or policies of insurance and the receipts for payment of current premiums, together with a certificate from the insurer or insurance broker concerned, confirming that the policy or policies provide the full coverage as required. The original policy will be returned to the <i>Contractor</i>.</p>
84.2	The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) caused by activity in connection with this contract for any one event is	<p>Whatever the <i>Contractor</i> requires in addition to the amount of insurance taken out by the <i>Employer</i> for the same risk.</p>
84.2	The insurance against loss of or damage to the works, Plant and Materials as stated in the insurance policy for contract works and public liability selected from:	<p>Principal Controlled Insurance policy for Contract</p>
9	Termination	<p>There is no additional Contract Data required for this section of the <i>conditions of contract</i>.</p>
10	Data for main Option clause	
A	Priced contract with Activity Schedule	<p>No additional data is required for this Option.</p>
11	Data for Option W1	



W1.1	The <i>Adjudicator</i> is	Both parties will agree as and when a dispute arises. If the parties cannot reach an agreement on the <i>Adjudicator</i>, the Chairman of the Association of Arbitrators will appoint an <i>Adjudicator</i>.		
W1.2(3)	The <i>Adjudicator nominating body</i> is: If no <i>Adjudicator nominating body</i> is entered, it is:	The Chairman of the Association of Arbitrators (Southern Africa) the Association of Arbitrators (Southern Africa)		
W1.4(2)	The <i>tribunal</i> is:	Arbitration		
W1.4(5)	The <i>arbitration procedure</i> is	The Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)		
	The place where arbitration is to be held is	Johannesburg, South Africa		
	The person or organisation who will choose an arbitrator	The Chairman of the Association of Arbitrators (Southern Africa)		
	- if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is			
X2	Changes in the law	No additional data is required for this Option		
X4	Parent company guarantee	No additional data is required for this Option		
X5	Sectional Completion			
X5.1	The <i>completion date</i> for each <i>section</i> of the <i>works</i> is:	<i>Section</i>	<i>Description</i>	<i>Completion date</i>
		1	Approval of SHE file	07 Dec 2022
		2	Topography and Geotechnical surveys	30 Nov 2022



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	3	Design	12 Jan 2023
	4	Construction area 1	09 Mar 2023
	5	Construction area 2	09 May 2023

X5 & X7 Sectional Completion and delay damages used together

X7.1 Delay damages for late
X5.1 Completion of the *sections* of the *works* are:

Section	Description	Amount per day
1	The delay damages will be capped at 10% of the total contract.	R7500.00
2	The delay damages will be capped at 10% of the total contract.	R7500.00

X13 Performance bond

X13.1 The amount of the performance bond is **5% of the total of the Prices**

X16 Retention

X16.1 The retention free amount is **Nil**

The retention percentage is **10% on all payments certified.**

X18 Limitation of liability



X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	The deductible of the relevant insurance policy
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:	The cost of correcting the Defect
X18.3	The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to:	The Total of the Prices
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	5 years after Completion of the whole of the works
X18.5	The <i>end of liability date</i> is	
Z	<i>Additional conditions of contract are:</i>	
Z1	Additional clause relating to Performance Bonds and/or Guarantees	
Z1.1		The Performance Guarantee under X13 above shall be an irrevocable, on-demand performance guarantee, to be issued exactly in the form of the Pro Forma documents provided for this purpose under C1.3 (Forms of Securities), in favour of the <i>Employer</i> by a financial institution reasonably acceptable to the <i>Employer</i>.



Z2 Additional clauses relating to Joint Venture

Z2.1 Insert the additional core clause 27.5

27.5. In the instance that the *Contractor* is a joint venture, the *Contractor* shall provide the *Employer* with a certified copy of its signed joint venture agreement, and in the instance that the joint venture is an 'Incorporated Joint Venture,' the Memorandum of Incorporation, within 4 (four) weeks of the Contract Date.

The Joint Venture agreement shall contain but not be limited to the following:

- **A brief description of the Contract and the Deliverables;**
- **The name, physical address, communications addresses and domicilium citandi et executandi of each of the constituents and of the Joint Venture;**
- **The constituent's interests;**
- **A schedule of the insurance policies, sureties, indemnities and guarantees which must be taken out by the Joint Venture and by the individual constituents;**
- **Details of an internal dispute resolution procedure;**
- **Written confirmation by all of the constituents:**
 - i. **of their joint and several liabilities to the *Employer* to Provide the Works;**
 - ii. **identification of the lead partner in the joint venture confirming the authority of the lead partner to bind the joint venture through the *Contractor's* representative;**



iii. Identification of the roles and responsibilities of the constituents to provide the Works.

- Financial requirements for the Joint Venture:

iv. the working capital requirements for the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the constituents from time to time;

v. the names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.

Z2.2

Insert additional core clause 27.6

27.6. The *Contractor* shall not alter its composition or legal status of the Joint Venture without the prior approval of the *Employer*.

Z3 Additional obligations in respect of Termination

Z3.1

The following will be included under core clause 91.1:

In the second main bullet, after the word 'partnership' add 'joint venture whether incorporate or otherwise (including any constituent of the joint venture)' and

Under the second main bullet, insert the following additional bullets after the last sub-bullet:

- commenced business rescue proceedings (R22)
- repudiated this Contract (R23)



Z3.2	Termination Table	<p>The following will be included under core clause 90.2 Termination Table as follows:</p>
Z3.3		<p>Amend "A reason other than R1 – R21" to "A reason other than R1 – R23"</p> <p>Amend "R1 – R15 or R18" to "R1 – R15, R18, R22 or R23."</p>
Z4	Right Reserved by the Employer to Conduct Vetting through SSA	
Z4.1		<p>The <i>Employer</i> reserves the right to conduct vetting through State Security Agency (SSA) for security clearances of any <i>Contractor</i> who has access to National Key Points for the following without limitations:</p> <ol style="list-style-type: none"> 1. Confidential – this clearance is based on any information which may be used by malicious, opposing or hostile elements to harm the objectives and functions of an organ of state. 2. Secret – clearance is based on any information which may be used by malicious, opposing or hostile elements to disrupt the objectives and functions of an organ of state. 3. Top Secret – this clearance is based on information which may be used by malicious, opposing or hostile elements to neutralise the objectives and functions of an organ of state.



Z5 Additional Clause Relating to Collusion in the Construction Industry

Z5.1 The contract award is made without prejudice to any rights the *Employer* may have to take appropriate action later with regard to any declared tender rigging including blacklisting.

Z6 Protection of Personal Information Act

Z6.1 The *Employer* and the *Contractor* are required to process information obtained for the duration of the Agreement in a manner that is aligned to the Protection of Personal Information Act.



Z7 Local Production and Content Obligations

Z7.1

In terms of Local Production and Content (SBD 6.2), Annexure A and Annexure C: Declaration Certificate of Local Production and Content, the *Contractor* has undertaken to fulfil its obligations of the Local Production and Content not limited to the following designated sectors:

- Kiosks - 100%
- Stainless Steel Couplers 100%
- Fasteners (stainless steel bolts & nuts) - 100%
- Polyvinyl Chloride (PVC) Pipes 100%
- Low Voltage Cables 90%
- Medium Voltage Cables 90%

Z7.2

The *Contractor* is required to note that the *Employer*, the Department of Trade, Industry and Competition [DTIC] and/or the body appointed by the DTIC as the verification authority for local content may conduct compliance audits with regard to the Local Production and Content requirements as prescribed in Regulation 8 of the Preferential Procurement Regulations, 2017 issued in terms of the Preferential Procurement Policy Framework Act no. 5 of 2000.

Z7.3

The *Contractor* will be required to continuously update Declarations C, D and E of the Local Production and Content Declaration commitments with the actual local content values for the duration of the contract.



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2022/08/0868/9744/RFP

DESCRIPTION OF THE WORKS: APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD
ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR A
PERIOD OF FIVE (5) MONTHS

The *Contractor* shall report to the *Employer* on a monthly basis during the term of the Contract, the amounts spent on Local Production and Content for the designated sectors for the duration of the contract.

Z7.4

Breach of Local Production and Content commitments provides the *Employer* cause to terminate the contract.



C1.2 Contract Data

Part two - Data provided by the *Contractor*

The tendering *Contractor* is advised to read both the NEC3 Engineering and Construction Contract - June 2005 (with amendments June 2006 and April 2013) and the relevant parts of its Guidance Notes (ECC3-GN) in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 Guidance Notes.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name):	
	Address	
	Tel No.	
	Fax No.	
11.2(8)	The <i>direct fee percentage</i> is	%
	The <i>subcontracted fee percentage</i> is	%
11.2(18)	The <i>working areas</i> are the Site and	
24.1	The <i>Contractor's</i> key persons are:	
	1 Name:	
	Job:	
	Responsibilities:	
	Qualifications:	
	Experience:	
	2 Name:	
	Job	
	Responsibilities:	
	Qualifications:	
	Experience:	



		CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .		
11.2(14)	The following matters will be included in the Risk Register			
31.1	The programme identified in the Contract Data is			
A	Priced contract with activity schedule			
11.2(20)	The <i>activity schedule</i> is in			
11.2(30)	The tendered total of the Prices is	(in figures) (in words), excluding VAT		
	Data for Schedules of Cost Components	<i>Note "SCC" means Schedule of Cost Components starting on page 60 of ECC, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC.</i>		
A	Priced contract with activity schedule	Data for the Shorter Schedule of Cost Components		
41 in SSCC	The percentage for people overheads is:	%		
21 in SSCC	The published list of Equipment is the last edition of the list published by			
	The percentage for adjustment for Equipment in the published list is	% (state plus or minus)		
22 in SSCC	The rates of other Equipment are:	Equipment	Size or capacity	Rate



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2022/08/0868/9744/RFP

DESCRIPTION OF THE WORKS: APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD
ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR A
PERIOD OF FIVE (5) MONTHS

61	in	The hourly rates for Defined Cost of design outside the Working Areas are	Category of employee	Hourly rate
62	in	The percentage for design overheads is	%	
63	in	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:		

22 in SSCC	The rates of other Equipment are:	Equipment	Size or capacity	Rate
61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are	Category of employee		Hourly rate
62 in SSCC	The percentage for design overheads is	%		



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2022/08/0868/9744/RFP

DESCRIPTION OF THE WORKS: APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR A PERIOD OF FIVE (5) MONTHS

63 in SSCC	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:	

PART 2: PRICING DATA

Document reference	Title	No of pages
C2.1	Pricing instructions: Option A	
C2.2	Activity Schedule	

C2.1 Pricing Instructions: Option A

1. The *conditions of contract*

1.1. How the contract prices work and assesses it for progress payments

Clause 11 in NEC3 Engineering and Construction Contract, June 2005, (with amendments June 2006 and April 2013) (ECC) Option A states:

Identified and defined terms

- 11 (20) The Activity Schedule is the *activity schedule* unless later changed in accordance with this contract.
- 11.2 (22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events.
- (27) The Price for Work Done to Date is the total of the Prices for
- each group of completed activities and
 - each completed activity which is not in a group
- A completed activity is one which is without Defects which would either delay or be covered by immediately following work.
- (30) The Prices are the lump sums for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

1.2. Measurement and Payment

- 1.2.1 The Activity Schedule provides the basis of all valuations of the Price for Work Done to Date, payments in multiple currencies, price adjustments for inflation and general progress monitoring.
- 1.2.2 The amount due at each assessment date is based on **completed activities and/or milestones** as indicated on the Activity Schedule.
- 1.2.3 The Activity Schedule work breakdown structure provided by the *Contractor* is based on the Activity Schedule provided by the *Employer*. The activities listed by the *Employer* are the minimum activities acceptable and identify the specific activities which are required to achieve Completion. The activity schedule work breakdown structure is compiled to the satisfaction of the *Project Manager* with any additions and/or amendments deemed necessary.
- 1.2.4 The *Contractor's* detailed Activity Schedule summates back to the Activity Schedule provided by the *Employer* and is in sufficient detail to monitor completion of activities related to the Accepted Programme in order that payment of completed activities may be assessed.

- 1.2.5 The short descriptions in the Activity Schedule are for identification purposes only. All work described in the Works Information is deemed included in the activities.
- 1.2.6 The Activity Schedule is integrated with the Prices, Accepted Programme and where required the forecast rate of payment schedule.
- 1.2.7 Activities in multiple currencies are separately identified on both the Activity Schedule and the Accepted Programme for each currency.
- 1.2.8 The tendered total of the prices as stated in the Contract Data is obtained from the Activity Schedule summary. The tendered total of the prices includes for all direct and indirect costs, overheads, profits, risks, liabilities and obligations relative to the Contract.

C2.2 Activity Schedule

The Tenderer details his Activity Schedule below or makes reference to his Activity Schedule and attaches it to this schedule.

The details given below serve as guidelines only and the Tenderer may split or combine the activities to suit his particular methods.

Activity No	Activity Description	Unit	Rate	Quantity	Price of each activity
A1	Topographical survey for Area 1.				
1.1.1	Establish permanent survey control points and represent the original ground line accurately and produce a comprehensive and detailed engineering survey from which an accurate horizontal and vertical alignment can be derived for design purposes. The contractor to submit all survey reports data and all the survey related documents to the Employer	sum		1.00	
1.2	Topographical survey for Area 2.				
1.2.1	Establish permanent survey control points and represent the original ground line accurately and produce a comprehensive and detailed engineering survey from which an accurate horizontal and vertical alignment can be derived for design purposes. The service provider to submit all survey reports data and all the survey related documents to the Employer	sum		1.00	
1.3	Geotechnical Survey for Area 1.				

1.3.1	Plan and conduct a comprehensive geotechnical investigation of the development area. The service provider to submit the full Geotech report with all laboratory results to the employer for the purpose of archiving	sum		1.00	
1.4	Geotechnical Survey for Area 2.				
1.4.1	Plan and conduct a comprehensive geotechnical investigation of the development area. The service provider to submit the full Geotech report with all laboratory results to the employer for the purpose of archiving	sum		1.00	
1.5	Detail Design of Parking Area 1 and 2				
1.5.1	Preparation of Civil design and electrical design criteria, conceptual and detailed design drawings, and documents of the parking facilities in accordance with the relevant design standards and codes of practice, refer to Section 2.2. the contractor also to refer deliverables as per ECSA guideline scope	sum		1.00	
1.6	Construction of Area 1 parking bays				
1.6.1	Construction of parking bays including all accessories. The contractor to prepare the Method statement for the construction of the parking facilities clearly indicating timelines and how normal business interruptions shall be avoided.	Sum		1.00	
1.7	Construction of Area 2 parking bays				

1.7.1	Construction of parking bays including all accessories. The contractor to prepare the Method statement for the construction of the parking facilities clearly indicating timelines and how normal business interruptions shall be avoided. The contractor to submit comprehensive as built drawings to the employer at project hand over.	sum		1.00	
1.8	Supply and installation of electrical works	sum		1.00	
1.8.1	Construction of parking bays including all accessories. The contractor to prepare the Method statement for the electrical works of the parking facilities clearly indicating timelines and how normal business interruptions shall be avoided. The contractor to submit comprehensive and detailed as built drawings indicating all electrical layouts and detail to the employer at project hand over.	sum		1.00	
Total Price to be carried over to the Form of Offer & Acceptance					

PART 3: C3 WORKS INFORMATION FOR PARKING BAYS AT EMENDI

Document reference	Title	No. of pages
	Cover Pages, Contents and Glossary	5
C3.1	Employer's Works Information	40
C3.2	Annexure 1 – Employer's Drawing	1
C3.3	Annexure 2 – CAD Standard (ENG-STD-0001)	1
C3.4	Annexure 3 – Contractor Documentation Submission Requirement	1
	Total number of pages	48

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Glossary

The definitions listed below apply to this document.

Abbreviations	Definition
CAD	Computer Aided Design
CEMP	Construction Environmental Management Plan
CDS	Contractor Documentation Schedule
DWG	AutoCAD Design File (file format/extension)
H&S	Health and Safety
m	Metre
MSL	Mean Sea Level
PPE	Personal Protective Equipment
SES	Standard Environmental Specification
SHEQ	Safety, Health, Environment and Quality (Management System)
SOW	Scope of Works
TNPA	Transnet National Port Authority
Transnet	Transnet SOC Ltd
VAT	Value Added Tax
WGS	World Geodetic System

Wherever the following words or phrases are used in the listed or referenced documentation, they reinterpreted in this Contract as follows:

Abbreviations	Definition
'Transnet SOC Limited' in the context of: owner, occupier or user of the new asset. insurer of the Services. paymaster (i.e., Transnet shall pay); a party to the contract.	the Employer.
'Transnet SOC Limited' in the context of: a duty or procedure to be performed in the administration of the contract.	the Employer's Agent as determined by the conditions of contract.
'TFR', 'TRE', 'TNPA' or 'TPT' in the context as operator and owner, occupier or user of the new asset	the Employer.
'main specification' as referred to in the Employer's standard specifications.	This Scope of Services.
accepted by (or to the satisfaction of) the Employer's Agent, Engineer or the Project Manager.	accepted by the Employer's Agent.
a duty, procedure, decision or action of the Engineer or the Project Manager and or the Superintendent, client representative, Site Supervisor.	an action of the Employer's Agent depending on the context. Clause X10 of the Secondary Clauses determines what the actions of each are.

1. Executive Summary

1.1. Background

Transnet National Ports Authority's head office has recently relocated from Parktown (in Johannesburg) and Kingsmead (in Durban) to eMendi building at the Port of Ngqura. The eMendi building was commissioned in April 2017. However, there was outstanding scope that could not be done due to budget constraints. Parking Bays were among the outstanding scope. The optimum occupation capacity of the building has been estimated at 372 occupants. There has been limited parking bays since the relocation of the Head office employees and the need for additional parking bays has necessitated. There are currently 135 parking bays including basement parking. There are thus, 215 additional parking bays required. Therefore, the eMendi Administration Building shall have a total of 350 parking bays for the 372 occupants.

1.2. Employer Objective

The Employer would like to appoint a service provider (hereon Contractor) to provide detailed design services and construction of the additional parking bays for the eMendi Building, at the Port of Ngqura. The Contractor shall also conduct a Topographic Survey and a Geotechnical Engineering Study for the purpose of confirming and mapping out the existing topography and determining the geotechnical conditions within the precinct and inform on a suitable pavement structure.

The Employer's works info and/or deliverables for the design and construction of the additional parking bays includes and is not limited to the following:

- Adequate site reconnaissance including conducting a topographic and geotechnical engineering survey studies.
- The design and construction of the required parking bays.
- Provision for adequate stormwater management that ties into the existing system in the precinct.
- Provision of user-friendly facilities that provide ease of access to the eMendi Building eliminating/accommodating all possible pedestrian desired lines.
- Provision for adequate future proofing of the facilities (i.e., provision of electrical and/or ICT sleeves to support the related infrastructure).

1.3. Project Location and Conditions

The site is located at the Port of Ngqura, east of the TNPA Admin building. The first site (Area 1) of the proposed vehicle parking area is located next to the substation building, while the second site (Area 2) is on the recreational area which is situated adjacent to the Admin building, south of the existing parking area. Refer to the locality map in Figure 1 showing Area 1 and Area 2 of the proposed parking site.

The port is zoned as "Harbour Zone" under the Nelson Mandela bay town planning ordinance and has a height restriction of 25m. The permitted activities in the "Harbour Zone" are limited to port related activities only.



Figure 1: Locality Map for the location of the eMendi Admin Building

The aerial view above in Figure 1 shows the location of the eMendi Admin Building precinct as well as the adjacent allocated site for the additional parking facilities. The eMendi Building lies east of the Coega Development Corporation (CDC) and north west of the Ngqura Container Terminal.

2. Description of Works

Notwithstanding any detail of specific activities provided in the Works Information and Employer's Requirements, it is the responsibility of the Employer's Agent to ensure that the works adhere to the guidelines contained herein with same being fit for the purpose for which they are intended. These Employer's Requirements are accordingly not to be construed as constituting instructions to the Contractor on how to develop and execute the works but are indicative guidelines for the purpose of achieving the Employer's objectives. If any specific activity is not specified or included in the Employer's Requirements, same shall not be deemed to be an exclusion of such activity. The Contractor shall undertake whatever activities are necessary to meet their contractual requirements.

2.1. Civil Engineering Scope

2.1.1. Works Deliverables

Table 1 below shows a summary of the list of deliverables required from the Contractor for the purpose of meeting the Employer's objectives.

Table 1: List of Employer's Outcomes for Civil Works

Outcome	Details/Deliverables
Topographic Survey	The purpose of this survey is to establish permanent survey control points and to represent the original ground line accurately and to produce a comprehensive and detailed engineering survey from which an accurate horizontal and vertical alignment can be derived for design purposes and setting-out data for a georeferenced detailed design. Refer to Annexure 1 for Employer's drawing showing the recommended survey area. The Contractor shall submit all survey reports, DTM data (.csv and TOT formats) and all the survey related documents to the Employer's Agent for the purpose of archiving.
Geotechnical Investigation	The Contractor shall plan and conduct a comprehensive geotechnical investigation of the development area. The results of the geotechnical investigation shall form the basis of the Contractor's design inputs. The

Outcome	Details/Deliverables
	Contractor shall submit the full Geotechnical report with all the related laboratory results to the Employer's Agent for the purpose of archiving.
Design Services	The design services shall include but not limited to the preparation of civil design criteria, conceptual and detailed design drawings (with adequate data for the execution phase) and documents of the parking facilities in accordance with the relevant design standard and codes of practice. Refer to Section 2.1.2 for further details.
Construction	The Contractor shall prepare the Method Statement for the construction of the parking facilities clearly indicating timelines and how normal business interruptions shall be avoided or minimized during execution of the works.
As-Builts	The Contractor shall submit comprehensive and detailed As-Built drawings to the Employer's Agent at project hand-over.

2.1.2. Design Services

The Employer has not designed for any of the works required. The Contractor shall therefore undertake full design responsibility for the total design solution of the new parking facilities. The main parts of the works which the Contractor is to undertake shall be the Detailed Design phase and Execution phase deliverables. The Contractor shall submit all detailed design drawings to Employer's Agent for acceptance prior to execution stage. The Contractor's ECSA registered civil engineering designer shall approve all design drawings and documentation prior submission to the Employer's Agent. The following conditions shall be considered in preparing the detailed design of the parking facilities:

- The design shall meet the required parking space of 215 parking bays.
- The parking shall have pedestrian sidewalks for safe thoroughfare in and out of the eMendi Administration Building.
- The parking facilities shall have adequate landscaping and aesthetics.
- The parking facilities shall address stormwater drainage and shall be tied into the existing system without potential ponding on the existing or new facilities.
- The parking facilities shall have a pavement structure designed to withstand expected traffic loads for a design period no less than 20 years.

-
- The facilities shall be future proof (i.e., include relevant infrastructure that may be needed like electrical/comms sleeves and cable chambers).
 - The design shall ensure that the parking meets the minimum requirements for fire emergencies and any type of evacuation emergencies.

The Contractor grants the Employer a licence to use the copyright in all design data presented to the Employer in relation to the works for any purpose in connection with the construction, re- construction, refurbishment, repair, maintenance and extension of the works with such licence being capable of transfer to any third party without the consent of the Contractor. The Contractor vests in the Employer full title guarantee in the intellectual property and copyright in the design data created in relation to all works, irrespective of where or what those works may be.

2.1.3. Execution

The following considerations shall be made in the construction phase:

- A Method Statement and construction Schedule shall be submitted to the Employer timeously (as per Employer's Agent recommendation) for approval prior to execution.
- The Contractor shall minimize disruptions of business operations in and around the eMendiAdmin precinct.
- The Contractor shall ensure that a quality assurance plan is in place and shall appoint a Site Agent who shall report to the Employer's Agent during the execution phase.
- Contractor shall, upon completion, furnish the Employer's Agent with As-built data in native format.

The following procedures relating to temporary works, site services and construction constraints shall be taken into consideration. The Contractor shall:

- Comply with all Site entry, permits and regulations as required by the Employer.
- Ensure that all its personnel on site are inducted and comply to Site safety regulations in accordance with the OHSA Act.
- Keep daily records of its personnel engaged on the Site and Working Areas with access to such daily records for inspection by the Employer's Agent at all reasonable times.
- Provide progress photographs at time intervals stipulated by the Employer's Agent in digital format (PDF format) conveyed by email.

-
- Keep daily records of his Equipment used on Site and the Working Areas (distinguishing between owned and hired Equipment) with access to such daily records available for inspection by the Employer's Agent at all reasonable times.
 - Adapt facilities (provided by Employer) for use, then the make good and provide full reinstatement to the land (including all apparatus of the Employer and Others in, on or under the land) and surrounding areas to its original standard upon dismantling of such facilities and hand-back to the Employer.

2.1.4. Design Standards

The design shall be undertaken using the latest revision of applicable SANS and other relevant standard specifications. The Contractor shall employ a registered Professional Engineer to review and sign off all design documents and drawings submitted to the Employer for approvals. The design shall be such that it is built by others to satisfy the functional and serviceability requirements and be cost-effective and safe. Sound Engineering judgment shall be exercised in applying these criteria to the system and its components. The Contractor shall communicate with the Employer to coordinate all designs.

2.2. Electrical Engineering Scope

The Contractor shall undertake the design, supply, delivery, installation and commissioning of Electrical infrastructure and associated works for the Port of Ngqura Parking area. The scope of works and deliverables shall include:

2.2.1. Works Deliverables

Table 2 below shows a summary of the list of deliverables required from the Contractor for the purpose of meeting the Employer's objectives.

Table 2: List of Employer's Outcomes for Electrical Works

Outcome	Details/Deliverables
Design Services	The design services shall include but not limited to the preparation of Electrical design criteria, conceptual and detailed design drawings and documents of the parking facilities in accordance with the relevant design standard and codes of practice. Refer to Section 2.2.2 for further details.
Construction	The Contractor shall prepare the Method Statement for the construction of the all electrical works in the parking facilities clearly indicating timelines and how normal business interruptions shall be avoided or minimized during execution of the works.
As-Builts	The Contractor shall submit comprehensive and detailed As-Built drawings indicating all electrical layouts and detail drawings to the Employer's Agent at project hand-over.

2.2.2. Design Services

The Employer has not designed for any of the works required. The Contractor shall therefore undertake full design responsibility for the total electrical design solution of the new parking facilities. The main parts of the works which the Contractor is to undertake shall be the Detailed Design phase and Execution phase deliverables. The Contractor shall submit all detailed design drawings to Employer's Agent for acceptance and commission prior to execution stage. The Contractor's ECSA registered electrical engineering designer shall approve all the electrical design drawings and documents prior submission to the Employer's Agent. The following conditions shall be considered in preparing the detailed design of the parking facilities:

- Detailed design for Area Lighting, including simulations and calculations.
- Cable management system: these may include cable ways, cable sleeves, trenching details, cable support systems, piping system and pipe support system and selection of fasteners and fastening system for these items.

-
- Modification to the existing electrical infrastructure, addition of switchgear in the existingsubstation, Electrical Distribution boards and kiosks.
 - Design of new electrical distribution kiosks.

2.2.3. Execution

Area Lighting - Luminaires

The Contractor shall design, simulate, and propose two (2) Photometric design layouts (including streetlight LED fixtures, pole specifications, foundations and lighting reticulation) for each of the two

(2) parking areas for the Employer's Agent's acceptance. The Contractor shall ensure compliance to port statutory requirements for lighting and ensure compatibility with existing electrical network, infrastructure and proposed parking layouts.

All luminaires shall be LED's and mounted to give a uniform light distribution on the ground within the respective parking area. Luminaires shall be manufactured from materials which will not degrade from ultra-violet light or corrosion. All control gear shall be mounted in a compartment attached to the luminaire. The control gear and the compartment shall be adequately rated to operate in the high ambient temperatures in Port of Ngqura area, without undue ageing. Plastic trays, brackets and retaining clips will not be accepted.

The Contractor shall submit a material list and technical specification for all proposed streetlights pole foundations, streetlight poles and LED light fixtures for Employer's Agent's approval prior to placement of orders.

Existing Distribution Boards

The Contractor shall make modifications to existing distribution board inside eMendi building LV room and substation to accommodate new supply to parking areas respectively. The design and modifications to existing distribution boards shall include be inclusive of all associated switchgear, din rails, gland plates and works. The works shall be constructed according to Transnet specification TPD-002-DBSPEC and Electrical drawing.

The electrical installation of Low Voltage Kiosks shall be carried out by a registered Master Electrician. The Contractor shall provide certificates of compliance (COC's) after testing and the completion of installation.

The Contractor is required to test the installation in the presence of the Employer's Engineer and issue compliance certificates for the electrical installation.

Low Voltage Kiosks

The Contractor shall design, supply, deliver and install two (2) LV Kiosks. The Kiosks shall be constructed according to Transnet specification TPD-002-DBSPEC and Electrical drawing. The distribution kiosks shall be inclusive of all switchgear, din rails, gland plate and shall be equipped with 30% spare ways.

The electrical installation of Low Voltage Kiosks shall be carried out by a registered Master Electrician. The Contractor shall provide certificates of compliance (COC's) after testing and the completion of installation.

The Contractor is required to test the installation in the presence of the Employer's Engineer and issue compliance certificates for the electrical installation.

Low Voltage Cable Reticulation

The Contractor shall design, supply, deliver and install similar or equal approved to Aberdare, Low Voltage cables for the entire installation. The design shall be based on agreed upon cable trench route between Employer's Agent and the Contractor during site visit. The Contractor shall design cable based on existing site conditions, distances and load specification for streetlights. The cable shall be installed in adequately sized PVC sleeves via allocated pipe and chamber and terminated in accordance to the cable manufacture's specification and in adherence to Transnet specification TPD- 003-CABLESPEC. The Contractor shall ensure that the manufacturer's recommendations regarding the minimum cable bending radius is adhered to when installing the cable.

The Contractor shall design, supply, deliver, install and terminate Low Voltage cable, 3 CORE XLPE insulated, SWA, PVC sheathed, 400V Low Voltage Cable from eMendi Substation to Low Voltage kiosk in parking Area 1.

The Contractor shall supply, deliver, reticulate, install and terminate Low Voltage cable, 3 CORE XLPE insulated, SWA, PVC sheathed, 400V Low Voltage Cable from eMendi Building LV room to Low Voltage kiosk in parking Area 2.

The Contractor shall test and commission this installation in the presence of the Employer's Agent and issue all compliance certificates associated with this installation in adherence to SANS10142-1, TPD-003-LOW VOLTAGE SPEC, OHS Act 85 of 1993 and OEM specifications (Original Equipment Manufacturer) to the Employer's Agent through Document Control.

All associated medium voltage switching, and control shall only be undertaken by Transnet National Ports Authority (TNPA) electrical personnel. The Contractor shall advise the Employer's Agent in writing three (3) weeks prior to switching.

Earthing and Lightning Protection

The Contractor shall supply and install lightning protection to the medium mast and lighting poles in accordance with specification No. TPD: 004-EARTHINGSPEC; "Transnet Projects Specification for lightning protection and earthing". This component of work shall be undertaken by a specialist earthing and lightning protection Contractor.

The mast shall be provided with a M12 earth bolt welded to the mast with stainless steel nuts. The incoming electrical supply earth conductor and all other electrical equipment shall be connected to the earth bolt.

Earthing electrode and couplers shall be manufactured from stainless steel and in accordance to SABS 1063.

The earth electrode resistance shall not be more than 2 ohms.

Testing and Commissioning

The Contractor shall test the entire installation, including but not limited to the LV installation and the lighting installation as per SANS 10142, part 1 and hand over all relevant test certificates to the Employer's Agent for acceptance. The Contractor shall hand over LV certificate of compliance as per the OHS Act of 85 and SANS 10142-1 and SANS1042-2 for the installation.

2.2.4. Design Standards

Standard Work, Equipment and Materials

The electrical installation shall conform to the requirements of the latest edition and amendments of SANS 10142-1 Code of Practice for the Wiring of Premises Low-voltage installation and any additional requirements thereto, described in this specification.

All equipment and material used shall be of high quality and the work shall be of a high standard of workmanship carried out by qualified staff under proper supervision by experienced and competent officers.

All equipment and material shall comply with the relevant National or International standard specifications. Where equipment does not comply, it shall be submitted to the TNPA electrical engineer for approval prior to installation. All installation, testing and termination must be approved by the TNPA Engineer prior to commissioning.

Service Conditions

The equipment shall be designed and rated for continuous operation under the following conditions:

Altitude	0 – 1800m above sea level
Ambient temperature	-3°C to +40°C
Relativity humidity	As high as 86%
Lightning conditions	Severe, with a maximum lightning ground flash density of 2.0 lashes per km ² per annum
Atmosphere	Atmosphere will be of a highly saline and dust-laden nature

Electrical Conditions

- The Medium Voltage system of supply will be three phase, 3 – wire system, 50Hz alternating current (AC) at a nominal voltage of 11kV.
- The voltage may vary within the range of 95% to 105% of the nominal and all equipment installed shall be suitably rated.
- The low voltage system of supply will be three phase 400 V, 4 wire, and 50 Hz alternating current.

- The voltage may vary within the range of 95% to 105% of the nominal and all equipment installed shall be suitably rated.

Lightning Conditions

- All lightning protection equipment offered shall be rated to withstand the following conditions:
- Current: The peak lightning current and its rate of rise shall be regarded as severe when $I_{max} = 200kA$.
- Voltage: The highest cloud potential shall be assumed to be more than 100MV, where; $Q = CV$, where Q is assumed at 100C and C to be $10^{-7} F$

TNPA Specifications

The following publications and specifications (latest edition) shall apply:

TPD-001-EL&PSPEC	Technical specification for the supply and installation of electrical lighting and power in buildings other than dwelling houses.
TPD-002-DBSPEC	Technical specification for the design and manufacturing of low voltage distribution boards.
TPD-003-CABLESPEC	Technical specification for the installation of medium and low voltage cables.
TPD-004-EARTHINGSPEC	Technical specification for the design, supply and installation of lightning protection and earthing for buildings and structures.

3. Deliverables Applicable to ECSA Guidelines Scope

The Contractor shall liaise with the Employer's Agent and their areas of responsibility as included in the Engineering Professions Act 2000, published by the ECSA (and not limited to), shall be to achieve the following key deliverables on the Programme and this task:

- Agree documentation programme with Employer.
- Attend design meetings.

-
- Establish the concept design criteria.
 - Prepare initial concept design and related documentation.
 - Advise the Employer regarding further surveys, analyses, tests and investigations which maybe required.
 - Establish regulatory authorities' requirements and incorporate into the design.
 - Refine and assess the concept design to ensure conformance with all regulatory requirementsand consents.
 - Establish access, utilities, services and connections required for the design.
 - Prepare process designs (where required), preliminary designs, and related documentationfor approval by authorities and client and suitable for costing.
 - Provide cost estimates.
 - Liaise, co-operate and provide necessary information to the Employer, and other engineersinvolved.

All documentation shall be in "New Engineering Contract" NEC3 format and shall provide as a minimum the following deliverables:

- Site Information.
- Design criteria.
- Concept engineering design.
- Schedule of required surveys, tests and other investigations and related reports.
- Process design (All the layouts shall, required space and or dimensions, control andinstrumentation, and all necessary associates).
- Ready for construction engineering drawings.
- Construction Works Information.
- Construction Activity schedule to be approved by Employer.
- Construction management plan.
- Final As built drawings at handover/commissioning of the project.

The Contractor shall carry out this Task in accordance with the applicable Clause 2 (Guideline Scope of Services) of the latest provisions of the Guidelines Scope of Service and Tariff of Fees for Persons Registered in terms of the Engineering Professions Act 2000, published by the Engineering Council of South Africa (ECSA):

- Governing Codes, Standards and Specifications.

-
- All work done as part of this project must take cognizance of and incorporate where relevant, all Transnet norms and standards.
 - The corporate governance requirements will extend to the elements relevant to the execution of the work. This will entail conformance to the established project procedures and controls relevant to design, resource planning for the work, document configuration controls etc.

4. Construction

4.1. General Works and Methodology

Construction of the additional parking bays at the eMendi Administration Building is envisaged to involve the following disciplines, namely:

- Civil Engineering
- Electrical Engineering
- Topographic Survey
- Geotechnical Engineering

Construction Methodology

The Contractor is required to produce a construction methodology. In addition to the standard deliverables for the document the construction methodology will play a key role to ensure successful execution of this project. Once the construction methodology is in place it is envisaged that the works will have the following high-level flow.

- Establishment of site, approval of safety file, QCP's and any other necessary work permits/documentation.
- Procurement/supply of all necessary items/services required to perform the works inclusive of any site investigations.
- Construction works.
- Any testing and commissioning that may be required.
- Handover of data books and as-built drawings.

4.2. Temporary Works, Site Services and Construction Constraints

4.2.1. Information to be Obtained from Site

Prospective Contractors shall visit the Site of the proposed Works and acquaint themselves with the nature of the works, the conditions under which the work is to be performed; the means of access to the site and in general with all matters that may influence or affect the contract. Contractors shall be deemed to have allowed in their tender for any additional cost to be involved due to the foregoing, as no claims for any extras in connection with the position or nature of the work will be entertained.

4.2.2. Employer's Site Entry and Security Control, Permits and Site Regulations

The Contractor complies with the Employer's Site entry and security control, permits, and Site regulations. The Contractor shall take out temporary entry permits for all staff working within the eMendi Admin Building precinct. All costs incurred shall be borne by the Contractor or his staff. The Contractor is required to produce an inventory of material, plant and equipment when entering and exiting TNPA premises. The Contractor shall not be permitted to remove TNPA material, plant and equipment without a permit issued by the Employer's Agent.

4.2.3. Restrictions to access on Site, roads, walkways and barricades

The Contractor is specifically excluded from entering the Employer's Operational Areas which are adjacent to the Site and Working Areas. The Contractor plans and organises his work in such a manner to cause the least possible disruption to the Employer's operations. The Contractor ensures the safe passage of Contractor's traffic to and around the Site and Working Areas at all times this includes providing flagmen, protective barriers, signage, etc. for protection, direction and control of traffic.

The Contractor ensures that any of his staff, labour and Equipment moving outside of his allocated Site and Working Areas does not obstruct the operations works that is being undertaken around the area. The Contractor ensures that all his construction staff, labour, and Equipment remains within his allocated and fenced off construction area. All Contractor's staff and labor complies with Transnet

National Ports Authority (TNPA) operational safety requirements and are equipped with all necessary PPE and high visibility apparel.

4.2.4. Personnel Restrictions on Site; Hours of Work, Conduct and Records

The Contractor keeps daily records (daily site diary) of all people, plant and equipment engaged on the Site and Working Areas (including Sub-Contractors) with access to such daily records available for inspection by the Employer's Agent at all reasonable times (summarized activity and progress for the day must be mentioned).

4.2.5. Materials for Demolition and Excavation

The Contractor has no title to any materials arising from excavation and demolition in the performance of the works with title to such materials remaining with the Employer. The Employer's Agent shall instruct the Contractor how to label, mark, set aside and/or dispose of such materials for the benefit of the Employer.

4.2.6. Co-operating with and Obtaining Acceptance from Others

The Contractor performs the works and co-operates with The Employer (including the agents of the Employer) who operates on Site during the entire duration of the Contract period. The Contractor performs the works and co-operates with Others, of whom the Contractor is to be notified once appointed by the Employer, who operate on Site during the entire duration of the Contract period.

4.2.7. Contractor's Equipment

The Contractor keeps daily records of his Equipment used on Site and the Working Areas (distinguishing between owned and hired Equipment) with access to such daily records available for inspection by the Employer's Agent at all reasonable times. All plant used by the Contractor on site shall be properly maintained and operated. Equipment used is to be intrinsically safe. All vehicles on public roads shall be roadworthy, with the necessary licences and safety requirements. A checklist/register shall be implemented which lists the operators' qualifications and medical records.

4.2.8. Construction Equipment

All equipment to be supplied by the Contractor will comply with the relevant standard specifications. Any tools, test equipment and devices needed for installation, testing and commissioning shall be provided by the Contractor. Where applicable, the equipment used shall be intrinsically safe.

4.2.9. Publicity and Progress Photographs

The Contractor shall not be allowed to take any photographs on Site without proper authorisation from the Employer and publish any photographs unless these have been scrutinised and approved by the Employer. This is mostly to protect the rights of all tenants regarding potential strategic equipment or infrastructure that they may have on Site.

The Contractor shall refrain from making any statements in the media or engaging with the media on any matter relating to this project, without the express written notification and consent of the Employer. The Contractor may be required to provide progress photographs. Detailed progress will be recorded in the site diary and reflected and updated weekly on the Contractor's construction schedule.

4.2.10. Facilities Provided by the Employer to the Contractor

Access

Work Sites will be made available, free of charge, to the Contractor for the duration of the contract. The Employer will not provide any security for the works for the duration of the contract.

Contractors Site Camp

The Contractor may establish a site camp in the location to be confirmed by the Employer prior to commencement of the works.

The Contractor shall ensure that this area has a suitable continuous security fence and the necessary access gate(s). The area may be used for offices, stores, casting yards, repair shops, concrete batch plants and any other engineering work that may be required for the works. All preparation and fencing done by the Contractor shall be for his account.

The Contractor shall not be required to provide any facilities for the Employer's Agent.

4.2.11. Responsibility of Contractor towards facilities provided by Employer

Wherever the Employer provides facilities (including, inter alia, temporary power, water, waste disposal, telecommunications etc.) for the Contractor's use within the working areas and the Contractor adapts such facilities for use, then the Contractor makes good and provides full reinstatement to the land (including all apparatus of the Employer and 3rd parties in, on or under the land) and surrounding areas to its original standard upon dismantling of such facilities and hand-back to the Employer.

4.2.12. Facilities to be Provided by the Contractor

Contractors Office

The site office shall be located inside the site camp and shall be equipped in terms of the requirements of SANS 1200 AB (SABS 1200 AB) with air-conditioning. The Contractor shall provide 1 x power point in each office.

Contractor's Site Camp

See par. 4.3.10 above.

Existing Facilities

The Contractor will be held responsible for any damage to existing structures, surfacing and facilities caused by the Contractor during the execution of the contract, fair wear and tear excluded, and shall repair it to the satisfaction of the Supervisor on conclusion of the works. For this purpose, a joint inspection with the Supervisor will be carried out prior to occupation of the Site(s) and any existing damage noted.

Water Supply

The Contractor shall provide at his cost, a metered water take-off point and supply line to the Site, if so required. The location for such a take-off point is given in Part C4 – Site Information. The water for either construction/consumption should be tallied.

Electrical supply

The Contractor shall provide at his cost, a metered electrical supply to his site offices and other facilities on the Site, if so required. Particulars of the location for connections to the Site electrical supply and limitations with regards to the use of this supply are given in Part C4 – Site Information. In addition to this an allowance shall also be made for the provision of portable generators for the purposes of providing the works.

Telephones

The Contractor shall make his own arrangements for the installation of telephones, for his use during construction, if required.

Latrines

The Contractor shall supply his own ablution facilities. These shall be according to the environmental regulation.

Housing

Housing on Site or in the Port area will not be permitted.

Sundry

Unless expressly stated as a responsibility of the Employer, as stated under 3.1.14, all residual requirements for the provision of facilities and all items of equipment necessary for the Contractor to provide the works remains the responsibility of the Contractor.

General

Wherever the Contractor provides facilities (mostly for himself under this Contract) and all items of equipment involving, inter alia, offices, accommodation, laboratories, materials storage, compound areas etc., within the working areas, then the Contractor makes good and provides full reinstatement to the land (including all apparatus of the Employer and Others in, on or under the land) and surrounding areas to its original standard, upon dismantling of such facilities and items of Equipment.

4.2.13. Excavations and Associated Water Control - External

It is the responsibility of the Contractor to ensure that all excavations are rendered safe and suitable for construction. The Contractor shall not continue construction in conditions that the Employer's

Agent does not approve of. The Contractor will be required to design the methods of excavation and submit these for acceptance. Excavation may only commence after acceptance is given by the Employer's Agent. The Contractor shall submit a drainage water control design to the Employer's Agent prior to undertaking any water control activity. The Contractor will only be allowed to construct such drainage water control system once gaining the Employer's Agent's acceptance.

4.2.14. Underground Services, Cable and Pipe Trenches and Covers

Prior to any excavation by machine, the Contractor shall make every effort to obtain all relevant and current drawings, indicating the position of potential existing services, via the Employer's Agent. Part C4 – Site Information contains information that is available at time of tender regarding the existing services which are expected to be located at the Site.

Where any existing services are anticipated, the Contractor shall be expected to excavate by hand to expose all such services. Care shall be taken by the Contractor to protect all existing services, unless they are confirmed by the Employer to be abandoned or will be replaced as part of this project. If any existing service is damaged, the Contractor shall be required to carry the cost of the repair of that service. Any such damage must be reported to the Employer's Agent immediately.

Where the Contractor encounters existing underground services or existing services cables or service ducts, the Contractor shall undertake the following:

- Notify the Employer's Agent of the located service as soon as possible.
- Notify the relevant utility owner or officials (i.e., the Employer) as soon as possible.
- Ascertain whether the service is still required and must remain live, or whether the service has been abandoned, via liaison with the Employer.
- If the service is confirmed as abandoned, and upon agreement with the Employer's Agent, the Contractor will be allowed to remove such service.
- If the service is deemed live, it shall be protected by the Contractor and marked-up on the specific Record Drawing for that area or service discipline.

4.2.15. Control of Noise, Dust, Water and Waste

The Contractor shall dispose of all waste products at a relevant registered waste disposal site, to be approved by the Employer's Agent and/or Environmental Officer (EO). Noise and dust control shall

be conducted in accordance with MC9. The control of water during construction, including in particular dewatering of deep excavations, shall be managed and controlled in accordance with the Section 21 of the Water Act, Act 36 of 1998, the General Authorisation (GA 665 of 2013 or the latest at the time) as well as the method statements to be compiled by the Contractor and approved by the Employer's Agent and the EO prior to the commencement of the works. These method statements shall include all measures that are required to remove or mitigate adverse environmental impacts.

4.2.16. Sequences of Construction or Installation

The Contractor shall be responsible for his own construction programme which shall be developed in consultation with the Employer's Agent and be submitted for acceptance to the Employer and Employer's Agent.

4.2.17. Giving Notice of Works to be Covered Up

The Contractor shall notify the Site Agent prior to covering up any of the completed Works, to allow the Site Agent time for inspection of those Works. This shall include, but not be limited to all buried services, ducts and cable sleeves. Hold points for these inspections shall be included on the Contractor's Schedule and Quality Control Plan.

4.2.18. Site Records / Diary

The Contractor shall keep daily records of all construction activities, including records of manpower on Site. Copies of these records shall be forwarded to the Employer's Agent daily.

4.3. Completion, Testing, Commissioning and Defects

4.3.1. Works to be Done by the Completion Date

The Contractor shall have done everything required to provide the Works on or before the Completion Date, and certain individual items before the sectional Completion Dates, as stated in the contract data. The Completion Date is the day on which all commissioning activities are complete

(i.e., the system(s) are operational) and all documentation, including all relevant manuals, operating procedures, test results, redline and record drawings etc. are handed to the Employer.

4.3.2. Works Permitted after Completion

The Contractor is not permitted to carry out any works after completion. The whole of the works should be completed within five (5) months after receiving the purchase order from the Employer. This includes for the approval of the Contractor's SHEQ file which should be submitted no later than two (2) weeks after the purchase order is issued.

4.3.3. Access to Correction of Defects

Should the Contractor have to return to the Site after completion of the works to effect an improvement or repair, the Contractor shall arrange all staff members required to perform the work and shall also carry the costs of such access.

4.3.4. Operational Maintenance

The Contractor may be required to perform operational maintenance within the first year after completion. The level and extent of such operational maintenance will be agreed and negotiated with the Contractor during execution of the Works. An estimate for such maintenance should be clearly listed as a take-out price at time of tender.

5. Servitudes

New infrastructure shall remain within the existing Transnet servitude and not encroach on land and owned by others unless agreed with Transnet and addressed in the Environmental Impact Assessment.

6. Environment

All work is to be conducted in accordance with the principles of the National Environmental Management Act, 1998 (Act no 107 of 1998) as well as all other applicable legislation, regulations and accepted environmental good practice.

A Construction Environmental Management Programme (CEMPr) has been compiled for the Port of Ngqura which is applicable to this project and is included under Annexure C (Environmental Management Programme).

The CEMPr provides an integrated approach to environmental management. This approach is designed to guide the appropriate allocation of human resources, assign responsibilities, develop procedures, and ensure project compliance with regulatory and best practice requirements. The CEMPr is the minimum acceptable standard for the Project that shall be complied with at all times. The CEMPr requirements shall be applicable to the main Contractor and all its service providers.

The Contractor must sign the declaration of understanding as a commitment to abide with the Project CEMPr and Transnet Environmental Governance Framework. Sufficient environmental budget must be allocated to meet all the project environmental requirements for the duration of the contract.

The Contractor shall perform the Works and all construction activities within the Site and Working Areas having due regard for the environment and environmental management practices as more particularly described within the CEMPr.

The Contractor must appoint a suitably qualified Environmental Officer with a relevant environmental qualification and a minimum of 5 years relevant construction environmental management experience. The roles and responsibilities of the Contractor's EO are clearly outlined in the CEMPr. The appointed EO is required to be on site daily. The EO must be a dedicated resource to the environmental discipline and may not be shared with any other discipline on site such as Health and Safety or Quality.

The Contractor will be required to submit an environmental file to TNPA post award of tender. Particular requirements of the Employer will be made known on award of the contract. A Site access certificate shall not be granted until the environmental file has been approved by the Employer.

The overarching obligations of the Contractor in terms of the CEMPr before construction activities commence on the Site and/or Working Areas is to provide environmental method statements for all construction operations at the Site and/or Working Area and where requested by the Construction Manager. The Contractor shall comply with the following:

The Contractor shall identify the kinds of environmental impacts that will occur as a result of their activities and accordingly prepare separate method statements describing how each of these impacts will be prevented or managed so that the standards set out in the CEMPr are achieved.

Environmental method statements will be prepared in accordance with the requirements set out in the CEMPr. These method statements shall form part of the environmental file.

The Contractor shall ensure that his management, foremen and the general workforce, as well as all suppliers and visitors to Site have attended the Environmental Induction Programme prior to commencing any work on Site.

If new personnel commence work on the Site during construction, the Contractor shall ensure that these personnel undergo the Environmental Induction Programme and are made aware of the environmental specifications on Site.

The Contractor shall take note of the environmental sensitivity of the Project area and surrounding areas and shall erect and maintain a highly visible temporary fence/barrier along the boundaries of the Site and around any no-go areas that may be pointed out by the Project Environmental Manager. Site demarcation must be done and be in place prior to commencement of any construction related activity, to the satisfaction of the Construction Manager and Project Environmental Manager.

The Contractor must take note of various environmental monitoring requirements during construction, as specified by the CEMPr, and must make adequate allowance for undertaking specified monitoring.

The Contractor must appoint a waste removal Service Providers as per the TNPA list of waste removal Service Providers (to be provided after contract award).

During the construction period, the Contractor shall comply with the following:

Upon award the Contractor will receive a CD containing, but not limited to the environmental file templates and copies of the project's EA, permits and licences and CEMPr;

A copy of the project's EA, permits and licences, CEMPr and method statements shall be available on Site, and the Contractor shall ensure that all the personnel on Site (including subcontractors and their staff) as well as suppliers are familiar with and understand the specifications contained in these documents;

The Contractor must sign a Declaration of understanding (T2.2.38) as part of a returnable acknowledging understanding of the environmental requirements for the Project. Furthermore, sufficient environmental budget must be allocated for the implementation of environmental management requirements.

Method statements that are required during construction must be submitted to the Project Manager for approval at least 10 days prior to the proposed commencement of the activity. Emergency construction activity method statements may also be required. The activities requiring method statements cannot commence if the method statements have not been approved by the Project Manager. The scope of the required method statements for completion by the Contractor shall, as a minimum, include all such items as are listed within the CEMPr;

Where applicable, the Contractor shall provide job-specific training on an ad hoc basis when workers are engaged in activities, which require method statements.

The Contractor shall ensure that anyone making deliveries to Site is properly informed of all procedures and restrictions, e.g. which access roads to use, no go areas, speed limits, noise and the like, as required by the relevant project Authorisations and the CEMPr, before they arrive at Site.

The Contractor shall be responsible for rehabilitation/reinstatement and cleaning all areas to the satisfaction of the TNPA Project Environmental Manager or Environmental Officer as detailed in the CEMPr.

7. Management and Start-up

It is the Employer's specific intention that the Parties and their agents use the techniques of partnering to manage the contract by holding meetings designed to pro-actively and jointly manage the administration of the contract with the objective of justifying the opposing effects of risk for both Parties.

7.1. Types of Meetings

Regular meetings of a general nature may be convened and chaired by the Employer's Agent or his delegated representative as follows:

Table 3: Employer Meetings to be Attended by the Contractor

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and risk associated matters	Monthly on day and time to be agreed	Employer's Office or virtual	Employer's Agent (appropriate delegates), and Professional Team (appropriate key persons)]
Overall contract progress and feedback	As per project schedule. Day and time to be agreed.	Employer's Office or virtual	Employer, Professional Team, and Contractor (appropriate key persons)
SHE meetings (if required)	Monthly. Day and time to be agreed.	Employer's Office or virtual	Employer's Agent and SHEQ team and Contractor (appropriate key persons)

7.2. Pricing Schedule Description

Attend all project meetings at Port of Ngqura called by either the Engineering Manager or Employer's Agent or any other representative of the Employer. The Employer's Agent which will for pricing purposes be equal to:

- a) **5 X Project design meetings @ 2 hours per meeting** – Project design meetings will be an opportunity where the Contractor will meet with Employer's Agent at the TNPA eMendi Admin Office at the Port of Ngqura to discuss progress on meetings highlighting issues and coordinate with the designers of the other disciplines. These actions should however not only be limited to project meetings but shall be able to happen throughout the project via telephone conversations and email communications. The Employer's Agent may decide that

the meeting be conducted virtually via the Microsoft Teams platform, Microsoft Projects or equivalent.

- b) **2 X Coordination meetings @ 2 hours per meeting** – The project Coordination meeting will be a meeting where the Contractor will meet with the Employer's Agent at the TNPA office. These meetings will be held explicitly for the sole purpose of the Contractor coordinating his designs with the other design disciplines. The Employer's Agent may decide that the meeting be conducted virtually via the Microsoft Teams.
- c) **2 X Design Squad Check meeting @ 6 hours per meeting** - The Squad check meeting will be a meeting which all the design disciplines shall attend at the Port of Ngqura which includes the Contractor and the Employer's Agent. The Employer's Agent may decide that the meeting be conducted virtually via the Microsoft Teams.
- d) **1 x Site investigation @ 16 hours** – Project site investigation will be an opportunity where the Contractor will meet with local authority to discuss design requirements, highlighting current issues and coordinate with the proposed scope of work.

7.3. Contractors' Management, Supervision, and Key Personnel

The Contractor provides an Organogram and Curriculum Vitae of all his Key Personnel (both as required by the Employer and as independently stated by the Contractor) and shows how such Key people communicate with the Project Manager, and their delegates. The Contractor must use his own discretion to appoint key personnel in his organogram. The roles and responsibilities may be shared amongst key personnel in the Contractor's organogram. The suggested appointments serve as guidelines only and the Contractor should use his experience to determine the amount of key personnel required to fulfil the scope of the project

Key personnel should include at least, amongst others but not limited to:

- Project Manager (Civil Engineering Lead).
- Civil Engineer/Civil Technician
- Site Agent/Construction Manager.
- Pr Eng/Tech Electrical.

7.4. Insurance Provided by the Employer

The insurance that will be provided by the Employer is as per NEC3 ECC Clause 87. The Contractor liaises with the Project Manager at the Contract Date to declare the NEC3 ECC contract details to the Employer's insurance brokers.

Where the works involve the assembly, erection and installation of Plant, the Contractor declares the full replacement value and not the value included in the NEC3 ECC.

The Contractor liaises with the Project Manager when a claim is made and assists in completing the Claims Advice Forms that shall be provided.

7.5. Contract Change management

At the Contract kick off meeting, the Contractor will be provided with the format of the standard forms to be used for communication of Contract change management (NEC3 ECC Clause 60). The team must apply a partnering approach in resolving issues in the project.

In general, no scope or design changes are to be actioned until approved in writing at the appropriate level. Once a change or potential change has been identified, a decision will be taken by the Project Manager as to whether work in the area concerned is to be stopped or continued on the previously agreed scope – until such time as the change is approved. Only the Project Manager's instruction shall be used as method to confirm and verify approved scope or design changes.

Either party in this contract notifies through early warning and attend a risk reduction meeting with the purpose of resolving the raised Early Warning. Once a Compensation Event (CE) is notified, the Project Manager along with technical support personnel and the NEC Supervisor will evaluate the CE. If the CE is accepted a Project Change Notice will be applied and the CE will be paid. Should the CE be rejected, the Contractor will be informed accordingly, with reasons, and the CE will not be paid.

7.6 Provision of bonds and guarantees

The form in which a bond or guarantee required by the conditions of contract is to be provided by the Contractor is given in Part 1 Agreements and Contract Data, document C1.3, Securities.

The Contractor provides a bond or guarantee as required by the conditions of contract concurrently with the execution by the Parties of the form of agreement for the ECC3 contract.

- TNPA will retain 10% of the contract value for a period of 52 week.
- Amount will be retained for the for the duration of the contract.
- 50% of the retention will be paid out on the completion of the work and submission of apractical completion certificate.
- The remaining 50% will be paid after 52 weeks of the completion of the work should therebe no defects.
- The retention fee may not be released if the there is work certified to be defective
- The 10% retention will be retained on every assessed and approved/certified request forpayment made by the Contractor and this

7.7 Plant and materials

The Contractor provides Plant and Materials for inclusion in the works in accordance with SANS 1200A sub-paragraph 4.2, unless otherwise stated elsewhere in the Works Information provided by the Employer. All Plant and Materials shall be new, unless the use of old or refurbished goods and/or materials are expressly permitted as stated elsewhere in this Works Information or as may be subsequently instructed by the Project Manager.

Where Plant and Materials for inclusion in the works originate from outside the Republic of South Africa, all such Plant and Materials shall be new and of merchantable quality, to a recognised national standard, with all proprietary products installed to manufacturers' instructions.

The Contractor replaces any Plant and Materials subject to breakages (whether in the Working Areas or not) or any Plant and Materials not conforming to standards or specifications stated and notifies the Project Manager and the Supervisor on each occasion where replacement is required.

No advance payments will be made for materials, plant or equipment supplied by the Contractor for the purpose of incorporation or installation as part of the Works.

Price adjustment for inflation will not apply in this contract. Should the contractor not complete the Completion Date, delay damages will apply as stated on the Contract data.

7.8 Contractors (Including Temporary Works)

Use of the Site

The Site is located at the eMendi Admin Building of the Port of Ngqura. The Contractor should note that the site is located at the eMendi Admin Building Precinct, an operational building and Head office of TNPA and therefore care should be taken to cause minimal disruptions to operations.

Access to the Site

The site is located at the eMendi Admin Building at the Port of Ngqura. The Contractor shall be responsible for any permits obtained for access to the site and the overhead costs shall be deemed to be inclusive of the cost for access permits issued by third parties. A Site Access Certificate will be issued to the Contractor once the Contractor's SHE file is approved. Access to all TNPA sites is controlled by the TNPA Security department and their appointed service provider

Deliveries

Deliveries made to site should be declared to the security personnel on duty by means of a material list.

Noise and vibrations

Noise and vibrations during construction should be kept to a minimum. The Contractor shall inform the site occupants whenever operations on site will cause noise and/or vibrations. The Contractor shall provide the site occupants with hearing protection should the operations on site because noise levels above the recommended level for safe working conditions. The provision of personal protective equipment to other site occupants, as a result of site conditions, shall be for the cost of the Contractor.

Working Hours

Normal working hours are between 07:00 and 17:00 Mondays to Fridays. The site is however occupied on a 24-hour basis, seven days a week. The Contractor must obtain written permission to work outside the stated normal working hours at least 24 hours before such work is to be undertaken. TNPA will not unreasonably withhold permission.

Parking

There is limited space for parking on the site and the Contractor should take care not to park in areas that may limit traffic flow. The designated area for parking is across the road from the building that is to be refurbished. The Contractor's site should however be set up in a manner that allows for the movement of abnormal vehicles through the entrance on an ad hoc basis.

Contractor's Equipment

The Contractor keeps daily records of his Equipment used on Site and the Working Areas (distinguishing between owned and hired Equipment) with the access to such daily records available for inspection by the Project Manager at all reasonable times.

All plant used by the Contractor on site shall be properly maintained and operated. Equipment used in all areas is to be intrinsically safe. All vehicles on public roads shall be roadworthy, with the necessary licences and safety requirements. A checklist/register shall be implemented which lists the operators' qualifications and medical records. All equipment supplied by the Contractor will comply with the relevant standard specifications.

Use (or Non-Use) of Explosives

No blasting operations shall be carried out, without prior knowledge and joint consent of the Project Manager and the Supervisor. Such consent is unlikely unless there is no alternative.

Restrictions on the Use of Hazardous Materials

No use of hazardous materials may take place without proper precaution. Any use of hazardous material must first be communicated with the Project Manager.

Storage of Fuel and Chemicals

The Contractor shall ensure that all fuel and chemicals are stored in their original containers and if not, the containers containing fuel and chemicals are clearly labelled.

Pollution, Ecological or Environmental Impacts

The Contractor shall appoint a responsible person to ensure that no accident shall occur on site that could cause pollution. Where the Contractor was negligent and caused any form of pollution the damage shall be rectified at the Contractor's cost.

Interfaces between the Works and Existing Things

The Contractor must make sure that their employees do not interfere with Transnet National Ports Authority assets. Any damage to any Transnet National Ports Authority assets during construction will be repaired by the Contractor at their own cost.

Occupied Premises and Users

The premises is currently occupied by TNPA Security supervisors and Security Contractor staff. The Contractor should not interfere with the duties of any security personnel on site.

Employer Specific Policies and Procedures

The Contractor must comply with SHE policies, procedures and requirements. The SHE file with all required information shall be submitted to the Project Manager for review within ten (10) days after the issuing of the purchase order.

8 Quality Assurance Requirements

The Contractor shall ensure that all contractual deliverables required to be executed and completed are given due consideration to meet the client's Technical Specifications, Drawings and General Quality Requirements for Contractors and Suppliers (QAL-STD-0001).

The Contractor shall have, maintain, and demonstrate to the Employer the documented Quality Management System to be used in the performance of the scope. The Contractor shall institute a quality management system, instruments and equipment required including providing adequate quality supervision and control for works at all times.

The Contractor's Quality Management System shall conform to International Standard ISO 9001:2015.

The Contractor submits his Quality Management System documents to the Employer as part of his programme under ECC Clause 31.2 to include details of:

- Project Quality Plan for the contract SHALL cover project scope and be aligned to ISO 9001:2015 QMS requirements.
- Valid ISO 9001:2015 certification. If it is a joint venture, any ISO 9001:2015 certificate of those in partnership will be accepted.
- Project Specific Quality Data Book Index

-
- Quality Control Plan MUST cover all Engineering disciplines and clearly identify all inspection, test, verification requirements to meet contractual obligations, specification and drawings as required by the project scope.

The Contractor develops and maintains a comprehensive register of documents that will be generated throughout the contract including all quality related documents as part of its Quality Plan.

The Employer indicates those documents required to be submitted for information, review or acceptance and the Contractor indicates such requirements within his register of documents. The register shall indicate the dates of issue of the documents with the Employer responding to documents submitted by the Contractor for review or acceptance within the period for reply prior to such documents being used by the Contractor.

The Quality Plan shall outline the quality strategy, methodology, quality resource allocation, Quality Assurance and Quality Control co-ordination activities to ensure that the scope meet the standards stated in the Scope Information.

The Contractor shall nominate a suitably experienced quality representative for all aspects of the Works, including general Site activities, with a staff complement that is adequate to perform the requirements of the PQP.

The Contractor shall submit the CV of his nominated quality representative for the Project Manager's review and approval.

9 Documentation Control

The Contractor shall submit all documentation complying with the Employer's standards and requirements.

- a) The Employer will issue relevant documentation to the Contractor, but control, maintenance and handling of these documents will be the Contractor's responsibility, at their expense and managed with a suitable document control system.
- b) All project documents issued to 3rd Parties and to the Employer must be submitted through the Employer's Document Control Department.

-
- c) In undertaking the study all documentation requirements for the study shall be dealt with in accordance with document DOC-STD-0001 (Contractor Documentation Submittal Requirements).
 - d) The Documentation Schedule (CDS) is as contemplated in DOC-STD-0001.
 - e) The Contractor documentation "Starter kit," as contemplated in DOC-STD-0001, will be issued at the kick-off meeting following award.
 - f) All contract correspondence is issued through document control. All hardcopy communication will be delivered to the Employer via the Lead Document Controller. In the event of urgent communication, electronic communication can be transmitted to the Employer's Agent.
 - g) Each supplier of documentation and data to the Project is responsible for ensuring that all documentation and data submitted conforms to the Project Standards and data Quality requirements in terms of numbering, uniqueness, quality, accuracy, format, completeness, and currency of information. Data not meeting the Project Standards and data Quality requirements will be cause for rejection and returned to the Contractor for corrective action and re-submission.
 - h) Should any change be made to documentation or data, which has already been submitted to the Project, then new or revised documentation or data shall be issued to replace the out-dated information.
 - i) All drawings supplied shall comply with the CAD Standards, i.e. ENG-STD-0001.
 - j) It is the responsibility of all Project participants undertaking work on the Project to ensure they obtain and comply with the relevant requirements to suit their deliverables.
 - k) The Contractor is to ensure that the latest versions of the required application software and a suitable 'IT' Infrastructure are in place to support the electronic transmission of documentation.

-
- l) All native files are to be submitted to the Employer. Electronic files submitted to the Project shall be clear of known viruses and irrelevant "instructions." The supplier of documentation is required to always have, the latest generation of virus protection software and up-to-date virus definitions.
 - m) The required number of copies shall as a minimum be three (2) (1x original + 1 x hard copy), with the corresponding PDF and 'Native' file formats upon final submission.
 - n) The Contractor shall apply "wet signatures" to the original Documentation before scanning the signed original and prior to formal submission.
 - o) Final issues of all documentation shall be supplied to the Project in "wet signature" format along with the associated corresponding electronic 'native files' and PDF renditions.
 - p) The Contractor shall ensure adequate resources are available to manage and execute the Document Control function as per the requirements of the Project.

10 Programme Constraints

- a) The Contractor presents their first programme and all subsequently revised programmes in hard copy format printed in full colour in A3 size and in soft copy 'Native' format. Note that PDF soft copy versions are not acceptable.
- b) The Contractor submits his Level 4 programme to the Employer for acceptance in the period stated in the Contract Data.
- c) The Contractor uses Primavera version 6 or Microsoft Project for his programme.
- d) The Contractor shows on his programme submitted for Acceptance and all subsequently revised programmes schedules (including calendar) the critical path or paths and all necessary logic diagrams demonstrating the order and timing of the operations which the Contractor plans to do.
- e) The Contractor's programme shows duration of operations in working days.

The Contractor's programme shows the following levels:

- Level 1 Master Schedule – defines the major operations.
- Level 2 Project Schedule – Breakdown showing different packages and/or disciplines involved in the project; a summary schedules 'rolled up' from Level 3 Project Schedule described below.
- Level 3 Project Schedule – detailed schedules generated to demonstrate all operations identified on the programme from the starting date to Completion. The Employer notifies any subsequent layouts and corresponding filters on revised programmes.
- Level 4 Project Schedule – detailed discipline speciality level developed and maintained by the Contractor relating to all operations identified on the programme representing the daily activities by each discipline.

The Contractor shows on each revised programme he submits to the Employer a resource histogram showing planned progress versus actual, deviations from the Accepted Programme and any remedial actions proposed by the Contractor. The Contractor's weekly programme narrative report includes:

- Level 4 Project Schedule – showing two separate bars for each task i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.
- 3-week Look ahead Schedule - showing two separate bars for each task i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.

11 Health and Safety Requirements

The Contractor shall provide a full time Health and Safety Officer on Site who is registered with SACPCMP as a CHSO as well as a full time Construction Manager registered with SACPCMP, Supervisor as well as full time first aider. All employees to be in possession of valid medical certificates of fitness (including a drug test) conducted at the CDC or alternatively verified at the CDC clinic. The Contractor ensures that all requirements imposed on the Contractor as per the project Health and Safety Specification, will be enforced on the subcontractors as well. The Contractor to submit a health and safety file to the Transnet representative for acceptance before any work can commence on site. No alcohol is permitted on Site and Transnet property. The Employer has a zero-tolerance policy in this regard and all personnel entering the Site will be



~~required to undergo daily breathalyser tests conducted by the Contractor.~~

11.1 Safety Induction

Prior to gaining access to the Employer's Sites, everyone shall attend the Employer Safety Induction Course. The intention of the course is to provide the individual workers with an overview of the Ports specific safety programs rules, inherent risk, procedures, and the like. The Safety Induction Course shall be conducted at the Port of Ngqura.

11.2 Personal Protective Equipment

The Contractor shall provide all personnel with the required PPE as detailed in the Health and Safety Specification.

The following is to be worn as a minimum

- Hard hats (dependent on the work being conducted),
- Safety shoes
- Suitable Respirator
- Overalls (dependent on the work being conducted),
- Gloves
- Reflective vests,
- Safety glasses (dependent on the work being conducted).
- Any other job specific PPE required.

Long pants and long sleeve shirts/overalls are a requirement – no shorts can be worn on site. No employees will be transported at the back of open vehicles, even those fitted with a canopy. All other requirements are as per the applicable symbolic safety signage and/or relevant demarcations.

11.3 Fire and Emergencies

In the event of fire or any other emergency situation, the Service Provider shall immediately notify the Employer's fire/emergency services personnel.

12 Ownership of Data, Designs and Documents

The parties shall agree that copyright in the data, design and documents shall, after payments by the Employer of the services to the Contractor lie with the Employer subject to the Employer's indemnification against any claim from any party that may arise as a result of the Employer's use of

such a document due to the Contractors infringement of copyright.

13 Facilities and Equipment to be Provided by the Employer

No facilities or equipment is provided by the Employer. The Contractor may, however, make arrangements with the relevant Transnet personnel to make use of ablution facilities that might be on or near the site.

14 Invoices

All invoices submitted by the Contractor shall be VAT invoices, which shall be accompanied by a daily activity sheet covering the services together with, where relevant, a brief explanation as to what the time covered, the task order number and a full breakdown of expenses to which receipts relate.

15 List of Drawings / Reports

The Contractor shall submit RFC drawings in AutoCAD and PDF format to the Employer's Agent. The civil drawings required shall include but not limited to:

- Parking Layouts.
- Parking long sections and cross-section.
- Typical details.

15.1 Reports

- Site Investigations Report (Topographical Survey).
- Geotechnical Investigation Study.
- Design Criteria.
- Design Report.

15.2 Drawings Issued by Employer

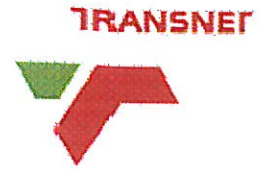
The Employer shall make available a layout drawing for the site.

16 Works by Others

All the work for design and construction of the parking facilities will be done by the Contractor.

Design & Engineering – List of Deliverables

Design Stage	Drawings/Report	Details
SITE INVESTIGATION	Topographic Survey	Topographic Survey Report in PDF format Topographic Survey raw data in DTM and LANDXML format with surface features and contours in DWG format
	Geotechnical Investigation	Geotechnical Investigation Report including Laboratory results in PDF format
CONCEPTUAL DESIGN	Design Criteria	Design Criteria Report in PDF format
	Conceptual Drawings	Conceptual Layout drawings in AutoCAD and PDF format
DETAILED DESIGN	RFC Detailed Design Drawings (all in AutoCAD and PDF format)	General Arrangement Layout
		Parking and Stormwater Layout Plans
		Setting-out Layouts, Cross-sections and Long-sections
		Pavement Design details
		Typical details
	Design Report	Design Report in PDF format
CONSTRUCTION	Quality Control Plan	Detailed Quality Control Report with construction hold-points in PDF format
	Method Statement	Revised Method Statement based on the Contractor's design inputs in PDF format



Transnet Capital Projects


6 May 2010

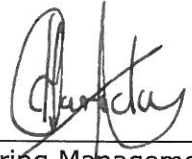
Note: If hardcopy, check electronic system for latest revision

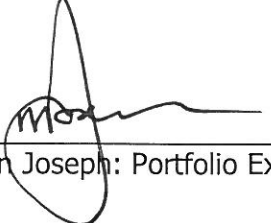
Transnet Capital Projects: Project Development and Execution: Engineering

CAD Standards

ENG-STD-0001

Prepared by:  20 SEPT 2010
 Drawing Standards Committee
 (Chairman: Ketan Bindapersad) Date

Reviewed by:  2011/09/20
 Engineering Management
 (Represented by Ashley Haridas) Date

Approved by:  20/09/2011
 Mervin Joseph: Portfolio Executive: Engineering Date

00	20.09.10	Issued for Use
Rev No.	Date	Revision Details

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1. Purpose

The purpose of this document is to ensure that all CAD files and drawings are created in a logical and consistent format, and in a manner reflecting consistent design practice during the execution of the Projects within Transnet Capital Projects.

2. Scope

This standard applies to all PD&E and engineering personnel within Transnet Capital Projects, as well as external contractors and consultants appointed by PD&E, whom are responsible for developing, creating and issuing drawings.

All Engineering staff, contractors and consultants that are involved in the production of drawings for TCP, will be issued with this standard and must ensure compliance. It is noted that where fabrication shop details are required, it is not necessary for the contractor to comply with these standards and their own CAD packages may be used.

General drawing practice shall comply with current discipline-specific South African Standards.

In certain cases clients may prescribe standards different from this document.

3. References

- ISO 9001: Quality management systems- Requirements
- SANS 10144: Detailing of steel reinforcement for concrete
- SANS 10143: Building Drawing Practice
- SANS 1044-2: Welding Part II: Symbols
- SANS 10111: Engineering Drawing Part 1,2 and 3
- SANS 282: Bending dimensions of bars for concrete reinforcement
- South African Institute of Steel Construction (SAISC) Standard
- SYS-P-0001: Transnet Programme Numbering/Codification Procedure
- BS 3939: Graphical symbols for electrical power, telecommunications and electronic diagrams
- BBB0041: Preparation of Drawings for Transnet Freight Rail
- BBB4354 : Preparation of signalling documents
- BBD 5371 : CAD Standard for technical Documentation
- SANS NRS 1002 : Graphical symbols for Electrical Diagrams
- CSE Z 148: Symbols for Signalling

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- Transnet Bridge Code 1983
- BBB4354: Technical asset life cycle management configuration management
- ENG-P-0105: Engineering Drawings

4. Responsibility

Administrators of the Drawing Standards are responsible for monitoring the implementation of the Standards and ensuring adherence to the Standards.

Any proposed changes to the Drawing Standards must be reviewed by the Drawing Standards Committee, as constituted from time to time by the Portfolio Executive, Engineering. Final approval vests in the Portfolio Executive Engineering.

5. Procedure

This standard should be read together with Engineering Procedure ENG-P-0105: Engineering drawings

6. Drawing Standard

6.1 Glossary of Terms

2D	Two Dimensional
3D	Three Dimensional
CAD	Computer Aided Design
DGN	MicroStation format graphics files and suffix
DWG	AutoCAD format graphics files and suffix
NTS	Not to Scale

6.2 Software

Only the most current versions of AutoCad and Microstation are to be used.

6.3 Units

All drawings will conform to SI units (Systems International)

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6.4 Language

All notes, comments and text will be in the English language (UK Standard)

All instructions on a drawing shall be in the imperative tense i.e.: Pipe to be cut, connection to be welded.

6.5 Templates

A template with all title blocks, text attributes, layer or level controls must be used when starting a new drawing. Templates are set up for each specific discipline i.e. Civil must use their specific templates, Architects their specific template etc. These discipline specific templates contain the discipline specific layer or level control.

Drawings/models must be done in model space. Viewports must then be created in the paper space at the required scale.

Notes must be done in paper space i.e. on the actual drawing sheet.

6.6 Drawing sizes

Designation	Trimmed Size
A0	841 x 1189
A1	594 x 841
A2	420 x 594
A3	297 x 420
A4	210 x 297

Long drawings, where necessary for wiring/circuit diagrams, cable run diagrams, track layouts etc. shall be prepared with widths equal to the widths of "A" series sheets, as required.

6.7 Scales

The requirements of scale settings are as follow:

When using model space, the design must always be full size, i.e. active scale = 1:1.
The title block shall not be scaled.

The viewport will be created on the drawing sheet (in paper space) and scaled to the required scale, rather than trying to scale the drawing sheet to a scale.

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In the case of non-dimensional drawings such as diagrammatic drawings, the viewport must be scaled to suit the drawing sheet.

Different vertical and horizontal scales may be chosen in order to exaggerate a profile or to clarify thin layers of a section.

The preferred scales are:

1:1	1:2	1:5
1:10	1:25	1:50
1:100	1:20	1:500
1:1000	1:200	1:5000
1:10000	1:2000	1:50000
1:100000	1:20000	

6.8 Text Attributes

All text shall be in Arial font, with a width factor of 0.7mm

Layer	Colour	Line type	Line weight	Plot style	Use/description
T2	WHITE	CONT	0.25	MONO	General text 2.5mm
T3	YELLOW	CONT	0.35	MONO	General text 3.5mm
T5	RED	CONT	0.50	MONO	General text 5.0mm
T7	GREEN	CONT	0.70	MONO	General text 7.0mm

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6.9 Dimensioning

All detailed dimensions shall be in millimetres

All elevations shall be in metres up to 3 decimal places, and clearly indicated, i.e.:

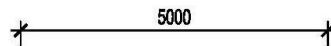
EL 23.000 m

Co-ordinates shall be stated in metres to 3 decimal places.

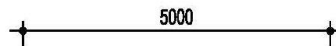
Dimensioning must be done whilst in paper space, in an **active** viewport. This is done so that the dimension size will always be consistent in scale i.e. it will be relative in scale to the scale that the viewport is set at.

Dimensions are not to be exploded.

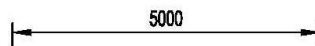
Examples:



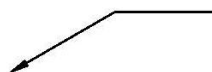
Dimension with oblique line



Dimension with dot



Dimension with arrow



Leader

6.10 Hatching

All hatching to be done in accordance with SANS 10143

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6.11 Layer Control

Standard layers with their own identities will be used in all drawings. The following categories apply:

1. Common layers (without discipline prefix)
2. Architectural layers (A_)
3. Civil layers (C_)
4. Structural layers (S_)
5. Electrical, light and power layers (E_)
6. Mechanical layers (M_)
7. Overhead Track Equipment layers (O_)
8. Signal layers (N_)
9. Telecommunications layers (V_)
10. Bridge layers (B_)
11. Water layers (W_)
12. Perway layers (P_)
13. G.I.S. / Land surveying layers

There are no specific layers set out in this document; save to say that text and all different objects and features must be named in its own layer.

Should further Layers or Levels be required the discipline specific prefix should be used.

COMMON LAYERS						
LAYER NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
0	STANDARD LAYER	WHITE	CONT	0.25	MONO	YES
DIMS	DIMENSIONS (PER SCALE)	WHITE	CONT	0.25	MONO	YES
HATCH	GENERAL HATCHING	11	CONT	0.18	MONO	YES
HATCH- 252	HATCHING IN COLOUR 252	252	CONT	DEFAULT	COLOUR	YES
HATCH- 254	HATCHING IN COLOUR 254	254	CONT	DEFAULT	COLOUR	YES
T2	GENERAL TEXT 2.5mm	WHITE	CONT	0.25	MONO	YES
T3	GENERAL TEXT 3.5mm	YELLOW	CONT	0.35	MONO	YES
T5	GENERAL TEXT 5.0mm	RED	CONT	0.50	MONO	YES
T7	GENERAL TEXT 7.0mm	GREEN	CONT	0.70	MONO	YES
VPORT	VIEWPORTS IN LAYOUTS	254	CONT	DEFAULT	NORMAL	NO
FRAME	TITLE BLOCK FRAME	WHITE	CONT	0.25	MONO	YES
LOGOS	LOGO LAYER	WHITE	CONT	0.25	MONO	YES

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ARCHITECTURE						
LAYER NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
A_BR-N	NEW BRICKWALLS	RED	CONT	0.5	MONO	YES
A_BR-X	EXTG BRICKWALLS	YELLOW	CONT	0.35	MONO	YES
A_CONC-N	NEW CONCRETE	GREEN	CONT	0.7	MONO	YES
A_CONC-X	EXTG CONCRETE	YELLOW	CONT	0.35	MONO	YES
A_DOOR	DOORS	MAGENTA	CONT	0.18	MONO	YES
A_FIT	FITTINGS	CYAN	CONT	0.18	MONO	YES
A_FLFIN	FLOOR FINISH	8	CONT	0.13	MONO	YES
A_GRID	GRIDLINES	9	CENTRE	0.18	MONO	YES
A_HIDE	HIDDEN LINES	CYAN	HIDDEN	0.18	MONO	YES
A_PART-N	NEW PARTITIONS	BLUE	CONT	0.7	MONO	YES
A_PART-X	EXTG PARTITIONS	YELLOW	CONT	0.35	MONO	YES
A_REM	DEMOLISH/REMOVE	9	DASHED	0.18	MONO	YES
A_WIN	WINDOWS	MAGENTA	CONT	0.18	MONO	YES
G1	GENERAL 0.18	11	CONT	0.18	MONO	YES
G2	GENERAL 0.25	WHITE	CONT	0.25	MONO	YES
G3	GENERAL 0.35	YELLOW	CONT	0.35	MONO	YES
G5	GENERAL 0.5	RED	CONT	0.5	MONO	YES
G7	GENERAL 0.7	BLUE	CONT	0.7	MONO	YES
H	HATCH	11	CONT	0.18	MONO	YES
H-252	SOLID HATCH/INFILL	252	CONT	0.25	COLOUR	YES
H-254	SOLID HATCH/INFILL	254	CONT	0.25	COLOUR	YES
A_SITE	SITE AND LOCALITY PLANS	RED	CONT	0.18	MONO	YES
A_DIM	DIMENSIONS	RED	CONT	0.18	MONO	YES
A_BR-N2	CAVITIES	RED	CONT	0.18	MONO	YES
A_SEW	DRAINAGE PLAN	GREEN	CONT	0.40	MONO	YES
A_SW	STORMWATER PLAN & SECTION	RED	CONT	0.18	MONO	YES
A_BL	BUILDING LINE	8	HIDDEN	0.13	MONO	YES

CIVIL						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
C_BENCH	BENCH MARKS	WHITE	CONT	0.25	MONO	YES
C_BLD-N	PROPOSED BUILDINGS	GREEN	CONT	0.35	MONO	YES
C_BLD-X	EXISTING BUILDINGS	RED	CONT	0.18	MONO	YES
C_BRG-N	PROPOSED BRIDGES	GREEN	CONT	0.35	MONO	YES
C_BRG-X	EXISTING BRIDGES	RED	CONT	0.18	MONO	YES
C_CHAIN	CHAINGE	MAGENTA	CONT	0.15	MONO	YES
C_CONC	CONCRETE SURFACING	GREEN	CONT	0.35	MONO	YES
C_CONC-B	CONCRETE BELOW GROUND LEVEL	YELLOW	DASH	0.25	MONO	YES
C_CRANE	CRANE RAILS & EQUIPMENT	YELLOW	CONT	0.25	MONO	YES



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CIVIL						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
C_CULV-N	PROPOSED CULVERTS	GREEN	CONT	0.35	MONO	YES
C_CULV-X	EXISTING CULVERTS	MAGENTA	CONT	0.15	MONO	YES
C_FNC-PA-X	EXISTING FENCING- PALISADE	MAGENTA	FENCE2	0.15	MONO	YES
C_FNC-PC-X	EXISTING FENCING- PRECAST CONCRETE	MAGENTA	DIVIDE	0.15	MONO	YES
C_FNC-ST-X	EXISTING FENCING-STEEL/WIRE	CYAN	FENCE3	0.25	MONO	YES
C_FNC-PA-N	FENCING-PALISADE	YELLOW	FENCE2	0.25	MONO	YES
C_FNC-PC-N	FENCING-PRECAST CONCRETE	YELLOW	DIVIDE	0.25	MONO	YES
C_FNC-ST-N	FENCING-STEEL/WIRE	YELLOW	FENCE3	0.25	MONO	YES
C_FORM-N	PROPOSED FORMATION	4	CONT	0.70	MONO	YES
C_FORM-X	EXISTING FORMATION	41	CONT	0.25	MONO	YES
C_GRID	GRID LINES	251	CONT	0.01	MONO	YES
C_GR-LN	GROUND LINE	MAGENTA	DASH	0.15	MONO	YES
C_KERB-N	PROPOSED KERBING	GREEN	CONT	0.35	MONO	YES
C_KERB-X	EXISTING KERBING	MAGENTA	CONT	0.15	MONO	YES
C_PAV	PAVING	WHITE	CONT	0.25	MONO	YES
C_PREM	PREMIX SURFACING	YELLOW	CONT	0.25	MONO	YES
C_RD-M	PROPOSED ROAD MARKINGS	WHITE	CONT	0.25	MONO	YES
C_RD-N	EXISTING ROAD MARKINGS	251	CONT	0.01	MONO	YES
C_REM	REMOVED/DEMOLISHED CIVIL WORKS	251	HIDDEN	0.01	MONO	YES
C_RES	RESERVOIRS	YELLOW	CONT	0.25	MONO	YES
C_RET	RETAINING STRUCTURES	GREEN	CONT	0.35	MONO	YES
C_SERV	SERVITUDES	93	DASHED2	0.25	MONO	YES
C_SEW-N	PROPOSED SEWER	40	DASH/DOT	0.50	MONO	YES
C_SEW-X	EXISTING SEWER	41	DASH/DOT	0.25	MONO	YES
C_SHORE	SHORE LINE, QUAY WALLS	CYAN	CONT	0.25	MONO	YES
C_SIGN-N	PROPOSED SIGNAGE	WHITE	CONT	0.25	MONO	YES
C_SIGN-X	EXISTING SIGNAGE	251	CONT	0.01	MONO	YES
C_SW-N	PROPOSED STORMWATER	150	DIVIDE	0.50	MONO	YES
C_SW-TXT-N	PROPOSED STORMWATER TEXT	2	CONT	0.25	MONO	YES
C_SW-X	EXISTING STORMWATER	151	DIVIDE	0.25	MONO	YES
C_SW-TXT-X	EXISTING STORMWATER TEXT	MAGENTA	CONT	0.15	MONO	YES
C_STEEL	STEEL STRUCTURES	YELLOW	CONT	0.25	MONO	YES
C_SLEV	SLEEVE PIPES	WHITE	DASH	0.25	MONO	YES
C_TR-CUR	CURVE DATA	WHITE	CONT	0.25	MONO	YES
C_TR-N	PROPOSED RAIL TRACKS	CYAN	CONT	0.50	MONO	YES
C_TR-X	EXISTING RAIL TRACKS	251	CONT	0.01	MONO	YES
C_TR-T	TEMPORARY RAIL TRACKS	YELLOW	CONT	0.25	MONO	YES
C_TUN-N	PROPOSED TUNNELS	102	DASH	0.70	MONO	YES
C_TUN-X	EXISTING TUNNELS	101	DASH	0.25	MONO	YES
C_WR-N	PROPOSED WATER (PIPES/FITTINGS)	80	BORDER	0.50	MONO	YES
C_WR-X	EXISTING WATER (PIPES/FITTINGS)	81	BORDER	0.25	MONO	YES



Transnet Capital Projects

Note: If hardcopy, check electronic system for latest revision

CIVIL						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
C_BB	BANK BOTTOM EXISTING	35	HIDDEN	0.25	MONO	YES
C_BT	BANK TOP EXISTING	35	DASHED	0.25	MONO	YES
C_BA	BANK BATTER EXISTING	35	CONT	0.25	MONO	YES
C_BB-N	BANK BOTTOM NEW	41	HIDDEN	0.25	MONO	YES
C_BT-N	BANK TOP NEW	41	DASHED	0.25	MONO	YES
C_BA-N	BANK BATTER NEW	41	CONT	0.25	MONO	YES
C_SHORE	SHORE LINE	CYAN	CONT	0.25	MONO	YES
C_QUAY	QUAY WALL	GREEN	CONT	0.25	MONO	YES
C_FIRE-E	FIRE EQUIPMENT	RED	CONT	0.25	MONO	YES
C_FIRE-P	FIRE SUPPLY PIPING	RED	DASHDOT	0.25	MONO	YES

STRUCTURES						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
S_STEEL1	DETAIL1:5/1:10	GREEN	CONT	0.7	MONO	YES
S_STEEL2	PLAN/SECT/ELEV	WHITE	CONT	0.5	MONO	YES
S_STEEL3	DET/PLAN/SECT	YELLOW	DASHED	0.25	MONO	YES
S_STEEL4	DETAIL1:2	CYAN	CONT	1.2	MONO	YES
S_STEEL5	PLAN/SECT/ELEV	RED	CONT	0.18	MONO	YES
S_STEEL6	PLAN/SECT/ELEV	RED	DASHED	0.18	MONO	YES
S_STEEL7	PLAN/SECT/ELEV	RED	CENTRE	0.18	MONO	YES
S_STEEL8	DETAILS	YELLOW	DASHED	0.25	MONO	YES
S_STEEL9	EXISTING	RED	DASH/DOT	0.18	MONO	YES
S_STEEL10	EXISTING	YELLOW	DASH/DOT	0.25	MONO	YES
S_STEEL11	PLAN/SECT/ELEV	YELLOW	CONT	0.25	MONO	YES
S_STEEL12	PLAN/SECT/ELEV	YELLOW	CENTRE	0.18	MONO	YES
S_STEEL13	DETAILS	WHITE	DASHED	0.05	MONO	YES
S_CONC1	FOUND/PLAN	GREEN	CONT	0.7	MONO	YES
S_CONC2	REBAR DETAIL	GREEN	CONT	0.7	MONO	YES
S_CONC3	REBAR FOUND	YELLOW	CONT	0.25	MONO	YES
S_CONC4	REBAR FOUND	YELLOW	DASHED	0.25	MONO	YES
S_CONC5	REBAR FOUND	WHITE	CONT	0.5	MONO	YES
S_CONC6	REBAR FOUND	WHITE	DASHED	0.5	MONO	YES
S_CONC7	REBAR FOUND	RED	CENTRE	0.18	MONO	YES
S_CONC8	REBAR FOUND	BLUE	CONT	1.0	MONO	YES
S_WALLS	WALLS	RED	CONT	0.18	MONO	YES
S_HATCH	PROPOSED HATCH	8	CONT	0.01	MONO	YES
S_HATCH EX	EXISTING HATCH	15	Cont	0.065	MONO	YES
S_SLABLINE	SLAB LINE	MAGENTA	Cont	0.18	MOMO	YES
S_REBAR	REBAR	CYAN	CONT	0.50	MONO	YES

Note: If hardcopy, check electronic system for latest revision

STRUCTURES						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
S_COLUMN	COLUMN PLAN	GREEN	CONT	0.35	MONO	YES
S_CONC SECT	CONCRETE SECTION	CYAN	CONT	0.5	MONO	YES
S_CONC SECT	CONCRETE SECTION HATCH	8	CONT	0.01	MONO	YES
S_REBAR	REBAR SECTION	RED	CONT	0.18	MONO	YES
S_DIMENSIO	DIMENSION	RED	CONT	0.18	MONO	YES
S_BEAM_DS	BEAM DS	BLUE	CONT	0.7	MONO	YES
S_BEAM_US	BEAM US	BLUE	CONT	0.7	MONO	YES

ELECTRICAL, LIGHT AND POWER						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
E_CABLE	ELECTRICAL CABLES BELOW SURFACE	222	ELEC-1	0.35	MONO	YES
E_CDUCT	DOWN CONDUCTORS	BLUE	CONT	0.70	MONO	YES
E_COND	CONDUITS	WHITE	DASH	0.25	MONO	YES
E_DBOARD	DISTRIBUTION BOARDS	YELLOW	CONT	0.35	MONO	YES
E_EARTH	EARTH SPIKE	RED	CONT	0.50	MONO	YES
E_EX	EXISTING ELECTRICAL	9	CONT	0.18	SCREEN60	YES
E_LUM	LUMINAIRES	RED	CONT	0.50	MONO	YES
E_PSKIRT	POWER SKIRTING	245	DASH	2.00	MONO	YES
E_REM	REMOVED/OBSELETE ELEC ITEMS	CYAN	DASH	0.25	MONO	YES
E_SW-SOC	LIGHT SWITCHES, SOCKET OUTLETS	WHITE	CONT	0.25	MONO	YES
E_WIRE	ELECTRICAL WIRING	YELLOW	CONT	0.35	MONO	YES
E_ELP	ELECTRICAL LIGHT POLE	RED	CONT	0.25	MONO	YES
E_HLM	HIGH LIGHT MAST	RED	CONT	0.25	MONO	YES

MECHANICAL						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
M_AIRCON	AIRCONDITIONERS	MAGENTA	CONT	0.25	MONO	YES
M_DUCT	AIRCON DUCTING	WHITE	CONT	0.25	MONO	YES
M_FANS	EXTRACTOR & CEILING FANS	CYAN	CONT	0.25	MONO	YES

OVERHEAD TRACK EQUIPMENT						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
O_STRC-X	EXISTING STRUCTURES	WHITE	CONT	0.25	MONO	YES
O_STRC-N	PROP. STRUCTURES	RED	CONT	0.50	MONO	YES
O_MOFF-X	EXISTING MAKE OFF WIRES	WHITE	CONT	0.70	MONO	YES

Note: If hardcopy, check electronic system for latest revision

OVERHEAD TRACK EQUIPMENT						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
O_MOFF-N	PROP MAKE OFF WIRES	RED	CONT	0.50	MONO	YES
O-EARTH-X	EXISTING EARTH WIRE	WHITE	CONT	0.18	MONO	YES
O-EARTH-N	PROP EARTH WIRE	BLUE	DASH	0.30	MONO	YES
O-TLINE-X	EXISTING TRANS -MISSION LINE	WHITE	CONT	0.50	MONO	YES
O-TLINE-N	PROP TRANS -MISSION LINE	GREEN	CONT	0.35	MONO	YES
O_NEG RET-X	EXISTING NEG. RETURN	WHITE	C-DOT	0.35	MONO	YES
O_NEG RET-N	PROP NEG. RETURN	BLUE	C-DOT	0.50	MONO	YES

SIGNALS						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
N_EQ-N	PROPOSED SIGNAL EQUIPMENT	232	CONT	0.50	MONO	YES
N_EQ-X	EXISTING SIGNAL EQUIPMENT	231	CONT	0.25	MONO	YES
N_CAB-X	SIGNAL CABLES EXISTING	201	PHANTOM	0.25	MONO	YES
N_CAB-N	SIGNAL CABLES NEW	201	DIVIDE	0.25	MONO	YES

TELECOMMUNICATIONS						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
V_CBL-N	PROPOSED COMMS CABLES	202	PHANTOM	0.70	MONO	YES
V_CBL-X	EXISTING COMMS CABLES	201	PHANTOM	0.25	MONO	YES
V_NAV	NAVIGATION EQUIPMENT	214	CONT	0.25	MONO	YES
V_OPTIC-N	PROPOSED FIBER OPTIC CABLE	192	PHANT2	0.70	MONO	YES
V_OPTIC-X	EXISTING FIBRE OPTIC CABLE	191	PHANT2	0.25	MONO	YES
V_PNT-N	PROPOSED VOICE/DATA POINT	YELLOW	CONT	0.35	MONO	YES
V_PNT-X	EXISTING VOICE/DATA POINT	9	CONT	0.18	MONO	YES
V_REM	REMOVED/OBSOLETE COMMS ITEMS	CYAN	DASH	0.25	MONO	YES

BRIDGE/MARINE						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
B_ABUT	ABUTMENT	GREEN	CONT	0.5	MONO	YES
B_BOL	BOLLARD	GREEN	CONT	0.5	MONO	YES
B_BORE	BOREHOLES	YELLOW	CONT	0.25	MONO	YES
B_CENT	CENTRE LINE	RED	CENTRE	0.18	MONO	YES
B_CONC	CONCRETE	GREEN	CONT	0.5	MONO	YES
B_CONTH	CONCRETE THIN	RED	CONT	0.18	MONO	YES
B_CONTHK	CONCRETE THIC	GREEN	CONT	0.5	MONO	YES



Note: If hardcopy, check electronic system for latest revision

BRIDGE/MARINE						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
B_CONMED	CONCRETE MED	YELLOW	CONT	0.25	MONO	YES
B_CONHIDTH	CONC HIDE THIN	RED	DASHED	0.18	MONO	YES
B_CONHIDTH	CONC HIDE THIC	YELLOW	DASHED	0.25	MONO	YES
B_CONCHIDM	CONC HIDE MED	WHITE	DASHED	0.35	MONO	YES
B_CONCHAT	CONC HATCH	RED	CONT	0.18	MONO	YES
B_CONCSHAD	CONC SHADE	11	GREYSCA		GREY	YES
B_CONCSHAD	CONC SHADE	12	GREYSCA		GREY	YES
B_CONCSHAD	CONC SHADE	13	GREYSCA		GREY	YES
B_CONCPIPE	CONC PIPES	WHITE	CONT	0.35	MONO	YES
B_CONTT	CONTOUR INTER	RED	CONT	0.18	MONO	YES
B_CONTMN	CONTOUR MAIN	YELLOW	CONT	0.25	MONO	YES
B_CADAS	CADASTRALS	RED	CONT	0.18	MONO	YES
B_CAISS	CAISSONS	WHITE	CONT	0.35	MONO	YES
B_COORD	COORDINATES	YELLOW	CONT	0.25	MONO	YES
B_DECK	DECK SLAB	WHITE	CONT	0.35	MONO	YES
B_EXIST	EXISTING	RED	CONT	0.18	MONO	YES
B-FEND	FENDERS	WHITE	CONT	0.35	MONO	YES
B_FIREHYD	FIRE HYDRANT	WHITE	CONT	0.35	MONO	YES
B_GRID	GRID LINES	RED	CENTRE	0.18	MONO	YES
B_HAND	HANDRAILING	WHITE	CONT	0.35	MONO	YES
B_KEYPL	KEY PLAN	YELLOW	CONT	0.25	MONO	YES
B_LOGRID	LO GRIDLINES	RED	CONT	0.18	MONO	YES
B_MANH	MANHOLES	WHITE	CONT	0.35	MONO	YES
B_MASCAP	MASS CAPPING	WHITE	CONT	0.35	MONO	YES
B_PAVE	PAVING	WHITE	CONT	0.35	MONO	YES
B_PARA	PARAPETS	WHITE	CONT	0.35	MONO	YES
B_PCBEAM	PC BEAMS	WHITE	CONT	0.35	MONO	YES
B_PIER	PIERS	WHITE	CONT	0.35	MONO	YES
B_REINFTHN	REBAR THIN	RED	CONT	0.18	MONO	YES
B_REINFTHC	REBAR THICK	GREEN	CONT	0.5	MONO	YES
B_REINFMED	REBAR MEDIUM	WHITE	CONT	0.35	MONO	YES
B_REINFHIDT	REBAR HIDE THN	RED	DASHED	0.18	MONO	YES
B_REINFHIDM	REBAR HIDE MED	YELLOW	DASHED	0.25	MONO	YES
B_REINFDIM	REBAR DIMENS	RED	CONT	0.18	MONO	YES
B_STEEL	STEEL WORKS	WHITE	CONT	0.35	MONO	YES
B_SLTDRAIN	SLOT DRAIN	WHITE	CONT	0.35	MONO	YES
B_WGS	WGS84 GRID	RED	CONT	0.18	MONO	YES
B_WWALL	WING WALLS	WHITE	CONT	0.35	MONO	YES
B_RETWALL	RETAIN WALL	WHITE	CONT	0.35	MONO	YES
B_GEN1	GENERAL 0.18	RED	CONT	0.18	MONO	YES
B_GEN2	GENERAL 0.25	YELLOW	CONT	0.25	MONO	YES

Note: If hardcopy, check electronic system for latest revision

BRIDGE/MARINE						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
B_GEN3	GENERAL 0.35	WHITE	CONT	0.35	MONO	YES
B_GEN4	GENERAL 0.5	GREEN	CONT	0.5	MONO	YES
B_GEN5	GENERAL 0.7	CYAN	CONT	0.7	MONO	YES

WATER (CIVIL)						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
W_PROP1	OIL SEP/BLDGS	GREEN	CONT	0.5	MONO	YES
W_PROP2	STRUCTURES	GREEN	DASHED	0.5	MONO	YES
W_PROP3	PIPES	WHITE	CENTRE	0.5	MONO	YES
W_REBAR1	LAYOUT	WHITE	CONT	0.7	MONO	YES
W_REBAR2	REINFORCING	BLUE	CONT	0.7	MONO	YES
W_REBAR3	REINFORCING	BLUE	DASHED	0.7	MONO	YES
W_REBAR4	LAYOUT	WHITE	DASHED	0.7	MONO	YES

PERWAY LAYERS						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
P_CAT-G	CATTLE GRID	GREEN	CONT	0.25	MONO	YES
P_GEOT	GEOTECHNICAL DATA	WHITE	CONT	0.25	MONO	YES
P_GR-LAY	LAYERWORKS	35	CONT	0.25	MONO	YES
P_TACHY-T	TACHY TEXT	WHITE	CONT	0.25	MONO	YES
P_TACHY-L	TACHY LEVEL	WHITE	CONT	0.25	MONO	YES
P_TACHY-L	TACHY POINTS	WHITE	CONT	0.25	MONO	YES
P_RD-G	ROAD GRAVEL	41	DASHED	0.25	MONO	YES
P_RD-M	ROAD MAIN	WHITE	CONT	0.25	MONO	YES
P_RD-S	ROAD SIGNS	WHITE	CONT	0.25	MONO	YES
P_TR-DES	TRACK DESIGN	RED	CONT	0.25	MONO	YES
P_TR-CO	TRACK CO-ORDS	WHITE	CONT	0.25	MONO	YES
P_TR-F	TRACK FUTURE	ORANGE	CONT	0.25	MONO	YES
P_TR-C	TRACK CENTRE LINE	WHITE	CENTER	0.25	MONO	YES
P_TR-TO	TRACK TURNOUTS	WHITE	CONT	0.25	MONO	YES
P_TR-UP	TRACK UPLIFT	252	HIDDEN	0.25	MONO	YES
P_TR-S	TRACK SLEEPERS	WHITE	CONT	0.25	MONO	YES
P_TR-R	TRACK RAILS	WHITE	CONT	0.25	MONO	YES
P_TR-EQ	TRACK EQUIPMENT	WHITE	CONT	0.25	MONO	YES
P_TR-SUR	TRACK SURVEYED	WHITE	CONT	0.25	MONO	YES

Note: If hardcopy, check electronic system for latest revision

PERWAY LAYERS						
NAME	DESCRIPTION	COLOUR	LINE TYPE	LINE WEIGHT	PLOT STYLE	PLOT
P_TEL-T	CABLE ROUTE TELCOM	201	PHANTOM	0.25	MONO	YES
P_TEL-N	CABLE ROUTE NEOTEL	201	DIVIDE	0.25	MONO	YES
P_TEL-TR	CABLE ROUTE TRANSNET	201	DASHDOT	0.25	MONO	YES
P_SUBS-D	SUBSOIL DRAIN, GEOFABRIC, FINDRAIN	111	CONT	0.25	MONO	YES

6.12 Section Lines



Section lines are to be as above. They are to be inserted as a block from the symbols library.

6.13 North Point



The North Point above is to be used. It is to be inserted as a block from the symbols library.

Note: If hardcopy, check electronic system for latest revision

6.14 The Title Block

The Title Block must reflect the following:


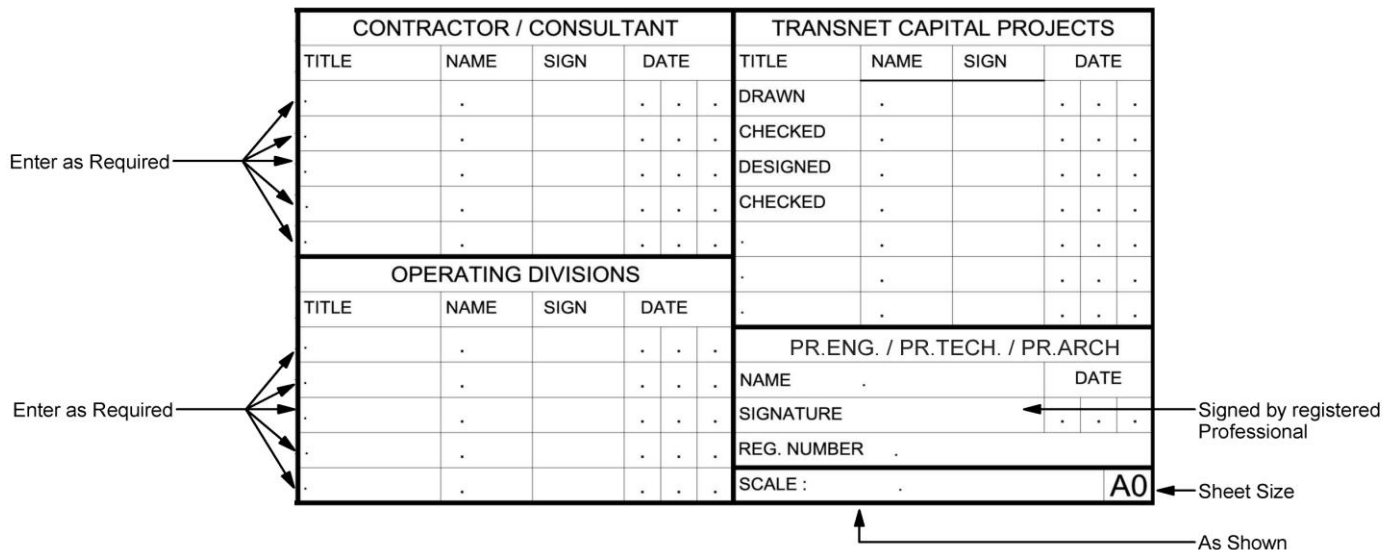
Transnet Capital Projects										
TRANSNET LTD (TRADING AS TRANSNET CAPITAL PROJECTS) : REG. NO. 1990/000900/06										
237 MAHATMA GANDHI ROAD DURBAN										
P.O. BOX 1073, DURBAN										
TEL: 031 361 1696										Relevant Address
FAX: 0866 770815										Relevant telephone and fax numbers
PORT OF DURBAN										Area Title
PIER 2: PORT OF DURBAN										First Line: Project description
CONTAINER TERMINAL										Second Line: Item description
CVR WORKSHOP										Third Line: Item description (Optional)
GROUND FLOOR PLAN										Fourth Line: General drawing description, type of drawing e.g.: Plan, Section, Elevation, General Arrangement etc.
PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID		
.	TD	
7 digit sequential number	Operating Division	Facility Breakdown Structure: sometimes referred to as WBS (Work Breakdown Structure)	Discipline	Document Type	Sequential Drawing number	Sheet Number	Revision Number	Originator of the Drawing		
These will be supplied by Document Control										

Figure 6.14.1 The Title Block

Note: If hardcopy, check electronic system for latest revision

6.15 Fields in the Signature Block

The Fields in the title block must reflect the following:



CONTRACTOR / CONSULTANT				TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
.	.	.	.	DRAWN	.	.	.
.	.	.	.	CHECKED	.	.	.
.	.	.	.	DESIGNED	.	.	.
.	.	.	.	CHECKED	.	.	.
.
.
OPERATING DIVISIONS				PR.ENG. / PR.TECH. / PR.ARCH			
TITLE	NAME	SIGN	DATE	NAME	DATE		
.	.	.	.	SIGNATURE	.		
.	.	.	.	REG. NUMBER	.		
.	.	.	.	SCALE :	A0		

Figure 6.15.1 Fields in the Signature Block

6.16 Revised Drawings

All amendments to drawings must be clearly referenced and indicated on the original drawing together with the draughtperson's name and date. The amendment block has provision for a checker's signature, an approval signature and a date.

Drawings and amendments to drawings shall be indexed as follows:

- Internal TCP issue to have No. as ` 1, 2, 3 etc. Description to always read ` Issued internal review'.
- Tender drawings: No. to be alphabetical ie.: OA, OB, OC etc.
- Construction drawings : No. to be alpha-numerical ie.: 01, 02, 03 etc.
- As built drawings: ZZ
- All drawings shall have the revision raised to the next applicable revision reference (as stated above) which shall be inserted in the revision box of the drawing title block before any drafting is started.
- Previously revised drawings to be saved as and re-named to reflect the current revision number. Revisions to be noted from bottom to top and previous revision clouds to be removed from drawings.

[illegible]

Revision & Hold Clouds

-

17

Note: If hardcopy, check electronic system for latest revision

6.17 Reference Drawings

Drawing number as reflected in drawing title.

Drawing description as per general drawing description in title block.

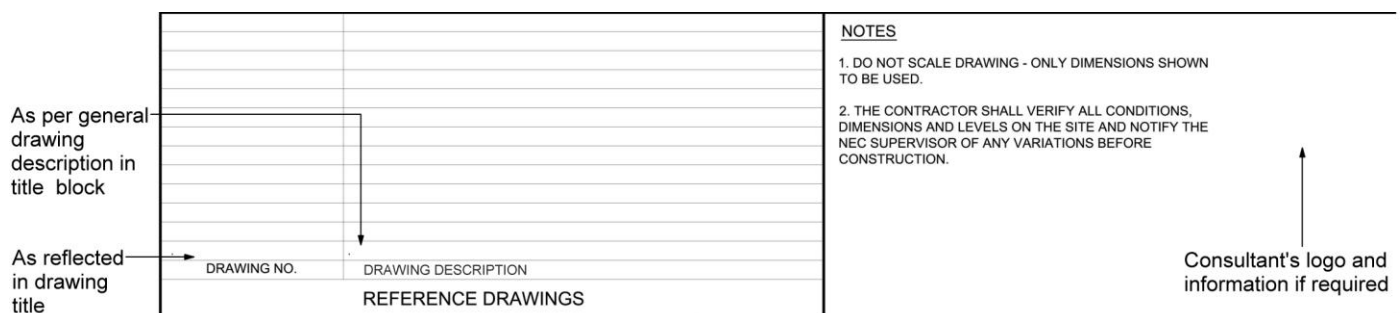


Figure 6.17.1 Reference Drawings

6.18 Key Plan usage

Key plans for different areas in the project are provided and should be referenced in. This approach allows any changes to the key plan to appear immediately on all drawings plotted from that point on.

Note: The drawing subject area is to be hatched on the current drawing.

6.19 Symbols and abbreviations

For Standard symbols Refer to:

- SANS 10143: Building drawing practice
- BBB0041: Preparation of drawings for Transnet Freight Rail
- SANS 1044: Welding Part II: Symbols
- BS 3939: Graphical symbols for electrical power, telecommunications and electronic diagrams
- Z148: Symbols for Signalling

If it is necessary to use symbols which are not standard national symbols, or located on the Transnet template, a new symbol may be created with its description tabled on the applicable drawing.

Note: If hardcopy, check electronic system for latest revision

6.20 Identification of Views

All views shall be identified in the following format:

- The two main forms of projection shall be used namely third and first angle projection.
- Indicate scale only if scale varies from title block scale
- Reference to a drawing where a section or a detail was taken is required if the view is shown on another drawing.
- Letters shall be used for details. Numbers shall be used for elevations and sections. Do not use letters "I" and "O"

Type	Format	Example
Details	Alpha	DETAIL A
Section	Numeric	SECTION 1
View	Alpha	VIEW X
Items	Alpha	ITEM A – TROLLEY FRAME

ANNEXURE 3

TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2022/08/0868/9744/RFP

DESCRIPTION OF THE WORKS: APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING, PORT OF NGQURA FOR A PERIOD OF FIVE (5) MONTHS.



Doc Number: _____

Contractor Documentation Schedule

Contract Number: _____

Revision: _____

CDS CODE	TYPE OF DOCUMENT	NUMBER OF COPIES											
		FIRST SUBMISSION			RE-SUBMISSION			FINAL SUBMISSION			AS BUILT		
		P	E	WEEKS	P	E	WEEKS	P	E	WEEKS	P	E	WEEKS
G	DISCIPLINE: GENERAL												
G.1	CONTRACTOR DOCUMENT REGISTER												
G.2	EQUIPMENT PLOT PLAN DRAWING												
G.3	GENERAL INSTALLATION DRAWING												
G.4	PLANT INSTALLATION INSTRUCTIONS												
G.5	EQUIPMENT, MAINTENANCE AND OPERATING INSTRUCTION MANUALS												
G.6	INSTRUCTIONS FOR TRANSPORTATION & HANDLING												
G.7	INSTRUCTIONS FOR STORAGE / WAREHOUSING												
G.8	INSTRUCTIONS FOR LONG TERM STORAGE												
G.9	SPARE PARTS MANUALS												
G.10	LIST OF CONSUMABLES & CHEMICALS FOR START-UP												
G.11	LIST OF CONSUMABLES & CHEMICALS FOR ONE YEAR												
G.12	TRAINING PROGRAMME												
G.13	TRAINING MANUAL												
G.14	TWO YEARS OPERATING SPARE PARTS												
G.15	COMMISSIONING SPARE PARTS												
G.16	SITE SERVICES REQUIREMENT												
G.17	ERECTION PROCEDURE / METHOD STATEMENT												
G.18	DESIGN CALCULATIONS / CRITERIA												
G.19	EQUIPMENT DATA SHEETS / COMPLETION OF ENGINEERS DATA SHEETS												
G.20	DETAILED TECHNICAL SPECIFICATION												
G.21	NOISE & VIBRATION DATA												
G.22	NOISE & VIBRATION TEST CERTIFICATES												
G.23	BILLS OF QUANTITIES												
G.24	LIST OF SPECIAL TOOLS												
G.25	PERFORMANCE TEST CERTIFICATES												

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TENDER NUMBER: TNPA/2022/08/0868/9744/RFP

DESCRIPTION OF THE WORKS: APPOINTMENT OF A SERVICE PROVIDER TO DESIGN AND BUILD ADDITIONAL PARKING BAYS AT EMENDI ADMINISTRATION BUILDING,
PORT OF NGQURA FOR A PERIOD OF FIVE (5) MONTHS.



Doc Number: _____

Contractor Documentation Schedule

Contract Number: _____

Revision: _____

CDS CODE	TYPE OF DOCUMENT	NUMBER OF COPIES											
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		P	E	WEEKS	P	E	WEEKS	P	E	WEEKS	P	E	WEEKS
G.26	HEAVY EQUIPMENT LIFTS (> 20 TONS)												
G.27	FACTORY ACCEPTANCE TEST DOSSIER												
G.28	PLANT COMMISSIONING MANUAL												
G.29	PLANT COMMISSIONING DOSSIER												
G.30	PHOTOGRAPHS												
A	DISCIPLINE: ARCHITECTURAL												
A.1	ARCHITECTURAL GENERAL ARRANGEMENTS												
A.2	ARCHITECTURAL SCHEDULES												
A.3	ARCHITECTURAL DETAIL DRAWINGS												
C	DISCIPLINE: CIVIL												
C.1	CIVIL LAYOUT DRAWING												
C.2	CONCRETE LAYOUT DRAWINGS												
C.3	PILING LAYOUT DRAWINGS												
C.4	CONCRETE DETAIL DRAWINGS												
C.5	COLUMN LOADING DRAWINGS												
C.6	REINFORCEMENT DETAIL DRAWINGS												
C.7	REINFORCEMENT BENDING/SCHEDULES												
C.8	CAST-IN ITEMS DRAWINGS/SCHEDULES												
C.9	DYNAMIC ANALYSIS REPORT												
C.10	GEOTECHNICAL REPORT												
C.11	FOUNDATION DRAWINGS												
C.12	ALIGNMENT DRAWINGS												
C.13	TEMPORARY WORKS DRAWINGS												
E	DISCIPLINE: ELECTRICAL												
E.1	ELECTRICAL LOAD LISTS												
E.2	SINGLE LINE DIAGRAMS												
E.3	SCHEMATIC AND CONTROL DIAGRAMS												
E.4	CABLE SCHEDULES												
E.5	HAZARDOUS AREA CLASSIFICATION DRAWINGS												
E.6	HAZARDOUS AREA COMPLIANCE CERTIFICATE												

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E.7	FACTORY ACCEPTANCE TESTS (FATs)												
E.8	CERTIFICATE OF COMPLIANCE												
E.9	FACTORY TEST REPORTS AND CERTIFICATES												
E.10	RELAY PROTECTION SETTINGS / CALCULATIONS												
E.11	LAYOUT AND ROUTING DRAWINGS (INCL. EARTHING)												
E.12	CONNECTION DRAWINGS / LISTS												
E.13	CABLE ROUTING DRAWINGS												
E.14	MOTOR START CALCULATIONS												
E.15	LIGHTNING PROTECTION AND UNDERGROUND EARTHING DETAILS												
E.16	MOTOR OVERLOAD REPLAY SETTINGS												
E.17	LIGHTING LAYOUT												
E.18	TRANSFORMER DESIGN DATA												
E.19	MCC & PANEL LAYOUTS												
E.20	MOTOR LISTS												
E.21	GENERAL ARRANGEMENT DRAWINGS												
E.22	PRELIMINARY POWER CONSUMPTION LIST												
F	DISCIPLINE: PROCESS												
F.1	MASS BALANCE / ENERGY BALANCE												
F.2	DESIGN BASIS DOCUMENT												
F.3	PROCESS DESIGN CALCULATIONS												
F.4	PROCESS FLOW DIAGRAM (PFD)												
F.5	UTILITY FLOW DIAGRAM (UFD)												
F.6	PIPING & INSTRUMENTATION DIAGRAM (P&ID)												
F.7	UTILITY PIPING & INSTRUMENTATION DIAGRAM												
F.8	PROCESS DESCRIPTION												
F.9	PROCESS SAFETY DESCRIPTION (PSD)												
F.10	EQUIPMENT FUNCTIONAL SPECIFICATION (DATASHEET)												
F.11	HAZOP DOSSIER												

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F.12	HAZOP CLOSE-OUT REPORT												
F.13	SYMBOLGY SCHEDULE												
F.14	FLUID IDENTIFIER LIST												
F.15	EFFLUENT & EMISSION LIST												
F.16	UTILITIES CONSUMPTION LIST												
F.17	CONTROL PHILOSOPHY												
F.18	MATERIALS SAFETY DATA SHEETS												
F.19	SHUTDOWN & EMERGENCY PHILOSOPHY PROCEDURE												
HS	DISCIPLINE: HEALTH & SAFETY												
HS.1	APPOINTMENTS MADE IN TERMS OF THE OHS ACT 85 OF 1993												
HS.2	CV OF THE PROPOSED SAFTY OFFICER FOR APPROVAL												
HS.3	SAFETY MANAGEMENT PLAN												
HS.4	DECLARATION THAT ALL EMPLOYEES HAVE BEEN TRAINED AND FOUND COMPETENT FOR THEIR TASKS												
HS.5	DECLARATION THAT EACH PIECE OF EQUIPMENT BEING USED ON SITE IS SAFE FOR USE AND WILL BE MAINTAINED PROPERLY												
HS.6	HSE MANAGEMENT RISK ASSESSMENT												
J	DISCIPLINE: INSTRUMENTATION & CONTROL SYSTEMS												
J.1	INSTRUMENT LOCATION PLANS												
J.2	CABLE RACKING & ROUTING DRAWINGS												
J.3	CABLE BLOCK DIAGRAMS												
J.4	WIRING & CONNECTION SCHEDULES												
J.5	CABLE LIST												
J.6	POWER DISTRIBUTION DIAGRAM												
J.7	EARTHING DIAGRAM												
J.8	LOOP DRAWINGS												
J.9	CONTROL SCHEMATICS												
J.10	LOGIC DIAGRAMS												

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		P	E	WEEKS	P	E	WEEKS	P	E	WEEKS	P	E	WEEKS
J.11	ERECTION MATERIAL – TAKE OFF – BOM												
J.12	FUNCTIONAL SPECIFICATIONS												
J.13	INSTRUMENT LIST												
J.14	CONTROL SYSTEM SOFTWARE DOCUMENTED PROGRAM												
J.15	POWER SUPPLY CALCULATIONS												
J.16	AIR SUPPLY CALCULATIONS												
J.17	CALIBRATION / TEST CERTIFICATES												
J.18	FAT SPECIFICATION AND PROGRAM												
J.19	SAT SPECIFICATION AND PROGRAM												
J.20	PANEL / CABINET LAYOUT												
J.21	USER MANUAL												
J.22	I/O LIST												
J.23	TRIP / ALARM SCHEDULE												
J.24	CONTROL SYSTEM HARDWARE CONFIGURATION												
J.25	SEQUENCE & INTERLOCK DEFINITION DOCUMENT (SIDD)												
J.26	INSTRUMENT DATA SHEETS												
J.27	CONTROL PHILOSOPHY												
J.28	SAFETY INTERLOCK SCHEDULE												
L	DISCIPLINE: ENVIRONMENTAL												
L.1	ENVIRONMENTAL MANAGEMENT PLAN												
M	DISCIPLINE: MECHANICAL												
M.1	EQUIPMENT FUNCTIONAL SPECIFICATION												
M.2	EQUIPMENT GENERAL ARRANGEMENT DRAWING												
M.3	DETAIL DRAWINGS												
M.4	EQUIPMENT BASE PLATE DRAWINGS												
M.5	PERMISSIBLE EXTERNAL LOADS												
M.6	LUBRICATION SHEETS												
M.7	NAMEPLATE DRAWINGS												

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		P	E	WEEKS	P	E	WEEKS	P	E	WEEKS	P	E	WEEKS
M.8	EQUIPMENT LIST												
M.9	OPERATING CURVES												
P	DISCIPLINE: PIPING												
P.1	PIPING MATERIAL SPECIFICATION												
P.2	PIPING ROUTING GENERAL ARRANGEMENT												
P.3	PIPING ISOMETRICS												
P.4	PIPING LINE LISTS												
P.5	HYDRAULIC DIAGRAMS												
P.6	PNEUMATIC DIAGRAMS												
P.7	HVAC DRAWINGS												
P.8	FIRE PROTECTION / DETECTION DRAWINGS												
P.9	FAILURE MODES AND EFFECTS ANALYSIS (FMEA)												
Q	DISCIPLINE: QUALITY MANAGEMENT												
Q.1	PROJECT QUALITY PLAN/MANUAL												
Q.2	TYPICAL QUALITY CONTROL PLAN												
Q.3	MANUFACTURING QUALITY CONTROL PLANS												
Q.4	QC DOSSIER / CODE DATA BOOK – MANUFACTURE												
Q.5	QC DOSSIER / CODE DATA BOOK - CONSTRUCTION												
Q.6	QC DOSSIER OR CODE DATA BOOKS INDICES												
Q.7	PROCEDURES												
Q.8	WORK INSTRUCTIONS/GUIDANCE NOTES												
Q.9	PROCESS CHARTS												
Q.10	ISO CERTIFICATES												
Q.11	LIST OF SUPPLIERS												
Q.12	QUALITY REPRESENTATIVE CV												
Q.13	AUDITS												
Q.14	ORGANOGRAM												
Q.15	WELDING PROCEDURE SPECIFICATIONS												
Q.16	WELDING PROCEDURE QUALIFICATION RECORDS												
Q.17	WELDER QUALIFICATION RECORDS												

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Q.18	WELDING CONSUMABLES CERTIFICATES												
Q.19	WELD MAPS												
Q.20	NDE PROCEDURES												
Q.21	NDE REPORTS												
Q.22	NDE OPERATOR QUALIFICATIONS												
Q.23	PRESSURE TEST CERTIFICATES												
Q.24	MATERIAL CERTIFICATES												
Q.25	INSPECTION REPORTS												
Q.26	PAINTING CERTIFICATES												
Q.27	CONSTRUCTION / INSTALLATION QUALITY CONTROL PLANS												
Q.28	TEST PROCEDURES												
Q.29	TEST REPORTS & CERTIFICATION												
Q.30	HEAT TREATMENT PROCEDURES												
Q.31	HEAT TREATMENT REPORTS (INCL. CHARTS)												
Q.32	CERTIFICATES OF CONFORMITY												
Q.33	REPAIR PROCEDURES (BEFORE PREPARING)												
Q.34	CONCESSION REPORTS												
Q.35	FACTORY ACCEPTANCE TEST DOSSIER												
Q.36	NON CONFORMANCE REPORT												
Q.37	NON CONFORMANCE REGISTER												
Q.38	SITE ACCEPTANCE TEST DOSSIER/PROCEDURE												
R	DISCIPLINE: INDUSTRIAL RELATIONS												
R.1	CV OF PROPOSED IR OFFICER/PRACTITIONER INCL. CONTRACTOR MOTIVATION												
R.2	TRAINING SKILLS PLAN FOR 'LOCALS'												
R.3	CONTRACTOR SITE CONTACT PHONE NUMBERS												
R.4	INDEX AND ATTENDANCE OF THE TRAINING IN THE PLA PROCEDURES												
R.5	LIST OF CONTRACTOR NAMES FOR STRIKE HANDLING												

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		P	E	WEEKS	P	E	WEEKS	P	E	WEEKS	P	E	WEEKS
R.6	TRANSPORT OF LOCAL EMPLOYEES ARRANGEMENT DETAILS												
R.7	BOARD RESOLUTION ON POWERS OF SITE MANAGER ON SITE												
R.8	WORKMAN'S COMPENSATION CERTIFICATE OF GOOD STANDING												
R.9	HISTOGRAMS FOR VILLAGE ACCOMMODATION												
R.10	EMPOWERMENT SCHEDULE AND HISTOGRAM												
X	DISCIPLINE; STRUCTURE												
X.1	SHOP DETAIL DRAWINGS												
X.2	SHOP PRE ASSEMBLY DETAILS												
X.3	ERECTION ASSEMBLY DRAWINGS												
X.4	LAYOUT DRAWINGS												
X.5	CLADDING & FIXING DETAILS												
X.6	VENTILATOR DETAIL DRAWINGS												
X.7	GENERAL ARRANGEMENTS												
X.8	DETAIL DRAWINGS												

Legend:

P - The number of Printed hard copies required.

E - The number of Electronic media sets required.

TRANSNET NATIONAL PORTS AUTHORITY

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		P	E	WEEKS	P	E	WEEKS	P	E	WEEKS	P	E	WEEKS

Codes:

The following codes indicate weeks relative to the following events that documentation must be submitted. Negative (-) indicates weeks prior to the event, positive (+) indicates weeks after the event and the code only indicates at the event.

- BC Before Commissioning
- CD Contract Date or Date of Notification to proceed
- CS Construction Start
- CC Construction Completion
- C Completion
- DD During Design
- DS Delivery to Site
- FS Fabrication Start
- PD Weeks Prior to delivery to Site that the document must be submitted.
- WD Document to be submitted With Delivery.

Notes:

1. "First Submission Weeks" column indicates the maximum number of weeks between the Contract Date and the first submission of the document.
2. "Final Submission Weeks" column indicates the maximum number of weeks between the return of documents coded C1 or C2 after review, and the Final certified submission of the document.
3. "As-Built Submission Weeks" column indicates the maximum number of weeks between completion of Construction and submission of the document updated with As-Built information.

DOC-FAT-0001 Rev.00



TRANSNET

GENERAL QUALITY REQUIREMENTS FOR CONTRACTORS AND SUPPLIERS

QAL-STD-0001

Document Number	QAL-STD-0001
Version Number	0.0
Review Date	11 August 2020

SUMMARY VERSION CONTROL

[illegible]

Note: Only the latest amendments and/or additions are reflected in italics in the body of the document.

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1. Purpose

This Specification outlines the minimum requirements to ensure that products and services supplied to TRANSNET are manufactured, provided, constructed or installed in accordance with all specified requirements as defined in the Contract, all associated specifications, drawings, codes and standards.

2. Definitions / Abbreviations

Term, Abbreviation	Meaning
<i>Contract:</i>	Formal document evidencing agreement between <i>Employer</i> and <i>Contractor</i> for supply of on site or off site services (generic term used for Purchase Orders, Contracts and Service Orders in this Standard).
<i>Contractor:</i>	The party to a <i>contract</i> that provides services to the <i>Employer</i> (generic term used for Vendors, Suppliers, Contractors, Consultants, etc.).
<i>Contractor</i> Documentation Schedule (CDS)	A schedule specifying the <i>Employer's</i> requirements for the document types to be submitted by the <i>Contractor</i> at various stages of the <i>Contract</i> and the timing of the submissions.
Data:	All drawings/documents/data/information/DPs and IOMs required to be supplied under the <i>Contract</i> .
Data Pack (DP):	A compilation of manufacturing data, certification, inspection and testing records prepared by the <i>Contractor</i> to verify compliance with the Contractual requirements.
<i>Employer:</i>	The party to a <i>Contract</i> or Purchase Order to whom the goods are supplied or for whom the work or services are performed. In the context of this document, Transnet Capital Projects is the <i>Employer</i> .

Term, Abbreviation	Meaning
Field Inspection Checklist (FIC):	A document that details the checks, requirements and test parameters for each type of equipment to permit field installation and pre-commissioning of the equipment
Inspection Release Report (IRR):	A document issued to the <i>Contractor</i> by TRANSNET advising release of materials for shipment. This does not relieve the <i>Contractor</i> of its obligations in accordance with the Terms and Conditions of the <i>Contract</i> .
Inspection Waiver Report (IWR):	A document issued to the <i>Contractor</i> by TRANSNET advising that TRANSNET has waived final inspection for the materials listed in this document. The issue of this report does not preclude further inspections by TRANSNET. It is issued without prejudice and does not relieve the <i>Contractor</i> from the guarantees and obligations included in the <i>Contract</i> .
Installation and Operating Manual (IOM):	A document prepared by the <i>Contractor</i> providing relevant information applicable to the installation and maintenance of the specific equipment, including data relating to consumables (eg. Oils, etc.)
Non Conformance (NC)	Material, product or workmanship which is not in accordance with the requirements of the <i>Contract</i> .
Non-Conformance Report (NCR):	A document initiated by either TRANSNET or the <i>Contractor</i> advising that certain materials/products/workmanship provided by the <i>Contractor</i> do not conform to the required standards and specifications.
Project Quality Plan (PQP):	A document that outlines the <i>Contractor's</i> strategy, methodology, resources allocation, Quality Assurance and Quality Control coordination activities to ensure that Goods and Services supplied meet or exceed the

Term, Abbreviation	Meaning
	requirements defined in the <i>Contract</i> drawings, codes and standards.
Quality Assurance (QA):	A formal methodology designed to assess the quality of products or services provided.
Quality Control (QC):	A set of activities intended to ensure that quality requirements are actually being met.
Quality Control Plan (QCP):	A document outlining specific manufacturing/construction inspection and testing requirements, including responsibilities, test acceptance criteria, nomination of witness and hold points.
Technical Query Note (TQN):	A document used by the <i>Contractor</i> to formally clarify a Technical Query related to the scope of supply. This should not be used where a Non-Conformance Report has already been initiated.
TRANSNET:	Transnet SOE Limited
<i>Works Information:</i>	Refers to the <i>Works Information</i> as defined in the <i>Contract</i>

3. **Applicable Documents**

3.1 **General**

All work performed shall comply with the requirements of this Specification, the documentation referenced in the *Contract* and the latest revision/edition of the relevant Codes and Standards referenced herein.

3.2 **Statutory Regulations**

Occupational Health & Safety Act, Act No 85, of 1993 and Regulations as amended.

3.3 **Codes and Standards**

Document No.	Title
ISO 9001:2008/2015	International Standard Series Quality Systems

4. Quality System

4.1 General

The Contractor is responsible for all quality activities necessary to ensure the Work meets the requirements specified in the Contract, and shall manage and coordinate all Quality aspects of the Work in accordance with the requirements of this Specification, together with the Contractor's PQP and QCPs once reviewed and accepted by TRANSNET.

4.2 **Contractor Quality System Requirements**

The *Contractor* shall have and maintain a documented Quality Management System. The *Contractor* may be required to demonstrate its use to TRANSNET. The *Contractor's* Quality Management System should be in accordance with the requirements of International Standard ISO 9001.

The *Contractor* submits the following Quality System documentation to TRANSNET at the time of tender:

- Project Quality Plan
- Quality Policy
- Index of Procedures to be used
- Programme of internal and external audits

4.3 **Contractor / Supplier Documentation Submittal Requirements**

The *Contractor* will make formal submission of this Quality Documentation on award of the *Contract* and at the times defined in the *Contractor's* Documentation Schedule, included in the *Works Information* for the *Contract*.

The Contractor's responsibilities are defined in terms of *DOC-STD-0001* which outlines the standard requirements for preparation, submission, receipt, review, and collection of Technical and (or) Deliverable Documentation, as detailed in the Contractor Documentation Schedule (CDS).

TRANSNET uses the *Contractor's* Documentation Schedule (CDS), included in the *Works Information* for the *Contract*, to indicate those documents required to be submitted for information/review and/or acceptance.

The *Contractor* develops and maintains a comprehensive register of documents (*Contractor's* Documentation Register – CDR) that will be generated throughout the project.

The CDR includes all quality related documents. The CDR is a 'live' document and Is submitted to TRANSNET for review following each revision by the *Contractor*. The CDR indicates the dates of issue of the documents taking into account sufficient time to allow for the TRANSNET review/acceptance cycle prior to the document being required for use.

TRANSNET includes a standard template for the CDR (DOC-FAT-0002) in the Starter Pack issued to the *Contractor* at the start of every *contract*.

4.4 **Project Quality Plan**

Where specified, the *Contractor* submits a PQP to TRANSNET within the period stated in the CDS and in any event not later than 28 days after the *Contract* start date. The PQP details how the *Contractor's* Quality System will be applied to the Scope of Work specified in the *Contract*, and shall address the following:

- Satisfying the technical and quality requirements of the *Contractor's* Scope of Work, and relevant elements of the applicable ISO 9001 standard
- Include all quality activities relevant to the Scope of Work, identifying all procedures, reviews, audits, controls and records used to control and verify compliance with the specified Contractual requirements.
- Include a listing of all special processes (e.g. welding and non-destructive testing, cube testing etc.) envisaged for use, including confirmation of personnel certification as required.
- Include all proposed method statements (for site based work activities).
- Include a description of the Contractor's project organisation, with key positions and responsibilities identified and individuals named. The organisation structure shall also indicate the resources committed to the management and coordination of QA / QC activities.
- Include a listing of all Quality Control Plans (QCPs), and associated Field Inspection Checklists (FICs), as applicable.
- Identify in the PQP any Sub-Contractor/Sub-Supplier work. Sub-Contractor/Sub-Supplier plans are approved by the Contractor, and a copy forwarded to TRANSNET for information.
- Include the proposed Authorised Inspection Authority (where applicable - for pressurised equipment and systems).
- Include a schedule of proposed quality records.

The PQP shall be controlled and re-submitted for approval when required to incorporate any change necessary during the *Contract* duration to ensure that the document is maintained as an effective control, change management and records. The change management will be done to an agreed policy or procedure.

Note: Where the *Contractor* is required to provide a PQP, no work shall commence until the PQP is accepted by TRANSNET.

4.5 **Procedures**

The *Contractor's* PQP and procedures shall address the system elements and activities appropriate to the Scope of Work, in compliance with the specified Quality Standard.

Where specified, the *Contractor* submits copies of Quality Procedures for review. In addition, the *Contractor* ensures that copies of all Procedures relevant to the Scope of Work are available for reference by TRANSNET at each work location.

These will include, as applicable, the following:

4.5.1 **Document Control**

The *Contractor's* PQP shall provide a description of how documents provided by TRANSNET to the *Contractor* are to be managed. The description shall address as a minimum:

- Management tools and databases
- Receipt, registration and maintenance
- Internal and external distribution to *Employer*, third parties and Sub-Contractors
- Management of Codes, Standards and Specifications
- Internal review and approval routines and authorities
- How it is ensured that the correct revisions of documents are available at the point of use including retention periods for all documentation

4.5.2 **Design Control**

Where the *Contractor* is responsible for any aspect of design related to the Scope of Work, the Quality Plan shall describe the *Contractor's* methods and procedures for the control of these design activities.

4.5.3 **Procurement**

Where the *Contractor* is responsible for any aspect of procurement related to the Scope of Work, the Quality Plan shall describe the *Contractor's* methods and procedures for the control of these activities.

4.6 **Contractor Audits**

The *Contractor* shall:

- Carry out audits in accordance with its Quality System at its own and Sub-Contractor's facilities to ensure project quality requirements are being achieved.
- Include a QA Audit Schedule in the *Contractor* PQP submitted to TRANSNET prior to commencement of the Scope of Work. The Audit Schedule shall include all audits to be implemented by the *Contractor* and Sub-Contractor during the execution of the *Contract*.
- Where stipulated in the *Contract*, perform an audit within three months after the *Contract* start date and thereafter at a minimum frequency of three months. Audit reports are submitted to TRANSNET at the completion of each Audit. Where unsatisfactory performance is evident, TRANSNET will direct the *Contractor* to perform additional audits.

4.7 **Transnet Audit**

TRANSNET reserves the right to perform quality audits or participate as an observer in *Contractor* audits to verify compliance with the Contractual requirements. The *Contractor* shall within a time frame as agreed upon, correct any adverse audit finding advised by TRANSNET.

5. **Inspection and Testing**

5.1 **General**

TRANSNET may, at its discretion, perform surveillance inspection at the *Contractor's* premises, the premises of any Sub-Contractor or at the location of the Scope of Work.

Dependent on the nature of the Scope of Work and the frequency of inspections, TRANSNET may elect to have inspection personnel resident at the place of manufacture, fabrication, or assembly.

The *Contractor* ensures free entry and access is given to TRANSNET, certifying authorities and statutory authorities to inspect the Scope of Work and review procedures and quality

records at all parts of the *Contractor's* and Sub-Contractor's premises, or at the location of the Scope of Work while any work or test is in progress.

The *Contractor* provides TRANSNET with all necessary tools, calibrated measuring equipment, safety equipment and workspace to verify or witness tests in progress.

While TRANSNET is at the *Contractor's* premises, the *Contractor* provides, free of charge, reasonable facilities including office facilities and reasonable access to a telephone, facsimile machine and computer connection point.

The *Contractor* provides written notice within a time frame as agreed upon, to allow the attendance of TRANSNET and other representatives at nominated witness and hold points.

5.2 **Quality Control Plans**

The *Contractor* prepares and submits QCPs to TRANSNET for review in accordance with the requirements of the *Contract* and PQP.

QCPs must clearly identify all inspection, test and verification requirements to meet the Contractual obligations, specifications, drawings and related details including destructive and non-destructive testing, witness and hold points.

The *Contractor* shall not commence fabrication or manufacture prior to review and approval of the applicable QCP by TRANSNET.

QCPs shall include reference to all tests specified in the *Works Information*.

A typical format for a QCP is shown in Appendix 1. The *Contractor* may use its own format providing all information shown in the sample in Appendix 1 is included.

5.3 **Inspection Points**

The QCP identifies points in the fabrication, manufacturing and/or installation process that are selected for inspection. These points are denoted by the following inspection codes:

- Hold Point (H) Inspection points in the manufacturing cycle, beyond which work shall not proceed without the specified activity, work or function being witnessed. Hold points require written notification to TRANSNET.
- Witness Point (W) An inspection point in the manufacturing cycle that will be witnessed or verified. If TRANSNET confirms it is unable to attend after being provided with the written

notification then manufacture may proceed. Witness points require written notification to TRANSNET.

- **Review Point (R)** A point at which products and quality records are verified and endorsed. Review points are not points that require notification to TRANSNET.
- **Surveillance (S)** An inspection point in the manufacturing cycle during which any activity, work or function is observed. No formal notification is required.

The *Contractor* maintains the status of testing and inspection by progressively having the QCPs signed off.

5.4 **Revision to Quality Control Plans**

Revision of the QCP is subject to the same submission, review and acceptance routines as described for the original QCP issue.

5.5 **Kick Off Meeting**

After the *Contract* start date, and prior to manufacture, TRANSNET will require a Kick-Off Meeting with the *Contractor* to discuss fully the implications of meeting TRANSNET's quality requirements. This meeting may be held as part of the *Contract* kick-off meeting for each package or may be a separate meeting, subject to the critical or complex nature of the work. This requirement for a pre-inspection meeting may be repeated when Sub-Contractors of key equipment are engaged.

5.6 **Schedule of Inspection**

The *Contractor* shall submit a Schedule showing the proposed dates for inspections and tests nominated in the QCP where witness and hold points are required. The Schedule shall be regularly updated with progress and issued to TRANSNET to show the current inspection and test status.

5.7 **Field Inspection Checklists**

For site installation and construction activities, the *Contractor* prepares Field Inspection Checklists (FICs) to permit inspection and testing of installed equipment and constructed facilities in accordance with the respective QCPs.

FICs are submitted to TRANSNET for initial review. FICs are used to record the results of inspection and testing (where applicable). On completion, FICs are submitted to TRANSNET

to confirm satisfactory completion of the tests and inspections at nominated QCP witness and hold points.

5.8 **Inspection Notification**

The *Contractor* notifies TRANSNET in writing at least two calendar weeks prior to the advent of inspections or tests that require witnessing.

For inspections or tests within the country, arrangements are confirmed at least two working days before the event. For inspection and tests outside of the country, arrangements are confirmed at least seven working days before the event.

Inspection notifications include the following essential information:

- Contract Number
- Location of Inspection or Test
- Nature of Inspection or Test
- Date and Time of Inspection or Test
- Name and telephone number of the *Contractor's* Representative.

5.9 **Inspection and Testing**

The *Contractor* is responsible for the conduct of all *Contractor* inspections and tests. This responsibility includes:

- Documenting inspection and test results in the QCPs and relevant FICs.
- Progressively inspecting the quality of the Scope of Work performed, including that of all Sub-Contractors.
- Inspecting to meet all Contractual requirements, in number, type and form
- Inspecting day to day activities, material receipts, issue of material for installation, in-process inspections, and final inspections.

Completed original QCPs and FICs are included in the DP that the *Contractor* submits to TRANSNET.

5.10 **Inspection Release**

At completion of the Scope of Work, either in total or in phases, TRANSNET may issue an Inspection Release Report (IRR) or an Inspection Waiver Report (IWR).

The issue of either an inspection release or waiver of inspection does not relieve the *Contractor* of its obligations under the *Contract*. The *Contractor* ensures that a copy of the release note and final expediting release note for transport, where appropriate, is attached

to the delivery docket and accompanies the Work to the designated destination indicated in the *Contract*. Items delivered to TRANSNET without a copy of these documents may not be accepted.

A copy of the inspection release or waiver of inspection is included in the DP.

5.11 **Special Processes**

It is the *Contractor's* responsibility to ensure that all processes which require prequalified procedures and/or work methods are tested and qualified before work begins. This typically covers such activities as welding, non-destructive testing, special fabrication techniques and painting. Unless specified such procedures are the *Contractor's* responsibility and do not require submission to TRANSNET before work begins. When such procedures are requested, no work shall commence until procedures are approved by TRANSNET.

It is the *Contractor's* responsibility to ensure all operators are qualified for the processes in accordance with the procedure and/or applicable standards. Records of qualification of operators shall be maintained by the *Contractor* and made available to TRANSNET when requested.

Records of qualification of procedures and processes shall be maintained by the *Contractor* in accordance with the applicable procedure or code.

5.12 **Welding Procedures**

Where the *Contractor's* Scope of Work includes fabricated weldments, Welding Procedure Specifications (WPS) defining the method, preparation and sequences to be adopted to achieve a satisfactory welded joint shall be provided for all weld types required in the execution of the *Contractor's* Scope of Work. The procedure shall only be submitted to TRANSNET when requested in the *Contract*.

WPS include all welding essential and non-essential variables for each process used, including appropriate test results. WPS comply fully with the standard or code pertaining to welding required in the execution of the *Contractor's* Scope of Work.

When requested in the *Contract*, a suitably marked "weld map" is completed by the *Contractor* for all items to be fabricated. A summary of WPS is prepared and, when used, is identified on the weld map.

Where TRANSNET approval is required, fabrication is not to commence until written approval of WPS and Welding Procedure Qualification Records (WPQR) is received by the

Contractor. No welding fabrication will be accepted that is not covered by a TRANSNET approved WPS/WPQR.

Welding Procedure Qualification (WPQ) tests may be witnessed by TRANSNET and/or an independent inspection authority. Testing of the specimens prepared during the WPQ Tests is carried out by an approved testing laboratory, independent of both TRANSNET and the *Contractor*. In certain instances, a certificate to EN 10204 3.1 B may be required which will be clarified at Tender review and clarification stage.

Where actual weld deposit analysis and weld metal physical properties are required for procedure qualification, the information is taken from the procedure qualification tests. Data listed in the catalogues of the manufacturer of welding consumables is not acceptable.

Welders/welding operators are qualified in accordance with the relevant welding code prior to commencing production fabrication. Specific Welder Qualification (WQ) records will be reviewed by TRANSNET in the *Contractor's* works and should NOT be submitted for review.

A register of welders qualified to work shall be maintained by the *Contractor*.

5.13 **Material Traceability**

Where, and to the extent that material traceability is required, the *Contractor* shall provide its procedures for the maintenance of material identification throughout all phases of manufacture. Methods of identification, routines for re-stamping or stencilling as appropriate shall be defined and agreed with the *Employer*.

Adequate records shall be maintained throughout construction enabling traceability of key materials from final product back to original material certificates. The material traceability records shall form part of the DP

The *Contractor* shall prepare a schedule of materials and equipment that are subject to traceability requirements.

5.14 **Material Certification**

Where specified in the Contract the following certificates shall be provided to TRANSNET and included in the DP.

Type A: A *Contractor's* certificate of compliance with the *Contract*. This certifies that the goods or services are supplied in compliance with the *Contract* without mention of any test results (EN10204 certificate 2.1).

- Type B: A certificate issued by a laboratory or test facility independent of the *Contractor's* works. It shall quote test results carried out on the product supplied and state whether compliance with the relevant technical standard, code, etc., has been complied with. (EN10204 certificate 3.1B).
- Type C: The same as Type B, the tests are to be witnessed by a third party (EN10204 certificate 3.1C).

6. Non-Conforming Products

6.1 General

The *Contractor* shall establish and maintain procedures to control material or products that do not meet the specified requirements.

All *Contractor* product and/or materials identified as not conforming to requirements shall be dealt with promptly as follows:

- If the *Contractor* discovers material or product which is not in accordance with the requirements of the *Contract*, i.e. a non-conformance, the *Contractor* shall immediately initiate the non-conformance procedure in terms of the *Contractor's* Quality Management System, advise TRANSNET promptly, and provide a copy of the non-conformance report (NCR) to TRANSNET
- If TRANSNET or its agent identifies a non-conformance, a TRANSNET NCR may be raised.

Originals of all closed out NCRs shall be included in the DP.

6.2 Corrective and Preventative Action

If the *Contractor* proposes a disposition of any non-conforming materials or product which varies from the requirements of the Specification or *Contract*, such a proposal shall be submitted in writing to TRANSNET whose decision on the proposal shall be obtained in writing before the non-conforming material or product is covered up or incorporated into the Works, or is the subject of any other disposition.

The disposition of non-conformances which do not vary the requirements of the *Contract*, specification or drawings may be approved by the *Contractor* following discussion and agreement with TRANSNET.

7. **Concession Requests and Technical Queries**

7.1 **Concession Requests**

Where a *Contractor* requests a Concession to deviate from the requirements of the *Contract* or specified requirements, the *Contractor* raises the request with TRANSNET using the format as shown in Appendix 2.

The Concession Requests shall clearly identify all elements of the proposed deviation together with any resulting technical, commercial and/or schedule impacts.

Completed original Concession Requests shall be included in the DP.

7.2 **Technical Queries**

For clarification of technical issues (only), the *Contractor* may submit a Field Engineering Query (FEQ) to TRANSNET in accordance with the *Contract*.

The FEQ shall clearly identify all elements of the query, and all supporting documentation and/or drawings shall be attached where appropriate.

Completed original FEQ's shall be included in the DP.

8. **Inspection, Measuring and Test Equipment**

8.1 **Calibration**

The *Contractor*, including its Sub-Contractors/Sub-Suppliers, shall ensure the calibration of test and measuring equipment is performed and maintained in accordance with the relevant *Contractor* procedures and/or the equipment manufacturer's specifications.

Where calibration is required by an external laboratory, the *Contractor* shall ensure that the facility selected for calibration possesses current certification. Calibration certificates shall contain a statement that the test equipment is accurate to within specified tolerances.

The *Contractor* should establish the frequency of calibration for each item of equipment (including jigs, fixtures or templates) and record the details in a 'Measuring and Test Equipment Register' (or similar).

8.2 **Use of Inspection, Measuring and Test Equipment**

The *Contractor* shall ensure that authorised equipment users:

- Use the equipment in accordance with manufacturer's instructions, and accepted industry practices
- Ensure the equipment is covered by a current calibration certificate

- Conduct the measurements or tests in accordance with the equipment manufacturer's specifications or other relevant specification
- Prior to commencement of each inspection or test activities:
 - Identify the measurements to be made
 - Determine the accuracy required
 - Select the appropriate inspection, measuring or test equipment for the scope of work.

8.3 **Verification of Previous Test Results**

Where the calibration status of the equipment is unknown, expired or has doubtful accuracy, the equipment shall immediately be quarantined, and tagged according to *Contractor's* Quality System procedures. The *Contractor* shall then arrange for either in-house or external calibration, and:

- review all previous test results associated with the suspect equipment;
- identify the inspections, measurements or tests required to re-validate the results;
- ensure that suitable re-testing is performed with calibrated equipment;
- record the results of the re-testing on the respective inspection and test documentation.

9. **Quality Personnel Qualifications**

It is preferable that *Contractor's* personnel engaged in Quality Assurance and Quality Control are members of one or more of the following organisations:

South African Quality Institute

Southern African Society for Quality

It is mandatory that personnel undertaking testing of rail-associated infrastructure are qualified as follows:

10. **Quality Records**

Contractors shall maintain Quality Records necessary to provide objective evidence that demonstrates and verifies achievement of the QA / QC requirements associated with the Scope of Work. All Quality Records, including original source material test certificates and

non-destructive test reports, shall be retained by the *Contractor* during the project, and be provided to TRANSNET at the times, and in the quantities specified in the *Contract*.

The *Contractor* shall collate all quality records in the DP and submit the DP to TRANSNET in accordance with the *Contract* and all referenced standards and specifications. This DP shall be compiled progressively, and shall be available for review at all phases of manufacture or construction activities.

The Scope of Work shall not be complete until the *Contractor's* DP, including the quality records from Sub-Contractors/Sub-Suppliers, has been reviewed and accepted by TRANSNET.

The *Contractor* compiles the DP progressively during the execution of the Scope of Work and makes the DP available for review by TRANSNET as required.

The *Contractor* shall retain a copy of all Quality documentation generated during the *contract*, including a copy of the complete DP, for his own records for a minimum period of five years after the completion of the work.

Annexure 1 – Sample Quality Control Plan

Quality Control Plan No. _____					Revision: _____					Date Issued: _____				
Contract No. _____					Description: _____					Item No. _____				
Contractor _____					Location: _____									

Activity No.	Activity Description	Procedure Reference / Code Specification	Specification Acceptance Criteria	Verifying Document / Report / Certificate	Verification/Witness						
					Contractor		AIA		TRANSNET		
					Action	Sign	Action	Sign	Action	Sign	

Rev	Date	Reason for Revision	Drawn	Checked

ACTION

H – Hold. Mandatory Hold Point R – Review (Verify) only

W - Witness S - Surveillance

NOTE: H & W points require formal notification to TRANSNET

Annexure 2 – Concession Request (QAL-FAT-0003)

Request for Concession No:															
Project Name:						Project Number:									
A. SUPPLIER/CONTRACTOR SUPPLIED INFORMATION															
SUPPLIER/CONTRACTOR NAME:						P/O /CONTRACT NO.:									
SUPPLIER/CONTRACTOR CONCESSION NO:						DATE:									
Required concession applicable to: (Item/Material/Equipment/Area)															
Quantity Affected:															
Original Requirements:															
Description of Concession – Revised Requirements:															
Justification:															
Cause :															
Consequence :															
References:															
Original Requirements reference:															
Drawing No.:				Rev.:				Specification No.:				Rev.:			
Drawing No.:				Rev.:				Specification No.:				Rev.:			
Drawing No.:				Rev.:				Specification No.:				Rev.:			
Attached applicable documentation:															

♦ A. SUPPLIER/CONTRACTOR SUPPLIED INFORMATION continued						
(NOTE: This concession will be rejected if the following information is not provided):						
(i) VALUE OF BENEFIT TO CLIENT \$/R.....	(ii) AGREE TO AN EXTENSION OF THE WARRANTY	YES <input type="checkbox"/>	NO <input type="checkbox"/>	(iii) ANY IMPACT ON SCHEDULE?	NO <input type="checkbox"/>	YES <input type="checkbox"/>
	IF "YES" WHAT PERIOD?			IF "YES" WHAT PERIOD?		

Requested by: (Supplier/Contractor)							
Name:		Title:		Signature:		Date:	
B. SITE ADMINISTERED CONTRACT?			<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Possible QC implications:							
Recommended	<input type="checkbox"/>	Rejected	<input type="checkbox"/>				
♦ Recommendations with the following Conditions:							
Area Manager:			Signature:		Date:		
Site Engineer:			Signature:		Date:		
C. RECOMMENDATION BY CONTRACT ADMINISTRATOR:							
Name:		Signature:		Date:			
D. RECOMMENDATION BY ENGINEERING:							
Recommended	<input type="checkbox"/>	Rejected	<input type="checkbox"/>	Conditional	<input type="checkbox"/>		
Recommendations:							
PR Engineer:			Signature		Date		
Lead Discipline Engineer:			Signature		Date		
Engineering Manager:			Signature		Date		
Comments:							
E. AREA MANAGER:			Accepted	<input type="checkbox"/>	Rejected	<input type="checkbox"/>	
Name:		Signature		Date			
F. Transnet Capital Projects :			Accepted	<input type="checkbox"/>	Rejected	<input type="checkbox"/>	
Name:		Signature		Date			

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROGRAMME

FOR THE

PORT OF NGQURA



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1. Purpose

This document describes the main environmental management requirements that Contractors must comply with during construction to ensure that the environment is considered, negative impacts avoided or minimised, and positive impacts enhanced. The Construction Environmental Management Programme (CEMP) addresses requirements of the Records of Decision (RoD) / Environmental Authorisations (EA) relevant to the Construction and Operation of the Port of Ngqura (Ref A24/16/3/56) and Construction of the Port Extensions (Ref 12/12/20/690) that apply to the construction phases of the authorised projects. This document is critical to the main Contractor and the Contractor's Environmental Officer (EO) as well as any sub-contractors reporting to the main Contractor.

The purpose of this Document is to:

- Describe how project environmental risks will be 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 during the construction phase.

2. Scope

This standard applies to Contractors that work on site under the authority of Transnet.

3. Abbreviations/Definitions

CEMP	Construction Environmental Management Plan. Construction EMP including Standard Environmental Specification (SES) and Project Environmental Specification (PES).
Compliance	The act or fact of complying with legislation
Conformance	The act in accordance with this standard and other internal policies, procedures guidelines or best practice
Contractor	The Principal Contractor as engaged by Transnet 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 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 CEMPr on a daily basis.
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, eg. Non-conformance to documented procedures and work instructions, non-conformances raised through internal audits, unacceptable monitoring and measurement results, internal & external SHEQ complaints, etc.
DFFE	Department of Forestry, Fisheries and Environment
ECO	Environmental Control Officer (ECO). Independent or internal environmental specialist who monitors compliance with the EA as required.
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 (EA)	Environmental Authorisation is the authorisation granted by a competent authority of a listed activity or specified activity in terms of NEMA, and includes a similar authorisation contemplated in a specific environmental management Act
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 (EMP)	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 (EMPr)	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.
NEMA	National Environmental Management Act, 107 of 1998 (as amended)
Non-conformance	An action or situation that does not conform to Transnet SHEQ standards, procedures or legislative requirement(s) and that can be, or lead to, an unacceptable SHEQ incident.
Transnet Project Manager	Means the overall project manager responsible for implementation of the project.
Transnet Environmental Manager	Works together with the Project Manager and Construction Manager to ensure that the requirements of the CEMPr are met
Transnet Construction Manager	Works together with the Project Manager to ensure that construction proceeds in accordance with the relevant specifications and agreed schedule.
Transnet Environmental Officer	Responsible for ensuring that the CEMPr is implemented by the project/construction team and Contractors and their Sub-contractors.

4. Overview of the Construction Environmental Management Programme

It is the stated goal of Transnet 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 CEMPr is the tool used to ensure this goal is achieved during construction and commissioning phases at the Port of Ngqura.

The CEMPr has been developed in line with the requirements of all relevant South African Environmental Legislation, Port of Ngqura Environmental Authorisations and Requirements and Standards of Best Practice.

5. Composition of the CEMPr

The CEMPr will form an integral part of all contracts with Contractors. The CEMPr and associated documents or specifications as well as the relevant Environmental Authorisations will be included in the Tender Documents issued to prospective Contractors. The Contractors will incorporate all requirements set out in this Document in their submissions to Transnet.

There are two types of environmental specifications that have been incorporated into this CEMPr:

Standard Environmental Specification that 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 that describes standards specific to projects within the Port of Ngqura which include conditions and requirements of the Port Environmental Authorisations and Practices.

The specifications are configured as performance specifications to ensure that Transnet and any entities that enter into formal agreements with Transnet viz. Consultants, Contractors and Sub-contractors, achieve the required level of environmental performance.

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

6. Approval Status of CEMPr

The CEMPr was reviewed and approved by the relevant environmental authorities in terms of the requirements of the Records of Decision for the Construction and Operation of the Port of Ngqura dated 27 May 2002 and Construction of the Port Extensions dated 02 August 2007, and as such becomes a legal document that must be complied with. This approved CEMPr shall be issued to all relevant parties for implementation during construction within the Port of Ngqura.

7. CEMPr Management and Organisational Structure

7.1 Contractual Obligations

The CEMPr will form part of all tender documentation and will be made legally binding on all contractors, consultants and service providers working on projects through inclusion in contractual documentation and signing of the Declaration of Understanding. This will ensure that the obligations are clearly communicated to contractors and that submitted tenders have taken into account, and budgeted for the environmental requirements specified. Obligations imposed by this document are legally binding in terms of the Port of Ngqura Environmental Authorisations.

7.2 Organisational Structure

Transnet will specify the required management structure for the administration and implementation of the CEMPr, with particular emphasis on the roles and responsibilities of key individuals or groups. The organisational structure identifies and defines the responsibilities and authority of the various entities involved in projects within the Port of Ngqura. All instructions and official communications regarding environmental matters will follow the organisational structure as indicated in Figure 1. below. All instructions that relate to the implementation of the CEMPr will be given to the Contractor by the Transnet Project Manager. Where uncertainty relating to the requirements of the CEMPr exists, the Transnet Project Manager will consult with the Project Environmental Manager.

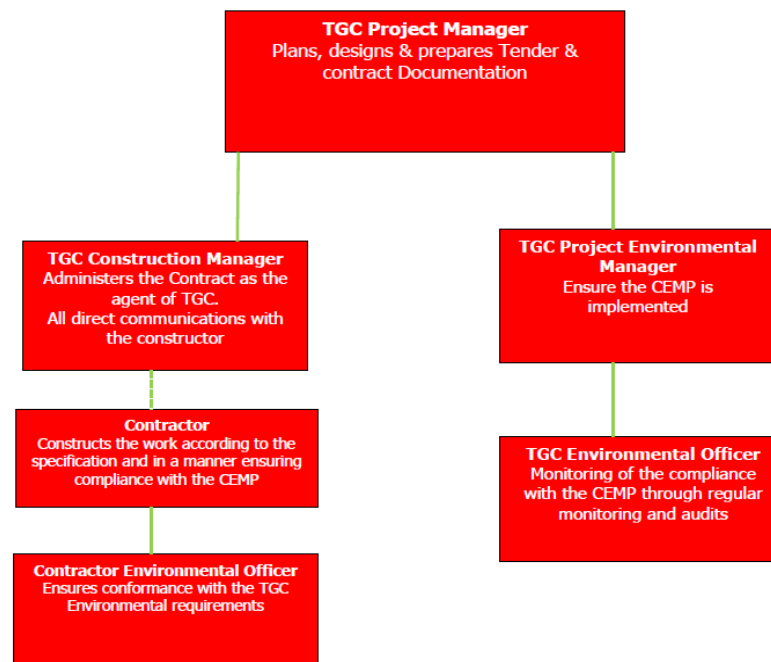


Figure 1: Typical Organogram for Construction

7.3 Roles and Responsibilities

Transnet SOC Ltd is the Developer and has overall responsibility for ensuring that construction and development is undertaken in an environmentally sound and responsible manner, and in particular, reflects the requirements and specifications of the CEMPr and recommendations from the relevant authorities. The roles and responsibilities of all role players are presented below.

7.3.1 Transnet (Employer)

The Employer will be responsible for overall environmental control on the project site during the construction and rehabilitation phases. The Employer's responsibilities will include:

- Appointing an independent ECO for the duration of the Contract;
- Appointment of required environmental specialists in terms of the requirements of the Environmental Authorisation;
- Obtaining necessary approvals of plans, designs and documentation as required by the Environmental Authorisation;
- Being fully familiar with the content of the Environmental Authorisation and CEMPr;
- Notifying the DFFE of changes in the developments that result in significant environmental impacts;
- Notifications to DFFE in terms of the requirements of the Environmental Authorisation and relevant environmental legislation (where required);
- The overall implementation of the EMPr;
- Ensuring compliance, by all parties, and the imposition of penalties for non-compliance through the Transnet Project Manager and ECO;
- Implementing corrective and preventive actions, where required;
- Preventing pollution and actions that will harm or may cause harm to the environment.

7.3.2 Transnet Project Manager

The Transnet Project Manager will be responsible for environmental management throughout the design and construction phases of the project and will report directly to the Employer (or its appointed representative).

The PM's responsibilities in terms of this CEMPr will include the following:

- Be familiar with the contents of the Environmental Management Plans and Specifications, and his role and responsibilities as defined therein.
- Communicate to the Contractor, verbally and in writing, the advice of the Transnet Environmental Manager and / or ECO and the outcome and recommendations of the ECO reports.

- Review and approve drawings produced by the Engineer, Contractor or professional team in connection with any aspect of the proposed project.
- Issue site instructions giving effect to the ECO recommendations and requirements where necessary.
- Review complaints received and make instructions as necessary.
- Discuss with the Environmental team the application of penalties for the infringement of the CEMPr, and other possible enforcement measures when necessary.
- Issue penalties as and when necessary.
- Implement Temporary Work Stoppages as advised by the Environmental Manager and / or the ECO, where serious environmental infringements and non-compliances continue to occur.
- Facilitate proactive communication between all role-players in the interests of effective environmental management.
- Ensuring conditions of the environmental authorisation are complied with.
- While the PM retains the responsibility for the overall implementation of the project, he may delegate certain of his functions to the Transnet Environmental Manager to ensure that requirements of the Environmental Authorisation are met.

7.3.3 Transnet Construction Manager

The Transnet Construction Manager is responsible for ensuring the implementation of the CEMPr; and reports to the Transnet Project Manager. The Transnet Construction Manager is supported by the Transnet Project Environmental Manager.

The specific environmental tasks during the construction phase will include:

- Reviewing the monthly reports compiled by the Transnet Environmental Officer;
- Communicating directly with the Contractors;
- Issuing non-conformance notification to Contractors that do not comply with the requirements of the EMPr and associated requirements or documents, including EA, permits and licenses.

7.3.4 Transnet Project Environmental Manager

The Transnet Project Environmental Manager will be responsible for ensuring that the CEMPr and associated specifications or requirements are complied with during construction.

The Transnet Project Environmental Manager will report functionally to the Transnet Environmental Manager: Governance and Compliance and relevant Project Manager.

The specific tasks during the construction stage will include:

- Liaison with the authorities.
- Tender evaluation, development of environmental criteria and adjudication thereof.
- Review all reports from the Environmental Specialist/Officer, including sign off on Method Statements.
- Conduct any environmental incident enquiries.

- Identify, with support from the Transnet 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.
- Prepare environmental monitoring protocols (if monitoring to be done by Environmental Specialist and not an outside consultant).

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

7.3.5 Transnet Environmental Officer

The Transnet Environmental Officer reports functionally to the Transnet Construction Manager and Transnet Project Environmental Manager and is responsible for conducting the tasks required to ensure that the EMPr including permits and licenses are implemented on the construction site.

The Transnet Environmental Officer will conduct the following tasks:

- Ensure that environmental issues receive adequate attention in the site induction training.
- Prepare and conduct awareness training (e.g. posters, tool box talks and signage).
- Monitor the Contractor's compliance with the EA, EMP, EMPr and any permits and licences on site.
- Conduct monthly observations, inspections and environmental audits of all Contractor's and work areas.
- 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 topsoiled, re-vegetated, stabilised etc.).
- Maintain site documentation related to environmental management (permits, EMPr, method statements, EA, reports, audits, monitoring results, receipts for waste removal etc.). Documentation to be maintained on the relevant site Document Control System.
- Attendance at scheduled SHE meetings and project coordination meetings.
- Inspect and report on environmental incidents and check corrective action.
- Keep a regular photographic record of all environmental incidents.
- Implementation of environmental-related actions arising out of the minutes from scheduled meetings.
- Management of complaints register.
- Review and Sign off Method Statements prepared by Contractor's.
- Audit Environmental Method Statements.

- Collate information received, including monitoring results into a monthly report to the Construction Manager showing progress against targets.
- The compilation of the Project Environmental Management File.

The key deliverables will include the compilation of:

- Project Start Up Checklist
- Monthly inspection/environmental audit report
- Monitoring results
- Site close-out reports
- Incident reports
- Environmental Incident Register
- Environmental Non-Conformance Register
- Complaints Register
- Method Statements Register
- Hazardous Substances Register
- Site Close Out Inspection

Furthermore, the Transnet Environmental Officer will be required to compile a photographic record of all activities on site prior to construction related activities starting, during the construction process and on completion of construction related works. This will include photographs for:

- Monthly environmental audit reports;
- Corrective action;
- Progress of environmental works; and
- Non-conformance reports.

7.3.6 The Contractor

The Contractor will comply with the requirements of the CEMPr and abide by the Transnet Construction Manager's instructions regarding the implementation of the CEMPr. The Declaration of Understanding, as detailed in this document, must be signed, and a signed copy must be submitted to the Transnet Construction Manager prior to the start of construction.

The Contractor must provide a Responsibility Matrix and Organogram which must be approved by the Transnet Project Manager and Transnet Environmental Officer. This document must be updated on a regular basis to ensure that information is correct.

7.3.7 Contractor Environmental Officer

The Contractor will appoint a suitably qualified and experienced Environmental Officer that must be dedicated to the implementation of the CEMPr for the duration of their works on site. The Environmental Officer may not be a shared resource with other disciplines on site.

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. This will be for Transnet's approval and no work will be permitted to commence on site if this has not been done.

Should the Contractor's Environmental Officer change from that person identified during either tender stage, or construction period, the Contractor will submit a CV of a replacement Environmental Officer for approval by the Transnet Environmental Officer and Construction Manager. No work can proceed until the replacement Environmental Officer has been approved.

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

- Description of environmental management responsibilities of the Contractor's Project Manager, Contractor's Site Manager and the Contractor's Environmental Officer;
- Organisational Environmental Policy;
- Environmental Method Statements.

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

- Daily or weekly or monthly inspections of the work area(s) as per schedule or authorised through written instruction by the Transnet PEM or Environmental Officer;
- Prepare activity/aspect based Environmental Method Statements;
- Identify local, provincial and national environmental legislation that applies to the Contractor's activities;
- Monitor compliance with the EMPr and Environmental Method Statements;
- 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 possible;
- Waste Management;
- Ensure that environmental signage and barriers are correctly placed;
- Taking required corrective action within specified time frame;

- The Contractor's Environmental Officer will be expected to submit daily and/or weekly (whichever is practical based on the nature of the works on site) and monthly checklists to the Transnet Environmental Officer.

7.3.8 Environmental Monitoring Committee

The Environmental Authorization for the project requires Transnet to participate in the current constituted Coega Environmental Monitoring Committee (EMC). The EMC was initially established as a requirement of the Records of Decision (RoD) issued by National DFFE in 2002 and 2007 respectively for the construction and operation of the Port of Ngqura and proposed port extensions as well as for the establishment of the Coega Industrial Development Zone.

The EMC is responsible for continual monitoring of the Developers' compliance with the conditions of the various RoD's, Environmental Authorisations and requirements of Environmental management Programmes applicable to the construction, operation and decommissioning phases of authorised projects in the Coega IDZ and Port of Ngqura.

Its mandate is to monitor construction and operational activities within the entire IDZ and Port of Ngqura to ensure that they take place in an environmentally responsible manner, in accordance with sound environmental management practices and utilizing, where possible, current best practicable environmental options.

The committee consists of *inter alia* representatives from regulatory authorities, the Developers (Coega Development Corporation (CDC), Transnet SOC Ltd), Environmental Non-Governmental Organizations, SANParks, Algoa Bay Users, Civil Society and Affected Communities.

The EMC may:

- At their discretion, undertake periodic reviews on site to ensure that Transnet and their appointed contractors are implementing appropriate measures and monitoring related to implementation of the procedures and specifications contained in this document; and
- As representatives of government, require Transnet and CDC to make changes as necessary to environmental practices or order the suspension of all, or part of the work, should they believe that it is in the interests of the development zone/environment to do so.

The EMC through its' Terms of Reference (ToR) is mandated to select, after which CDC and Transnet shall appoint, a suitably-qualified independent person as Environmental Control Officer, who shall hold office for such period as determined by the EMC.

The EMC shall meet on a quarterly basis from the inception of the project and shall report to the National DFFE.

7.3.9 Coega/Ngqura Independent Environmental Control Officer

Transnet is required in terms of the Environmental Authorisation for the project to appoint a suitably qualified independent Environmental Control Officer. Appointment of an ECO will be done in line with the requirements of the EMC ToR.

The ECO is accountable to the EMC and reports to the EMC or to the Chairperson acting on behalf of the EMC. The ECO's primary function is to conduct compliance monitoring and auditing activities on behalf of the EMC, as outlined in the project Environmental Authorisation and/or as directed by the EMC or the Chairperson on behalf of the EMC. The ECO's functions include:

- Monitoring and reporting on environmental management of the project;
- Ensuring compliance with authorisation conditions, requirements of the CEMPr and relevant environmental legislation;
- Conducting regular site inspections and periodic environmental audits;
- Conducting bi-annual audits and presenting audit reports to the EMC;
- Providing quarterly environmental compliance reports to the EMC, copied to the relevant DFFE Directorate;
- Providing secretariat services to the EMC as outlined in the EMC ToR; and
- Complying with directions of or any duties assigned by the EMC or the EMC Chairperson.

The ECO is responsible for providing an independent evaluation of compliance with the CEMPr and not for enforcement of conditions of the CEMPr. Transnet is responsible for enforcement of the conditions of the EMPr. The ECO will be responsible for maintaining the following on site:

- A site diary of site visits and audits;
- An activity schedule for project implementation as supplied by Transnet;
- A copy of the Environmental Authorisation and all other relevant permits and licenses, for reference purposes;
- A non-conformance register;
- A public complaints register;
- Copy of audits undertaken by the ECO.

The ECO in terms of this CEMPr will remain employed for the full duration of construction until all snag items have been resolved, rehabilitation measures have been completed, and the site is handed over for Operation, thereby indicating the start of the operational phase.

The ECO will compile and submit a compliance audit report to the National DFFE upon final completion of construction related activities (within 30 days of site hand-over) and within 30 days of the completion of rehabilitation activities in accordance with the requirements of the project environmental authorisation.

8. Implementation of CEMPr

8.1 Availability of the CEMPr

Copies of this CEMPr and related environmental management requirements including relevant Environmental Method Statements must be available at the contractor site offices and / or works areas at all times during the construction phase of the project. The contractor must ensure that all personnel working on site including sub-contractors and their staff are familiar with and understand the requirements of the CEMPr and method statements.

8.2 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.

8.3 Environmental Method Statements

Method statements are written submissions by the Contractor to the Transnet Construction manager and Environmental Officer in response to the requirements of this CEMPr. Construction activities may not commence prior to approval of the method statements.

Environmental Method Statements must as a minimum describe:

- The proposed activity, setting out the plant, equipment, material, labour and method the contractor propose using to carry out an activity;
- Transportation of staff and equipment to and from site;
- How equipment and material will be transported while on site;
- How and where equipment and material will be stored;
- The containment of leaks or spills of any liquid or material that may occur, including actions to be taken if containment is not possible;
- Timing and location of activity;
- Description of potential positive and negative environmental impacts and how they will be managed;
- Compliance/non-compliance with the requirements of this CEMPr and any other statutory and best practice standards;
- Monitoring and reporting requirements;
- Any other information deemed necessary by the Transnet Construction Manager.

The contractor will compile Activity/Aspect based Environmental Method Statements for all activities proposed. The Environmental Method Statement will enable the potential Positive and negative environmental impacts associated with the proposed construction activities to be identified and mitigation measures put in place. All method statements must be signed by the

contractor 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 Transnet Construction Manager and Environmental Officer. Any changes to the original Method Statements must be approved by the Transnet Construction Manager and Environmental Officer prior to implementation. The Contractor will also be required to re-sign the amended Environmental Method Statement.

To enable timely approvals, the Environmental Method Statements must be submitted to the Transnet Construction Manager and Environmental Officer for review two weeks prior to the intended date of commencement of the activity, or as directed by the Transnet 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. This Environmental Method Statements MUST contain sufficient information and detail to enable the Transnet 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.

An approved method statement will not absolve the Contractor from any of his obligations or responsibilities in terms of the contract. However, any damage caused to the environment through activities undertaken without an approved method statement will be rehabilitated at the contractor's cost.

8.4 Environmental Awareness Training

All project staff (including contractors) will be required to undergo project specific environmental awareness training and training regarding roles and responsibilities in terms of the implementation of and compliance with the CEMPr. The awareness training will ensure that all parties understand their obligation to exercise due diligence for environmental matters.

The environmental awareness training programmes should focus on the various levels of employment. Environmental awareness training programmes need to be formulated for these levels and records of such must comprise:

- A record of all names, positions and duties of staff who received training;
- A summarised version of the training material.

Environmental Awareness Training programmes must be initiated prior to commencement of project related activities. Awareness training must amongst others include but not be limited to:

- Significant actual or potential impacts associated with the project and the importance of mitigation.
- Location of environmental sensitive receptors and areas of high environmental value.
- Conditions and requirements of the project Environmental Authorisation.
- Importance and relevance of the CEMPr.

- Roles and responsibilities in relation to compliance with the project Environmental Authorisation and CEMPr.
- Familiarisation with site environmental controls.
- Spill response and emergency procedures.
- Hazard and risk management to ensure personnel understand the potential impacts and proposed mitigation measures.
- Accident, incident, spill reporting and methods for prevention.
- Complaints management procedures.
- Environmental Monitoring.

The Transnet Environmental Officer may be required to provide additional training on-site regarding environmental aspects that are unclear to the construction personnel. The Contractor will implement training programmes at own cost.

In addition to the above, the Contractor will be required to train relevant personnel in various emergency incident situations. These persons must be provided with basic emergency response equipment. Alternatively, the Contractor will appoint relevant Preferred Service Providers (PSP's) to fulfil these roles and responsibilities. It is a requirement for the Contractor to make contact with the local emergency response teams and include these in all emergency planning and procedures.

All staff working with hazardous products must receive specialist training. This training must, as a minimum, deal with the following:

- Handling of dangerous/hazardous materials.
- Safe storage of such goods.
- The use of Material Safety Data Sheets.

The response and on-site teams must be provided with the following to effectively manage all environmental, health & safety incidents:

- Up-to-date emergency response plan.
- Material Safety Data Sheets of all materials stored on site.
- Spill kits.
- Adequate fire-fighting equipment.
- Personal Protective Equipment (PPE).

8.5 Recording and Reporting of Environmental Incidents

Transnet implements a procedure for the recording and reporting of environmental incidents which forms part of the implementation of this CEMPr. Where environmental incidents are identified, appropriate action shall be taken to minimize the impacts associated with the incident. Corrective actions must be implemented and an assessment done to determine whether preventive actions can be implemented to prevent similar incidents from occurring.

All environmental incidents shall be reported as soon as possible and must be followed by a corrective action report that outlines the corrective actions implemented and the timeframe in which it was implemented.

8.5.1 Classification of Environmental Incidents

An environmental incident is classified under four levels: 1, 2, 3 and 4. These levels are defined as follows:

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.
- Any incident with NEMA section 30(1) – and/or NWA section 20(1) reporting requirements (In the even where all administrative requirements have been complied with and the incident has been closed out by the authorities, it may be re-classified as a Level 2 environmental incident).

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, usually result in a significant pollution and may entail risk of public danger. Level 1 environmental incidents may 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.

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.

Where the environmental impact of a Level 3 environmental incident is still present 3 days after occurrence, the incident will be reclassified as a Level 2 incident.

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.

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.
- Blatant negligence of Transnet CEMPr leading to the issuing of an NCR.

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.

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;
- Had the potential , under different circumstances, to cause major damage to the environment; or

- Instances where inspections undertaken internally by Transnet to check for conformance with the Transnet Environmental Governance Framework have been outside the required limits (e.g. an environmental compliance score of less than 80%).

8.5.2 Procedure for Recording and Reporting Environmental Incidents

The procedure for recording and reporting environmental incidents is outlined below:

- 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: Notify the Transnet Environmental Officer in writing 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: Record the incident on the Environmental Incident Register
- 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 Transnet Incident Flash Report, Transnet Environmental Incident Report and record the incident in the Transnet Environmental Incident Register.

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

- Ensure that an Incident Flash Report has been compiled and that it contains the necessary information;
- Ensure that the Contractor has undertaken a detailed incident investigation; and
- Report, record, investigate and analyse the incident and communicate the required action plans to be implemented to the Transnet Construction Manager.

In the event of any Level 3 Environmental Incidents, the Contractors' Environmental Officer must complete a Transnet Environmental Incident Report and record the incident in the Transnet Environmental Incident Register.

In the event of any level 4 Environmental Incidents, the Contractors' Environmental Officer must record the incident in the Transnet Environmental Incident Register.

In the event of an incident (regardless of the level) occurring, the Transnet Environmental Officer must ensure that the problem statement on the report is clear, the actual or potential consequences are noted, and priority mitigation actions are indicated where necessary.

8.6 Communication and Consultation

The management of internal communication as well as the receipt, response and documentation of external communication relating to the construction phase of the project shall be done in accordance with the Transnet procedure for communication management, the requirements of the project environmental authorisation and this CEMPr.

8.6.1 Reporting Requirements

The Contractor shall submit monthly environmental reports to the Transnet Construction Manager and Environmental Officer in line with the requirements below and relevant to their activities. Reporting required in terms of compliance with the requirements of this CEMPr shall include but not be limited to:

- Progress with regards to the implementation of the CEMPr;
- Results of inspections, monitoring and audits conducted;
- Environmental incidents or non-conformances and the corrective actions implemented;
- Public complaints received;
- Requirements for relevant permits or licenses;
- Revisions to management plans and programmes.

8.6.2 Coega Environmental Monitoring Committee

The EMC shall meet on a quarterly basis from the inception of the project and shall report to the National DFFE. Transnet SOC Ltd shall attend quarterly EMC meetings and shall provide a report on construction progress and the status of environmental management and compliance, at these meetings.

8.6.3 Management of Complaints

A complaints register shall be established for the recording of any complaints that may be received during the construction phase of the project. The Complaints Register must be updated regularly, as new concerns or complaints are received. All complaints received will be discussed at environmental meetings and reported in environmental management reports. The status of each complaint must be indicated on the register, as open or closed. A complaint will remain open on the register(s) until all relevant parties are satisfied that the concern has been dealt with and that the matter has been resolved. All complaints shall be categorized in order to identify trends.

The following information must be recorded as a minimum when complaints are received:

- Date, time and nature of complaint received;
- Type of communication received;
- Contact detail of complainant;
- Response to complaint including actions implemented.

Contractors are required to immediately report all complaints received directly by them to the Transnet Construction Manager and Environmental Officer. Complaints must be responded to and closed-out within 10 days after receipt where practical.

8.7 Documentation and Records

The Transnet Environmental Officer will ensure that the Contractor's Environmental Officer is supplied with all required/applicable documents listed in the Transnet Contents for Contractors Environmental Files. 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 Transnet Environmental Officer on a monthly basis except where documents have remained unchanged in which case written notification to this effect must be provided to the Transnet Environmental Officer.

Once the Transnet 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 Transnet Environmental Officer after which an Environmental Site Closure Certificate will be issued.

NOTE: All documents/records are to be retained 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 NEC contract.

8.8 Application for Exemption from Complying with Parts of the CEMPr

The CEMPr is applicable to all construction activities associated with the project. It is however noted that some construction activities may vary in size, nature and complexity. For smaller contracts, or where the scope of work is limited, the Contractor may request, in writing to the Transnet Project Manager, for exemption from parts of the CEMPr that may not be relevant to the scope of their activities. The Transnet Project Manager will consult the Transnet Project Environmental Manager in reaching a decision on whether exemption from some of the CEMPr provisions may be granted.

9. Contractor Specific Compliance Requirements

9.1 Prior to Commencement of Construction

The Transnet Project Manager must ensure that the requirements below are requested from 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.

9.1.1 Declaration of Understanding

The Declaration of Understanding (DoU) will be signed by a person of authority and provided by the Contractor as part of the Tender Documentation. The signed DoU is a written confirmation by the Contractor that the requirements of the CEMPr and other authorisations, permits and licenses are understood and will be complied with for the duration of their works on site. The pro-forma DoU to be signed by the Contractor has been included as **Annexure B**.

9.1.2 Resource Allocation

Financial implications relating to the implementation of the CEMPr must be recognised by the Contractor (for the construction phase) and adequate provision for these costs must be made prior to commencement of construction activities. Such costs can include (but may not be limited to) mitigation actions, environmental awareness training, monitoring and auditing requirements, measures for rectification and rehabilitation, including any equipment or specialists required for these items.

9.1.3 Appointment of Contractors' Environmental Officer

The Contractor will appoint a dedicated and suitably qualified Environmental Officer that will be responsible for environmental management on site during construction. The Contractor will forward details of the appointment to the Transnet Construction Manager and PEM for their review and approval. Should the Contractor's Environmental Officer 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 Transnet Project Manager's approval. No work will proceed until the new Environmental Officer is assigned or appointed.

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

9.1.4 Environmental Management Plans and Method Statements

Where relevant, an Environmental Management Plan and Environmental Method Statements, to meet the requirements of the CEMPr (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 division (demarcation of the site);
- Emergency procedures for environmental incidents;
- Closure of construction laydown area.

Emergency construction activity Environmental Method Statements may also be required. Activities requiring Environmental Method Statements may not commence if these method statements have not been approved by the Construction Manager and PEM or Environmental Officer.

9.1.5 Environmental Inductions

A comprehensive environmental induction programme will be developed and implemented. 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 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 persons also undergo the Induction Programme and are made aware of the environmental requirements and specifications on site. The Contractor must ensure that all of their personnel understand the requirements of the Environmental Authorisation and CEMPr for the project, as relevant to their scope of work.

Inductions, which need to be conducted prior to any construction works occurring, must include but not be limited to:

- Information on applicable specifications, plans and method statements which are applicable to the project.
- Project requirements in treatment and handling of flora and fauna;
- Management and minimising of waste, including waste separation;
- Maintenance of equipment to prevent the accidental discharge or spill of fuel, oil, lubricants, cement, mortar and other chemicals;
- Responsible handling, storage and transportation of hazardous materials;
- Environmental emergency procedures and incident reporting;
- General code of conduct towards I&AP's;
- Housekeeping, hazardous materials/dangerous goods, MSDS;

- Dust management and enhanced awareness;
- Water and electricity savings;
- Important animal species and the need to be aware of their presence on site to avoid collision and other disruptive activities which could affect the animals.

All visitors will be required to undergo a visitor's induction. Special shortened inductions may be provided for visitors to the Project where there is minimal potential for environmental harm. Contractors are responsible for the actions and conduct of their visitors, and must ensure that visitors obey all environmental requirements of the site. Visitors must be accompanied at all times.

9.2 During the Construction Period

9.2.1 Copy of the CEMPr and Familiarisation thereof

A copy of the CEMPr 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 this document.

9.2.2 Weekly Environmental Monitoring Report

The Contractor's Environmental Officer will be required to provide the Transnet Environmental Officer with a weekly environmental monitoring report covering the events of the week. This will highlight key performance areas and provide feedback on corrective and preventive actions taken. The Contractor's Environmental Officer will have the weekly reports signed off by the Contractor's Construction Manager prior to submission to the Transnet Environmental Officer.

9.2.3 Environmental Site Meetings

Environmental Site Meetings will be held monthly on a day to be indicated by the Project Environmental Manager, or as and when required. These meetings must be attended by Senior Site Representative together with the Transnet Environmental Officer, Contractor(s), and Contractor's Environmental Officer ('s).

9.2.4 Site Clean-up for Closure

Retention money will not be paid until a Site Closure Inspection (conducted by the Transnet Environmental Officer) has taken place and has been signed off by the Transnet Construction Manager and Project Environmental Manager, together with the Site Closure Certificate.

10. Standard Environmental Specifications

This section describes the minimum standards for environmental management to which Contractors and sub-contractors must comply during Construction. The Contractor shall identify

the potential environmental impacts that may occur as a result of his/her activities and accordingly prepare separate Method Statements describing how each of these impacts will be prevented or managed so that the standards set below are achieved. These method statements shall be prepared in accordance with the requirements specified in Section 8.3 and 9.1.4 of this CEMPr.

The Contractor shall comply with the standards described below:

10.1 Environmental Awareness Training

An Environmental Awareness Program is considered a necessary part of the Construction Environmental Management Plan for the Project. Appropriate training of construction personnel will help ensure that all environmental regulations and requirements are followed which must be defined in the relevant Method Statement to be prepared by the Contractor.

Objectives of environmental awareness training are:

- Environmental Management – protecting the environment from the effects of construction by making personnel aware of sensitive environmental resources.
- Regulatory compliance – complying with requirements contained in project specific permit conditions, also complying with requirements of regional and local regulations.
- Problem recognition and communication – training personnel to recognise potential environmental problems, i.e. spills, and communicate the problem to the proper person for action.
- Liability control - non-compliance with regulatory requirements can lead to personal and corporate liability.

All individuals on the Project construction site will need to have a minimum awareness of environmental requirements and responsibilities. However, not all need to have the same degree of awareness. The required degree of knowledge is greatest for personnel in the Safety, Health, and Environmental Sections and the least for the manual personnel.

The Contractor shall present environmental awareness programmes on a weekly/bi-monthly basis (depending on project requirements) and keep record of all the environmental related training of personnel.

10.2 Site Planning and Establishment

Careful consideration must be given to the layout of the construction site prior to the commencement of construction. The appointed contractor must establish construction camps, offices, workshops and other facilities in a manner that does not adversely affect the environment. These facilities must not be sited in close proximity to sensitive areas and any area within the site that are not part of the development.

Before the onset of construction, the Contractor shall submit to the Transnet Construction Manager/Transnet Environmental Officer for his/her approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the Contractor proposes to implement.

The Site Plan must as a minimum include but not necessarily be limited to:

- Detailed layout of the construction works areas including access roads, site offices, material laydown areas, temporary stockpile areas and parking areas;
- Detailed locality and layout of all waste storage and handling facilities for litter, kitchen refuse and workshop-derived effluents;
- Proposed areas for the stockpiling of topsoil and excavated spoil material;
- Demarcation of the construction footprint including areas not to be disturbed by the development;
- Location of sewage and sanitary facilities at the site offices and at all localities on the site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of the Transnet Construction Manager and Environmental Officer.

Site camps and laydown areas should not be sited in close proximity to Environmental Sensitive Areas (ESA's) as described in this CEMPr. Should this not be possible, approval for the location of these facilities must be granted by the Transnet Environmental Officer.

10.3 Identification and establishment of suitable access routes and roads

Existing access routes to the construction/works areas must be used as far as possible. The establishment of access roads must be restricted to within the development footprint to prevent unnecessary disturbance of the surrounding environment. Access routes/roads must be maintained in a good condition at all times during construction to minimize erosion and dust generation.

Vehicles should not be permitted to leave access roads, creating multiple tracks and increasing the potential for erosion and unnecessary disturbance of sensitive areas. Turning of vehicles should only take place within a clearly demarcated "turn area" located within the approved construction footprint. Contractors must co-ordinate the loading, transporting and offloading of material during construction to avoid formation of side-roads by passing vehicles.

Vehicles should only be parked within designated parking areas as demarcated on the Site Plan. Parking of vehicles in undisturbed/vegetated areas or outside demarcated areas is not permitted. On completion of construction all access routes/roads that will not become permanent must be adequately rehabilitated to the Satisfaction of the Transnet Project Environmental Manager and Independent Environmental Control Officer.

10.4 Demarcation of Site Limits

Prior to the commencement of construction, the actual site to be developed must be clearly demarcated by means of highly visible barriers.

Methods of demarcation shall be agreed with and approved by the Transnet Construction Manager and Environmental Officer and may vary between areas. Disturbance of vegetation outside of the demarcated development footprint is not permitted.

All plant, material and equipment required for construction must be located within the designated areas. Laydown areas must be clearly demarcated within the site limits. No activities or disturbance are allowed outside of the demarcated development footprint.

10.5 Eating Areas

The Contractor is responsible for providing temporary shade areas within the works area to ensure that workers do not leave the site to eat during working hours. Refuse bins must be provided at all established eating areas. Waste from refuse bins must be removed at the end of each shift and disposed of in accordance with the specified waste management requirements. Contractors must take note that NO fires shall be allowed anywhere on site, this includes site camps and working areas.

10.6 Effluent Management

All effluent water from site shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect any Environmental Sensitive Areas as defined by this CEMPr. Only domestic type wastewater shall be allowed to enter designated systems.

10.7 Sewage and Sanitation

The Contractor is responsible for providing adequate sanitary facilities to all workers on site and for enforcing the proper use of these facilities. Facilities shall be serviced on a regular basis and proof thereof shall be available in the Contractor's Environmental File.

Ablution facilities shall be easily accessible and shall be positioned within walking distance from works areas. Use of open areas (i.e. the veldt) shall not, under any circumstances, be allowed.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding and high winds (where possible) and away from environmental sensitive areas. The Contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such facilities in a clean, orderly and hygienic condition to the satisfaction of the Transnet Construction Manager and Environmental Officer.

The Contractor shall ensure that there are separate toilet facilities for male and females on site.

10.8 Waste Management

Waste is grouped into "general" or "hazardous", depending on its characteristics. The classification determines handling methods and the ultimate disposal of the material.

Waste management on site during construction must be strictly controlled and monitored. Only approved waste disposal methods are permitted. The Contractor is responsible for ensuring that all site personnel are familiar with the proper disposal of waste. The contractor is required to institute an on-site waste management programme that must be detailed in a waste management

environmental method statement. The waste management method statement must address but not be limited to the following:

- An inventory of expected wastes.
- Category of wastes.
- Plan for dealing with waste.
- Compliance with authority requirements.
- Auditing and monitoring.
- Methods for control of spillages and clean-up.

A hierarchical control approach to waste management is encouraged. Waste should preferably be managed in the following order of preference:

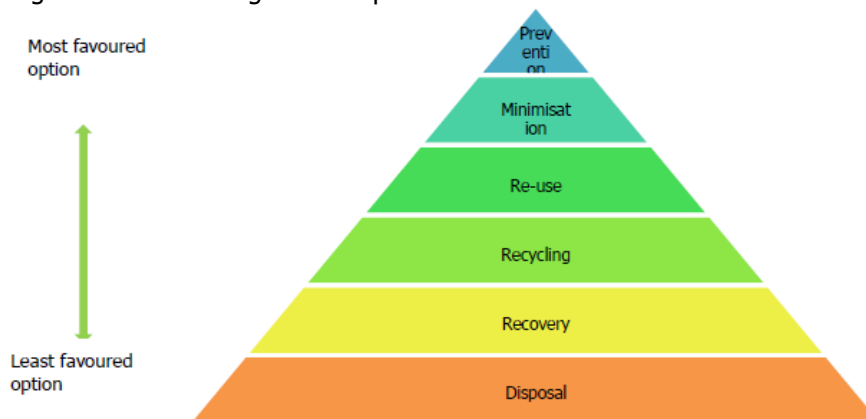


FIGURE 2: THE WASTE MANAGEMENT HIERARCHY

(Transnet Environmental Risk Management strategy and Framework, 2015:42)

- | | |
|-----------------------------------|--|
| 1. Avoidance/Prevention: | Using goods in a manner that minimises their waste components. |
| 2. Reduction/Minimisation: | Reduction of the quantity and toxicity of waste generated during construction. |
| 3. Re-use: | Removing an article from a waste stream for use in a similar or different purpose without changing its form or properties. |
| 4. Recycling: | Separating articles from a waste stream and processing them as products or raw materials. |
| 5. Recovery: | Reclaiming particular components or materials, or using the waste as a fuel. |
| 6. Treatment: | Processing of waste by changing its form or properties in order to reduce toxicity and quantity. |
| 7. Disposal: | Burial, deposit, discharge, abandoning or release of waste. |

The Contractor is responsible for the removal of all waste from site generated through the Contractors activities. The Contractor shall ensure that all waste is removed to appropriate

licensed waste management facilities. (For the identification of an appropriate facility, the following source may be utilized: <http://sawic.environment.gov.za/>).

Contractors shall quantify all waste disposed of, whether general or hazardous (including waste disposed of by any sub-contractors) and keep record of these quantities on site. Management requirements for various waste types are outline below:

10.8.1 General Waste

Contractor shall manage GENERAL WASTE that is anticipated to be generated by activities as follows:

- Determine if waste is non-hazardous and obtain containers for waste storage;
- Notify waste hauler when container is full so that it can be removed and replaced with an empty;
- No littering is allowed on site. In the event where staff mobility is high, refuse bags will be made available by the Contractor;
- Provide documentary evidence of proper disposal of waste.

Contractor shall recycle GENERAL WASTE (as far as practically possible) that is anticipated to be generated by activities on site as follows:

- Obtain and label recycling containers for the following (whichever relevant) and locate them within temporary office building and trailers:
 - Office Waste;
 - Aluminium;
 - Steel;
 - Glass;
 - Ferrous Metals;
 - Non Ferrous Metals; and
 - Waste Timber
- Establish recycled material collection schedule;
- Arrange for full bins to be collected.

Contractors shall ensure that adequate waste facilities are provided for the nature of their works on site and that these facilities are properly maintained. Measures must be implemented to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. Litter bins, containers and refuse collection facilities must be provided in all works areas and site camps. Placement of waste facilities must be done in consultation with and must be approved by the Transnet Construction Manager and Environmental Officer.

Waste storage containers must be equipped with lids, tip-proof, weatherproof and scavenger proof. Lids must remain closed to prevent wind-blown waste. Waste storage areas must be clearly demarcated and fenced off where practical.

No burning, on-site burying or dumping of waste will be permitted. All solid waste must be disposed of at appropriate licensed waste management facilities and waste disposal manifests maintained for audit purposes.

Contractors must provide metal refuse bins or equivalent plastic refuse bins with lids for all works areas. Refuse must be collected and removed off site at least twice per week or more frequently when required. Domestic waste must be transported to approved refuse disposal sites in covered containers or trucks.

Construction rubble and other waste materials must be disposed of at a licensed waste disposal site and all disposal slips maintained.

10.8.2 Hazardous Waste

The Contractor shall manage HAZARDOUS WASTE anticipated to be generated by his operations as follows:

- Characterise the waste to determine whether general or hazardous.
- Obtain and provide an acceptable container with correct and visible classification label. Place hazardous waste material in allocated container.
- Inspect the container on a regular basis as prescribed by the Contractor's waste management plan.
- Track the accumulation time for the waste. Haul the full container to the disposal site.
- Provide documentary evidence of proper waste disposal of the waste (Waste Disposal Certificate).

The Contractor's Environmental Officer will work in conjunction with the Contractor's construction safety and industrial hygiene personnel to create a Hazardous Materials Management Program. This program will establish the necessary protocol for proper handling and removal of hazardous materials on the site.

All hazardous waste including oil and other chemicals (paints and solvents) must be stored in enclosed areas and clearly marked. Such waste must be disposed of at an approved hazardous waste disposal site and disposal manifests kept for audit purposes.

Used oil and grease must be removed from site and sold to an approved used oil recycling company. The spoiling of tar or bitumen products on site, over embankments, or in any excavations, will not be permitted. Used oil, lubricants and cleaning materials, from the maintenance of machinery and equipment must be collected in holding drums and removed from site by a specialist oil recycling company for recycling or disposal at an approved hazardous waste site.

10.8.3 Waste Water

Water from kitchens, laboratories and sinks must be discharged into a conservancy tank for disposal at a licensed waste disposal site. Runoff from refuelling facilities / workshops / machinery washing areas and concrete batching areas must be collected into a conservancy tank and disposed of at an approved waste disposal site.

The Contractor will be required to submit a method statement detailing how wastewater would be collected from all wastewater generating areas, as well as storage and disposal methods.

10.9 Dust Management

Material in transit should be loaded and contained within the load bin of the vehicle in such a way as to prevent any spillage onto roads and the creation of dust clouds. If necessary, the load bin of the vehicle shall be covered with a tarpaulin to prevent dust.

Dust is to be controlled on unpaved access roads and site roads using sprayed water.

Contractors are responsible for managing dust generated as a result of their activities. Some dust control measures which are normally applied during construction are presented in this section for inclusion by the Contractor in the Dust Control Method Statement:

- Operate vehicles within speed limits, where no speed limit has been specified the limit shall be 20km/h;
- Wash paved surfaces within the construction area twice a week;
- Minimise haulage distances;
- Apply water to gravel roads with a spraying truck when required;
- Environmentally Friendly soil stabilisers may be used as additional measures to control dust on gravel roads and construction areas;
- Dust suppression measures will also apply to inactive construction areas. (An inactive construction site is where construction activities will not be undertaken for a month or more);
- Construction material being transported by trucks must be suitably moistened or covered to prevent dust generation where practical;
- Implement a system of reporting excessive dust conditions by construction personnel (as instructed through Environmental Awareness Training);
- Implement a dust monitoring programme as specified in Section 5 of the CEMPr;
- Water used for dust control shall only be taken from approved sources.

Exposed soil and material stockpiles must be protected against wind erosion. The Contractor is responsible for the implementation of adequate dust suppression measures (e.g. water spray vehicles, covering of material stockpiles, etc.) where required.

Sand, stone and cement shall be stored in demarcated areas and shall be covered or sealed to prevent wind erosion and resultant deposition of dust on surrounding indigenous vegetation.

10.10 Erosion and Sedimentation Control

Erosion and sedimentation control measures must be implemented for the duration of construction. Contractors must protect all areas susceptible to erosion by installing necessary temporary and permanent drainage works as soon as possible and by taking any other measures necessary to prevent storm water from concentrating and scouring slopes and banks.

Any erosion channels/gullies developed during construction must be backfilled and compacted and the areas restored to a proper condition. Stabilisation of cleared areas to prevent and control erosion and/or sedimentation must be actively managed.

Traffic and movement over stabilised areas must be restricted and controlled, and damage to stabilised areas repaired and maintained. In areas where construction activities have been completed and no further disturbance is envisaged, rehabilitation and revegetation should commence as soon as possible.

Structural and non-structural (vegetative) erosion control measures shall be designed, implemented, and properly maintained in accordance with best management practices which will include the following:

- Scheduling of activities to minimise the area of disturbance at any one time;
- Implementation of re-vegetation as early as feasible;
- Limiting construction traffic and/or avoidance thereof on access roads and areas to be graded to the extent feasible at drainage ditches;
- Compacting loose soil as soon as possible after excavation, grading, or filling;
- Using silt fences, geo-textiles, temporary rip-rap, soil stabilisation with gravel, diversionary berms or swales, small sedimentation basins, and gravelled roads to minimise transport of sediment;
- Develop and implement an erosion and sedimentation control environmental method statement and ensuring that construction personnel are familiar with and adhere to the requirements thereof;
- Managing runoff during construction;

The Contractor shall be responsible for checking and maintaining all erosion and sedimentation controls.

10.11 Storm Water Management

The Contractor must ensure that pollution of ground or surface water does not occur as a result of site activities. The Contractor must be aware that, apart from run-off from overburden and stockpiles, storm water can also be contaminated from batch plants, workshops and vehicle wash-down slabs and that contaminants during construction may include hydrocarbons from fuels and lubricants, sewerage from employee ablutions and excess fertiliser from rehabilitated areas, etc.

The Contractor shall take note that discharges to controlled waters such as the sea, rivers, groundwater or to sewerage systems are controlled under South African Water Legislation. The following specific measures are required:

- Temporary drainage must be established on site during the construction period until permanent drainage is in place. Contractors are responsible for maintaining the temporary drainage in their areas. Contractors must provide secondary drainage that prevents erosion;
- Contractors must employ good housekeeping in their areas to prevent contamination of drainage water;
- The Contractor shall clear stagnant water;

- Contractors shall ensure that no contaminated surface water flows off-site as a result of their activities. Silt traps shall be constructed to ensure retention of silt on site and cut-off ditches shall be constructed to ensure no runoff from the site except at points where silt traps are provided. The Contractor shall be responsible for checking and maintaining all silt traps for the duration of the project;
- Silt Fencing or similar alternatives shall be installed at the perimeters of actively disturbed areas
- If applicable, the Contractor shall be responsible for collection, management, and containment within the site boundaries of all water emanating from general site preparation activities. Methods for removal of water from excavations and trenches shall be agreed with the Transnet Construction Manager and Project Environmental Manager prior to implementation. No discharge of water to off-site land or surface water bodies will be allowed;
- On-site drainage shall be accomplished through gravity flow. The surface drainage system shall consist of mild overland slopes, ditches, and culverts. The graded areas adjacent to buildings shall be sloped away with a 5% slope. Other areas shall have a minimum slope of 0,2% or as otherwise indicated.

10.12 Noise Management

The Contractor must take precautions to minimise noise generated on site as a result of construction activities, especially when working in areas or on activities that may impact on surrounding sensitive receptors. The following noise control measures must be implemented:

- Keep all equipment in good working order;
- Operate plant and equipment within its specification and capacity and don't overload machinery;
- Ensure that equipment is turned off when not in use;
- Apply regular maintenance, particularly with regards to lubrication;
- Operate equipment with appropriate noise abatement accessories, such as sound hoods;
- Sensitive social receptors shall be notified of any excessive noise-generating activities that could affect them.

Noise control measures to be implemented by the Contractor must be clearly specified in the noise control method statement and must as a minimum take into consideration the following:

- Ensure that the potential noise sources conform to the South African Bureau of Standards recommended code of practice, *SANS 10103:2004*, so that it will not produce excessive or undesirable noise when released;
- All the Contractor's equipment shall be fitted with effective exhaust silencers and shall comply with the South African Bureau of Standards recommended code of practice, *SANS 10103:2004*, for construction plant noise generation;
- All the Contractor's vehicles shall be fitted with effective exhaust silencers and shall comply with the Road Traffic Act, (Act 29 of 1989) when any such vehicle is operated on a public road;

- Contractors shall ensure that all noise-related occupational health provisions are met. (Occupational Health and Safety Act, (Act 85 of 1993).

10.13 Water Provision and Management

Contractors shall provide safe drinking water fit for human consumption at site offices and all other working areas. All drinking water must be taken from approved sources and comply with recognised standards for potable use. The generally acceptable standard is that a supply of drinking water shall be available within 200m of any point on the construction site. Drinking water and multi-purpose use water storage facilities must be clearly distinguished and marked.

Abstraction of water from any water course (stream, river, or dam) without the expressed permission of the Transnet Construction Manager and Environmental Officer is not permitted. Such permission shall only be granted once it can be shown that the water is safe for use, that there is sufficient water in the resource to meet the demand, and once permission has been obtained from the Department of Water and Sanitation in accordance with the requirements of the National Water Act (Act 36 of 1998).

Methods must be employed to ensure that water is not wasted. Environmental awareness training must be used to create awareness with staff to conserve water and to prevent pollution of water.

Method Statement(s) must be prepared by the Contractor for the various water uses. The Contractor shall keep record of the quantities of water used during construction (including use by sub-contractors), irrespective of the purpose of use.

10.14 Handling and Batching of Concrete and Cement

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

Concrete and cement mixing directly on the ground is not permitted and must take place on impermeable surfaces.

Concrete batching shall only be conducted in demarcated areas which have been approved by the Transnet Construction Manager and Environmental Officer. Such areas shall be fitted with a containment facility for the collection of cement-laden water. This facility shall be bunded and have an impermeable surface protection so as to prevent soil and groundwater contamination.

Concrete batching activities must be located away from environmental sensitive areas (as defined in this CEMPr). All runoff from batching areas must be strictly controlled, and cement-contaminated water must be collected, stored and disposed of off-site at a licensed waste disposal site. Contaminated water storage facilities must not be allowed to overflow and appropriate protection from rain and flooding must be implemented.

Washing of equipment and tools used for the purpose concrete mixing such as shovels, mixer drums, concrete chutes, etc. shall be done within a designated wash-bay facility. Water used for washing shall be restricted as far as practically possible and must be re-used

Ready-mix concrete trucks are not allowed to wash out anywhere other than in designated wash-bay facilities. The facility must be approved for this purpose by the Transnet Construction Manager and Environmental Officer.

The Contractor shall periodically clean out hardened concrete from the wash-bay facility or concrete mixer, which can either be reused or disposed of as per accepted waste management procedures.

Used (empty) cement bags must be collected and stored in weatherproof containers to prevent wind-blown cement dust and water contamination. Used cement bags are not allowed to be used for any other purpose and must be disposed of on a regular basis via the Contractors' waste management system and in accordance with relevant approved environmental method statements.

All excess concrete must be removed from site and disposed of on completion of concrete works. The washing of visible remains of cement or concrete into the ground is not permissible. All excess aggregate should also be removed.

The Contractor is required to submit a method statement detailing cement storage, concrete batching areas and methods, method of transport of cement and concrete, storage and disposal of used cement bags for each concrete batching operation.

10.15 Spray Painting and Sandblasting

Spray painting and sandblasting should be kept to a minimum. All painting should, as far as practicable, be done before equipment and material is brought to site. Touch-up painting is to be done by hand painting or by an approved procedure. A Method Statement shall be submitted to the Transnet Environmental Officer for approval.

Only approved sources of sand may be used for sandblasting. The contractor shall ensure that the sandblasting methodology allows for measures to minimise dust generation. A detailed method statement must be prepared and submitted for approval by the Transnet Construction Manager and Environmental Officer.

The relevant Contractor will inform his Environmental Officer of when and where spray painting or sandblasting is to be carried out prior to commencement of work. The Contractor's Environmental Officer will monitor these activities to ensure that adequate measures are taken to prevent contamination of the soil.

If the area is in confined or elevated areas, a protection plan must be issued for approval by the Transnet Environmental Officer.

10.16 Management of Hazardous Substances

Contractors shall develop and implement environmental method statements for the handling, storage, use and disposal of fuel, hazardous and poisonous substances including hydrocarbon containing materials.

Contractors shall comply with all relevant national, regional and local legislation with regard to the transportation, use and disposal of hazardous materials.

Material Safety Data Sheets (MSDS) for all hazardous substances shall be kept on site. Information on all hazardous substances shall be made available to personnel. Personnel handling hazardous substances shall be adequately trained and educated on proper use, handling and disposal.

A Register of hazardous substances, together with storage procedures for these materials shall be developed and maintained by the Contractor's Environmental Officer for the duration of the Contractors' works on site.

10.16.1 *Storage of hazardous substances / materials*

Petrochemicals, oils and grease shall only be stored under controlled conditions. All hydrocarbon materials (i.e. fuel, oil, hydraulic fluids and grease) shall be stored in a secured, designated area that has restricted entry and all containers shall be closed to prevent rainwater ingress. Authorisation to store hazardous substances shall be obtained from the relevant authority. Warning signs indicating the nature of the stored materials shall be clearly displayed on the storage facility or containment structure. Bunded containment areas shall be provided for the storage of hazardous materials to prevent pollution of the surrounding environment by leaks or spillages.

Tanks containing fuels shall have lids and shall remain firmly shut. Fuel stores shall be placed on a bunded sealed base. The bund should accommodate 110% of the total volume for single tanks. Where two or more tanks are installed within the same bund, the bunds should accommodate 110% of the largest tank or 25% of the total capacity of all tanks, whichever is the greater. Any waste water or spilled fuel collected within the bund shall be disposed of as hazardous waste.

Necessary precautions shall be taken to prevent fires or spills at hazardous substance stores. No smoking shall be allowed in the vicinity of the stores. Adequate fire-fighting equipment shall be available at these stores.

Where oil-separators are proposed to be installed, these shall be approved by the Transnet Construction Manager and Environmental Officer and will be subject to the approval of an environmental method statement governing environmental and related risks.

10.16.2 Fuels and Chemicals

Contractors shall ensure that the necessary materials and equipment are available on site to deal with spillages of any of the materials used or stored on site. All measures shall be taken to ensure that oil, petrol, diesel, or other hazardous substances are not discharged onto the ground.

Drip trays shall be placed under all pumps, machinery and equipment (requiring oil, diesel, or other substances for operation) that are to remain in one position for longer than two days. The drip trays shall be emptied regularly and the contaminated material(s) disposed of off-site at a facility capable of and authorised to handle such waste water. Drip trays shall be cleaned before any possible rain events that may result in the drip trays overflowing. Used oil shall be stored at a central location, prior to removal off site, in appropriate containers with covers.

All oil-, petrol-, and diesel-soaked sand shall be removed immediately and shall be disposed of as hazardous waste. Equipment and machinery shall be adequately maintained and regularly inspected.

10.16.3 Servicing of Plant and Equipment

The servicing of plant and equipment shall take place in areas designated for this purpose. All waste generated by these activities shall be managed in terms of the requirements of this CEMPr.

All equipment that leaks onto the ground shall be repaired immediately or removed. The change of oil or lubricants shall be done at designated locations, except if there is a breakdown or an emergency repair. In such instances appropriate absorbent materials (or equivalent) and/or drip trays shall be available to collect any oil or liquids.

10.16.4 Workshops, Equipment, Maintenance and Storage

All vehicles and equipment must be kept in good working order to maximise efficiency and minimise the risk of pollution. Maintenance, including washing and refuelling of plant on site must be done at designated locations at workshop areas. These designated areas must be agreed with the Transnet Construction Manager and Transnet Environmental Officer. Contractors shall ensure that no contamination of surrounding areas occurs around workshops and plant maintenance facilities. All machinery servicing areas must be adequately bundled.

Drip trays should be used to collect used oil, lubricants and other substances during maintenance. Drip trays must be provided for all stationary plant. Washing of equipment should be restricted to urgent maintenance requirements only. Adequate wastewater collection facilities must be provided.

10.16.5 Stationary/designated Refuelling of Plant and Equipment

No vehicles or machines shall be serviced or refuelled on site except at designated and approved servicing or refuelling locations. No oil or lubricant changes shall be made except at designated locations, or in case of breakdown or emergency repair.

The Contractor shall store fuel and oil at a secure area, which shall be bunded to contain 110% of the total volume within the bund and designed with an impervious layer or liner or paved surface to prevent spillage from entering the ground.

The Contractor shall provide details of its proposed fuel storage and fuelling facility to the Transnet Environmental Officer for approval. The design shall comply with the regulations of the National Water Act, (Act 36 of 1998), the Hazardous Substances Act, (Act 15 of 1973), the Environmental Conservation Act, (Act 73 of 1989), National Environmental Management Act, (Act 107 of 1998), and the Occupational Health and Safety Act, (Act 85 of 1993), mainly the Construction - and Hazardous Chemical Substances Regulations.

10.16.6 Mobile Refuelling

In certain circumstances, the refuelling of vehicles or equipment in a designated area is not a viable/practical option and refuelling has to be done from a tank, truck or fuel bowser moved around on site. In such situations, the Contractor may request approval from the Construction Manager to conduct mobile refuelling subject to the following control measures:

- Secondary containment equipment shall be in place. This equipment shall be sized to contain the most likely volume of fuel that could be spilled during transfer.
- Absorbent pads or drip trays are to be placed around the fuel inlet prior to dispensing.
- Mobile refuelling units are to be operated by a designated competent person.
- The transfer of fuel must be stopped prior to overflowing. Fuel tanks or refuelling equipment on vehicles may only be filled to 90% carrying capacity.
- Mobile refuelling tanks must be stored in an area where they are not susceptible to collisions. The fuel storage area must be located away from environmental sensitive areas.
- All mobile refuelling tanks are to be properly labelled and fire extinguishers shall be located near the fuel storage areas. These extinguishers must be of a suitable type and size.

10.17 Spill Response

Contractors shall have adequate spill response materials/equipment on site which must be aligned with the volumes of hazardous substances used on site and the risk of pollution to environmental sensitive areas.

Contractors shall provide details of their spill response plan in the event of any spills of fuel, oils, solvents, paints or other hazardous materials for approval by the Transnet Construction Manager and Environmental Officer. The plan must outline measures to be taken in removing contaminated material from site and demonstrate complete removal of contamination.

The Contractor shall instruct construction personnel on the following spill prevention and containment responsibilities:

- Immediately repair all leaks of hydrocarbons or chemicals;
- Take all reasonable means to prevent spills or leaks;
- Do not allow sumps receiving oil or oily water to overflow;
- Prevent storm water runoff from contaminated areas which may have been caused by leaking or spilled drums of oil or chemicals;
- Do not discharge oil or contaminants into storm water or sewer systems.

If a spill occurs on land, the Contractor must:

- Immediately stop or reduce the spill;
- Contain the spill;
- Recover the spilled product;
- Remediate the site;
- Implement actions necessary to prevent the spill from contaminating groundwater or surface water;
- Dispose of contaminated material at a location designated thereto and provide proof thereof.

Any spill to water has the potential to disperse quickly, therefore, the spill must be contained immediately using appropriate containment equipment. If a spill to water occurs, the Contractor must:

- Take immediate action to stop or reduce the spill and contain it;
- Notify the appropriate on-site authorities;
- Implement actions necessary to prevent the spread of the contamination by deploying booms and/or absorbent material;
- Recover the spilled product;
- Properly dispose of spilled material and provide proof thereof.

10.18 Fire Prevention

Prior to the start of any construction work for the Project at the Port of Ngqura, all Contractors are required to develop detailed Fire Contingency Plans/Method Statements for each of their construction sites, which must include but not be limited to the following:

- A list of the major workplace fire hazards;
- Proper handling and storage procedures;
- Potential ignition sources (such as welding and smoking);
- Control procedures; and
- Type of fire protection equipment or systems to be used for control.

Contractors must take note that open fires are prohibited. Appropriate fire safety training shall be provided to staff that will be on site for the duration of the construction phase. Fire-fighting equipment shall be made available at various appropriate locations on the construction site.

10.19 Materials Handling and Storage

The potential environmental impact that may result from the handling, use, storage and disposal of materials used during construction must be minimised as far as reasonably possible. Environmental considerations such as proximity to environmental sensitive areas (vegetation, Coega River and Coega River Estuary etc.) must be taken into consideration when citing spoil and other material storage areas. These storage areas must be agreed with the Transnet Construction Manager and Environmental Officer.

10.20 Transportation of Materials

The Contractor is responsible for ensuring that all suppliers and delivery drivers are aware of requirements and restrictions (e.g. no-go areas) in terms of this CEMPr. Material must be appropriately secured to ensure safe passage between destinations during transportation.

Loads must have appropriate cover to prevent spillage from vehicles where practical. The Contractor will be held responsible for any clean-up resulting from the failure to properly secure transported materials.

10.21 Stockpiling of Materials

The Contractor must plan activities so that material from excavations can as far as possible be transported to and placed at points where it is required for re-use and or storage areas for future use.

Should temporary stockpiling become necessary, the areas for the stockpiling of excavated material must be indicated on the site layout plan. Stockpile areas will only be permitted within the authorised project footprint or existing approved stockpile areas within the Coega IDZ.

Any area to be used for stockpiling or material laydown shall be stripped of topsoil. Stockpiles must be positioned and sloped to create the least visual impact. Material stockpiles may not be sited in close proximity to the project footprint boundaries in order to avoid impacts on the surrounding Open Space Areas. Stockpiling of material is not permitted in close proximity of the Coega River and Coega River Estuary.

Stockpiles must as far as reasonably possible be positioned in areas sheltered from wind and rain to prevent erosion and dispersion of loose materials. Stockpiled soil shall be protected by adequate erosion-control measures. Stockpiles shall be placed on flat surfaces where runoff will be minimised.

The height and slope of material stockpiles must be limited to reduce wind entrainment. Stockpiles must preferably not be higher than 2m.

No foreign material generated during construction is allowed to remain on site. Areas affected by stockpiling must be reinstated, where required, to the satisfaction of the Transnet Construction Manager and Environmental Officer and must be done in accordance with the requirements for rehabilitation that may be specified by this CEMPr and/or the Coega Development Corporation (CDC).

Contractors shall be required to submit a method statement for the management of all stockpile and material laydown areas for approval by the Transnet Construction Manager and Environmental Officer.

10.22 Quarries and Borrow Pits

The contractor shall make use of commercial suppliers for all rock and sand raw materials. The Contractor shall ensure that suppliers are in possession of required authorisations permits/licenses and keep record of the quantity of material supplied.

The Contractor will not make direct use of any borrow pits and quarries unless written approval from the Construction Manager has been obtained and a Method Statement has been submitted and approved. The Method Statement shall provide a detailed description of the location of the borrow pits and/or quarries and the procedures that will be followed to adhere to any pertinent national or local legislation (e.g. mineral extraction, rehabilitation, safety and noise levels).

10.23 Energy Management

The Contractor shall measure and keep updated records of the following:

- Electricity consumption (to be measured in Kilowatt Hours);
- Fuel consumption (to be measured in liters).

10.24 Visual Impact Management

Transnet shall ensure that the following are considered and allowed for during design of buildings and construction activities and shall instruct service providers and contractors accordingly:

- Lighting in works areas and site camps must be sited in such a way and directed away from sensitive areas within the Project Footprint to avoid disturbance of animals and birds in the Port and on the islands;
- Cut and fill slopes for roads and other accesses should be shaped so that the new cut face is similar to the existing adjacent slopes and re-vegetated with indigenous vegetation.
- The design of structures and infrastructure must take the Visual Impact Guidelines of the Coega Industrial Development Zone into consideration and must take place in consultation with the Coega Development Corporation.
- Disturbance caused by the establishment of access/haul roads, site camps and laydown areas must be limited and restricted within the authorised project footprint and must be rehabilitated on completion of construction.
- All areas not required for operation, but cleared for construction, must be rehabilitated in accordance with the requirements of this CEMPr.
- Lighting should be carefully planned and designed to avoid excessive lighting in the vicinity of the port, within acceptable safety parameters;
- All building and lighting designs shall be made available to SANParks for comment.

10.25 Social and Labour Issues

The criteria for and selection of labourers, sub-contractors and suppliers for the project shall demonstrate preference for the local community and shall be aligned with the criteria set by the Coega Zone Labour Agreement (ZLA) as well as Transnet Policies and Procedures.

10.25.1 Worker HIV/Aids Awareness Programmes

Contractors are required to provide proper HIV/AIDS awareness training to all workers on site. A detailed method statement indicating how, where and when the training will be done must be compiled. Records must be kept of all awareness training sessions together with lists of attendees. The programme can be integrated into the environmental awareness programme for workers.

11. Project Environmental Specifications

This Section describes specific environmental standards and requirements to be complied with for all construction work at the Port of Ngqura.

These requirements are derived from conditions of Port and Project Environmental Authorisations and/or other applicable environmental permit(s) and licence(s) as well as recommendations and mitigation measures from various Specialists contained in relevant Environmental Impact Reports.

11.1 Demarcation of Open Space Areas

Protection of Open Space Areas in the Coega IDZ and Port of Ngqura is a mandatory requirement in terms of the legislative framework applicable to the area. The demarcation of Authorised Open Space Areas within and/or adjacent to the Project Footprint must be undertaken prior to commencement of any construction related activities to ensure protection of the Open Space areas from accidental ingress or damage during construction. Demarcation of Open Space Areas shall be done in accordance with the methodology approved for the Coega IDZ and Port of Ngqura. The demarcation methodology is outlined below:

- Demarcation of the Open Space must be done using wooden survey poles;
- The top 30cm of the wooden survey poles must be painted with weatherproof white paint, followed by the next 30cm painted green;
- Wooden survey poles must be a minimum width of 50mm;
- Wooden survey poles must be between 1.5 and 2.1m in height and spaced accordingly, depending on the density of the vegetation, with a maximum distance of 10m apart;
- Signage to indicate the boundaries of the Open Space System within the Port of Ngqura must be erected in various locations along the Open Space boundary.

11.2 Identification, Removal and Relocation of Plant Species of Special Concern

All plant species of special concern as well as plant species suitable for landscaping and rehabilitation purposes shall be identified, removed and relocated (Search and Rescue) to pre-identified Areas within the Port of Ngqura, prior to commencement of any construction related activities within the Project Footprint. Search and Rescue shall be undertaken in accordance with the requirements of relevant Legislation and permits issued by the competent Authority.

Transnet shall appoint a suitably qualified and experienced Ecological Specialist to undertake the required Search and Rescue. The Specialist will identify species that must be relocated, selectively remove the plants, cuttings and, where possible, seed and translocate the species to the designated areas.

The appointed Specialist shall be responsible for maintenance of relocated plant species for a specified period. Monitoring of the survival of rescued plant species shall be undertaken for a specified period and monitoring reports submitted to the Transnet Project Environmental Manager.

11.3 Environmental Sensitive Areas (ESAs)

Contractors are advised that certain areas in and around the development footprint are environmentally sensitive and include amongst others vegetated areas, the Coega River and Estuary, wetlands, and sites of Archaeological and Paleontological importance. ESAs may occur within the project area but may not necessarily form part of the development footprint.

In order to minimize adverse impacts to the ESAs during construction, ESAs must be clearly demarcated and must not be entered or used for any purpose. Demarcation must be highly visible to ensure that the location of sensitive areas is obvious from the Contractor's site and from the approach to the Contractor's Site.

Contractors must prevent physical disturbance or pollution of these areas. Transnet may impose conditions on operations near ESAs including instructing contractors to restrict the number of construction personnel and equipment operating near these areas.

11.4 Demarcation of Works Areas

Prior to the commencement of construction, the actual site to be developed must be clearly demarcated by means of highly visible barriers and must be approved by the Transnet Construction Manager and Project Environmental Manager. Areas within the authorised project footprint that is not required for construction shall remain undisturbed and must be clearly demarcated as no-go areas. Vegetation within the demarcated zone required for construction may be cleared. Disturbance of vegetation outside of the demarcated development footprint is not permitted.

11.5 Protection of Faunal Species

Transnet shall appoint a suitably qualified and experienced Ecological Specialist to identify, remove and relocate fauna that may be present within the project footprint to other agreed Open Space Areas within the Port or Coega IDZ. The Specialist shall undertake required activities in accordance with the requirements of relevant Legislation and permits issued by the competent Authority.

On no account shall any hunting or fishing activity of any kind be allowed. This includes the setting of traps, or the killing of any animal caught in construction areas. On no account shall any animal, reptile or bird of any sort be killed. This specifically includes snakes or other creatures considered potentially dangerous that may be present on site.

Where animals are encountered in works areas during construction contractors are required to notify the Transnet Environmental Officer who would be responsible for implementing required actions for effective relocation in consultation with the appointed Specialist and relevant authority.

Lighting in construction areas must be carefully planned so as to not disturb animals in close vicinity of the works areas and in the surrounding Open Space Areas. The contractor Environmental Officer shall monitor all open excavations and trenches on a daily basis for any animals that may be trapped.

The Contractor shall provide adequate facilities for all his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The Contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

11.6 Vegetation Clearing

The destruction of certain tree species requires a license in terms of the National Forest Act of 1998 as amended. Transnet shall be responsible for obtaining the required license prior to the clearance of any vegetation. The clearing of vegetation should be kept to a minimum, keeping the width and length of earthworks to a minimum. Blanket clearing of vegetation shall not be permitted. Vegetation shall only be cleared in areas required for construction.

Vegetation clearing must take place in a phased manner in order to maintain vegetation cover for as long as possible. Cleared vegetation will not be permitted to remain on site. Contractors must give consideration to chipping of vegetation and stockpiling of vegetation chips in designated areas for use during rehabilitation. Alternatively cleared vegetation must be removed from site and disposed of as waste at a licensed waste disposal site.

During clearing of woody vegetation no ground cover or grass and topsoil must be removed and damage to this layer must be minimised as far as possible.

The Contractor shall ensure that all works are undertaken in a manner that prevents disturbance of vegetation outside of the development footprint.

11.7 Removal of Topsoil

Topsoil shall be removed up to a maximum depth of 30cm and stockpiled for re-use during rehabilitation and landscaping activities. Topsoil shall be stockpiled separately from other subsoil and material stockpiles.

Topsoil stockpiles shall not be higher than 2m and shall be located in predetermined designated areas. It is recommended that stockpiles are flattened at the top, without being compacted, to allow for easier growth of vegetation and ultimate protection against erosion.

Vehicles shall not be allowed access onto topsoil stockpiles after it has been placed. Topsoil stockpiles shall not be allowed to become contaminated with oil, diesel, petrol, waste or any other material, which may inhibit the later growth of vegetation. Topsoil stockpiles that are not used within three (3) months after stripping shall be seeded to prevent dust and erosion.

The Contractor shall apply soil conservation measures to the stockpiles to prevent erosion. This can include the use of erosion control fabric or grass seeding.

Topsoil shall be reinstated upon completion of construction (in all areas requiring rehabilitation/reinstatement) to allow plants to rapidly re-colonise bare soil areas.

11.8 Protection of Heritage Resources

If any archaeological or paleontological artefacts or remains are uncovered during earthmoving activities, work in the vicinity of the find must cease immediately. The Contractor will be required to notify the Transnet Construction Manager and Environmental Officer. The Transnet Environmental Officer will be responsible for contacting the South African Heritage Resources Agency (SAHRA) and relevant authorities.

The Contractor will be required to abide by the specifications as set out by SAHRA or the heritage specialist appointed to investigate the find. The Contractor may not, without a permit issued by the relevant heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb archaeological or paleontological material.

If a grave or midden is uncovered on site, or discovered before the commencement of work, all work in the immediate vicinity of the graves/middens shall be stopped and the Transnet Construction Manager informed of the discovery. SAHRA and the relevant authority must be contacted and in the case of graves, arrangements made for exhumation and reburial.

Transnet shall appoint an archaeologist and palaeontologist to undertake monitoring as specified by this CEMPr as well as to train site monitors (such as Transnet Environmental Officer, ECO and Contractor Environmental Officer) to identify archaeological and paleontological sites and to report to the construction manager when such sites are found/uncovered.

The Transnet Environmental Officer and independent Environmental Control Officer shall examine all major bedrock excavations for fossil material, at regular intervals. Any fossil remains that may be found shall be safeguarded in situ.

11.9 Rehabilitation of Disturbed Areas

Contractors shall rehabilitate the entire site upon completion of work. Transnet may require the Contractor to appoint a suitably qualified rehabilitation specialist to develop a detailed rehabilitation plan. The Rehabilitation Plan must be submitted to the Transnet Construction Manager and Project Environmental Manager for approval, at least six weeks before completion of construction works. The following are critical aspects to be included in the rehabilitation plan:

- Details of soil preparation procedures;
- A list of the plant species that will be used in the rehabilitation process. Note that these should all be indigenous species that are endemic to the area;
- Procedures for watering the planted areas (frequency of watering, methodology proposed etc.);
- An indication of the monitoring procedures that will be put in place to ensure the successful establishment of the plants (duration and frequency of monitoring, proposed criteria for declaring rehabilitation as being successful).
- Procedures for the prevention of the establishment and spread of alien invasive species.

Contractors will be responsible for fully rehabilitating any area disturbed by their activities outside the construction footprint, and this responsibility will extend to the maintenance of acceptable vegetative cover in these areas, as specified below, for a full 12-month period.

11.9.1 Scope for Rehabilitation

All areas that are disturbed by construction activities must be rehabilitated as soon as possible using appropriate indigenous vegetation. Contractors are responsible to ensure that available topsoil is stockpiled in predetermined designated areas as described in section 5.7 for subsequent use during rehabilitation.

Rehabilitation will also include stabilizing any areas that are cleared or disturbed for construction purposes, which will not be incorporated into open space or buffer zones (i.e. areas that may be developed in the near future). Methods for stabilization shall be indicated in the method statements.

All construction equipment and excess aggregate, gravel, stone, concrete, bricks, temporary fencing and the like must be removed from site by the contractor upon completion of work. No discarded materials of any nature are allowed to be buried on site.

11.9.2 Landscaping and preparation for re-vegetation

All areas requiring reshaping must be cut, filled and compacted so as to blend with the surrounding landscape. Topsoil removed from the area initially must be replaced and 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 the crust must be loosened by scarifying to a depth of 150 mm.

All areas no longer required for construction activities must be rehabilitated as soon as they become available for rehabilitation.

11.9.3 Seeding

Seeding methods shall be included in the Rehabilitation Plan. The method should cover but not be limited to the seed mix, seed application methods (e.g. hydro-seeding), fertilization, and irrigation when rainfall proves inadequate.

When valley thicket or bush-clump sections are rehabilitated, aloes and nurse species are to be planted to facilitate the recovery process. The use of anti-erosion compounds should be considered on slopes where there is a risk of erosion.

11.9.4 Acceptable Cover

Acceptable cover shall be deemed to have been achieved when, in the opinion of an independent ecological specialist, 75% of the grassed area has been covered with mature plants, with no bare areas exceeding one meter squared in maximum dimensions except where rocks prevent such coverage.

11.9.5 Maintenance of Rehabilitated Areas

Contractor liability with regards to maintenance of rehabilitated areas will cease 12 months after acceptable cover has been established over all rehabilitated areas on site providing that acceptable cover is maintained throughout the 12-month period.

Control of the spread of alien species, especially Rooikrans (*Acacia Cyclops*) and Russian Tumbleweed (*Salsola Kali*), should be managed by monthly monitoring of the area and removal of these seedlings. Monthly monitoring of the area will also allow for modifications to the rehabilitation programme, for example the need to irrigate, sow more seed or fertilise. The rehabilitation programme should be flexible allowing for these modifications.

11.10 Alien Invasive Vegetation Management

The eradication of alien invasive vegetation species shall be done in accordance with the requirements of the Alien Invasive Plant Eradication Plan that has been developed and is currently implemented for the Port of Ngqura. Transnet National Ports Authority is ultimately responsible for the implementation of the Plan. Contractors must however ensure that their works areas remain clear of alien plant species throughout the construction phase. Monitoring the growth of alien invasive vegetation in all works areas shall be undertaken by the Contractor Environmental Officer and shall be ongoing for the duration of construction.

Contractors shall develop a method statement for the eradication and management of alien vegetation within their works areas. The method statement shall include amongst others management measures for fire and the spread of alien vegetation seeds that may be released when vegetation is removed. The method statement must further address the safe, effective disposal of removed vegetation specifically in terms of storm water management.

The use of herbicides on site must be approved by the Provincial Department of Agriculture and recommended by the Endangered Wildlife Trust's Poison Working Group to be environmentally safe.

Two distinct species that occur around the Port of Ngqura are: Russian Tumbleweed (*Salsola kali*) and Rooikrans (*Acacia cyclops*) and methods for clearance are included in the aforementioned plan.

11.11 Rodent Control and Monitoring

TNPA implements and maintains a poison free programme for the control and monitoring of rodent species inside and around the Port. The Port of Ngqura has been declared a poison-free zone and under no circumstances is poison allowed to be used for any purpose inside the Port.

TNPA developed a rodent control and monitoring plan that outlines the requirements for rodent control inside the Port. Contractors shall ensure compliance with the requirements of this Plan. A copy of the Plan can be obtained from Transnet where required.

11.12 Reptile Species of Special Concern

Specific caution shall be taken during construction activities within the Bontveld habitat or any other vegetated area inside or around the Port, to prevent harm to reptiles.

The discovery of any specimens of the Albany Adder should immediately be brought to the attention of the Transnet Project Environmental Manager and Construction Manager who will be responsible for contacting the relevant conservation authorities. Photos of the Albany Adder will be made available to contractors working inside the Port, for easy identification.

11.13 Traffic Management

Contractors shall ensure that the transportation of construction personnel is aligned with current practices in the Coega IDZ. The use of buses and/or mini buses are encouraged to reduce the number of private vehicles on the road network.

Material delivery to site should be done using large vehicles or truck-trailer combinations where practical to reduce the number of trucks on the road. Overloading of vehicles should be avoided to limit the impact on the structural capacity of roads.

Well maintained, roadworthy vehicles shall be used together with sufficiently trained and licensed drivers. Monitoring of vehicle maintenance and driver competency shall be undertaken in accordance with the requirements of the Transnet Health and Safety Project Specification.

Vehicles are not permitted to leave access roads. Turning of vehicles should only take place within a clearly demarcated "turn area" located within the approved construction footprint.

The contractor must co-ordinate the loading and offloading of material during the construction phase so as to ensure that vehicular movement is in one direction only at any one time and that side-tracks are not created on the site.

Vehicles should only be parked within designated parking areas as demarcated on the site layout plan.

11.14 Emergency Preparedness and Response

Contractors shall compile and maintain environmental emergency procedures to deal with incidents and accidents, together with appropriate response procedures, for application throughout construction. The emergency response procedures must include, but not be limited to fires and spillages of hazardous substances on the ground or in water. The Procedure must be submitted to the Transnet Construction Manager and Environmental Officer for approval.

Contractors shall be responsible for the implementation and revision (when required) of the emergency preparedness and response procedures and must ensure that all incidents are recorded in a register. The incident register must be kept up to date and made available for audit purposes.

11.15 Oil Spill Contingency Plan

TNPA has developed and continues to implement an oil spill contingency plan for port operation, in accordance with the National Contingency Plan for the Prevention and Combating of Pollution from Ships and Offshore Installations. The plan defines the areas of responsibility and the preparatory activities required prior to an incident and the response actions to be initiated after an oil spill has occurred in the Port of Ngqura.

Contractors are required to submit a detailed environmental method statement for the storage and handling of hydrocarbons and refueling of plant and equipment for review and approval by the Transnet Construction Manager and Environmental Officer. The method statement must adequately address measures to prevent, manage, contain and clean-up spills on land and in water. The method statement must take cognisance of the requirements of the aforementioned Ngqura Harbour Spill Contingency Plan, to be obtained from the Transnet Environmental Officer or Project Environmental Manager.

Oil spill kits and equipment shall be available in all works areas and shall be regularly maintained and replaced where required.

All Vessels operating within the Port for construction purposes including delivery vessels and dredgers must have a detailed spill control plan on board as well as adequate materials and equipment to respond to and clean up spills.

11.16 Ballast Water Management

TNPA developed and implements a Ballast Water Management Plan for the Port of Ngqura. The plan clearly describes the International Maritime Organization's Guideline requirements for ballast

water management. All Vessels operating within the Port for construction purposes including delivery vessels and dredgers will be required to adhere to the requirements of this plan at all times.

Prevention of alien organisms introduced through ballast water can be dealt with in various ways. Contractors must submit method statements for ballast water management. The method statement must include specifications for emptying and cleaning of ballast water tanks while en-route to, and still outside of South African territorial waters.

A copy of the Port of Ngqura Ballast Water Management Plan will be provided to relevant contractors and must be incorporated into the required method statements.

11.17 Fishing in the Port

Contractors should take note that fishing and/or removal of any marine life within the port boundaries are not permitted. This requirements must be communicated to all workers, sub-contractors, vendors and service providers.

11.18 Access to Islands

Uncontrolled access to any of the three Algoa Bay islands is prohibited. No unauthorized visits to the islands will be allowed.

Port Control is responsible for reporting any potentially illegal or unauthorized access to South African National Parks (SANParks) and the relevant authorities, including the TNPA Environmental Management Department.

11.19 Impact on Birds

Where construction activities require blasting the relevant contractor must ensure adherence to blasting guidelines for the Port. This should ensure that injury to birds is kept to a minimum.

Construction works, especially blasting, dredging, and other noisy activities, must be carefully planned and controlled to avoid disturbance of the breeding bird populations on the nearby Islands.

Lighting in works areas and site camps within the Port must be directed away from the Islands and other sensitive areas to minimize and/or avoid disturbance of bird populations.

11.20 Environmental Requirements Specific to Dredging

Appointed dredging contractors are required to develop detailed environmental method statements for specific dredging activities inside the Port (including dredging methodology) and the management of dredged material. The method statements must take cognisance of the requirements of this CEMPr (more specifically the Project Environmental Specifications) and must be approved by the Transnet Construction Manager and Environmental Officer.

11.20.1 Transportation and Disposal of Dredged Material

The offshore disposal of dredged material must be carried out in terms of the conditions set out by the London Protocol and the requirements of the National Environmental Management Integrated Coastal Management Act, No 24 of 2008. The dredging contractor shall ensure that the disposal of dredged material conforms to the requirements of the offshore disposal permit, obtained from the Department of Environmental Affairs. A copy of the permit will be made available to the contractor for inclusion into their method statement and must be displayed at all times on the dredger and disposal barges operating within the Port.

The appointed dredging contractor shall keep a GPS record of the route followed by the dredge spoil disposal vessel. This record must include the following data:

- Time of departure from the dredge site;
- Route followed by the vessel (GPS track);
- Time of arrival at the disposal site;
- Position of the vessel at the time of starting to discharge the dredge spoil;
- Heading and speed of the vessel at the time of starting to discharge the dredge spoil;
- Position of the vessel at the time of completion of discharge of the dredge spoil;
- Heading and speed of the vessel at the time of completion of discharge of the dredge spoil; and
- Route followed by the vessel back to the dredge site.

These records must be provided to the Transnet Construction Manager on a daily basis, together with the contractor's daily site diary.

11.20.2 Water Quality Monitoring

Method statements for the monitoring of water quality during dredging and dumping of dredged material must be submitted to the Transnet Construction Manager and Environmental Officer for approval.

These method statements must as a minimum include the following:

- Detailed description of the methodology for water sampling and measurement;
- Detailed information of the water quality sampling and measurement equipment;
- How the contractor will ensure that standards for suspended solid concentrations are not compromised whilst waiting for the monitoring results;
- Contractor and/or consultant responsible for undertaking the required monitoring;
- Details and credentials of laboratory to be used for testing of samples (where applicable);
- Frequency of sampling;

- Response procedures should turbidity or dissolved oxygen start approaching set limits; and
- Provision of monitoring reports.

It should be noted that the water quality standards refer to total suspended solids (TSS). The contractor has the option of monitoring turbidity rather than total suspended solids given that turbidity can be determined in the field. However, should the Contractor choose this option, a key issue to be addressed in the environmental method statements is the establishment of a correlation between TSS and turbidity. This must be completed and agreed to by Transnet prior to the commencement of dredging activities.

The environmental method statements must highlight monitoring procedures for water quality in the vicinity of the dredging activity and during disposal of the dredged spoil. The conditions of the offshore disposal permit, authorizing the disposal of dredged spoil at sea must be acknowledged in the environmental method statement and must be complied with. The impact of the dredging activities on the marine environment must be controlled as much as is practically possible. Dredging activities have the potential to substantially increase the suspended solid concentrations and also to decrease the concentrations of dissolved oxygen in the water column particularly in areas close to the dredger.

A suspended solids (SS) standard has been developed for dredging contracts at the Port of Ngqura to ensure that the environmental impact of dredging is limited. It is the contractor's responsibility to ensure that the SS standard is adhered to.

The SS standards are as follows:

- The maximum acceptable SS concentrations due to dredging activities, as measured at the selected monitoring locations, shall not exceed 150 mg/l above the ambient concentrations except in areas designated as sensitive where the maximum acceptable SS concentration shall be 80mg/l above ambient SS concentration; and
- Once the measurement of 100mg/l above ambient level is attained or exceeded at the general monitoring stations or 50mg/l at the monitoring stations adjacent to any designated sensitive area, the contractor should ensure that the necessary mitigation steps are taken and documented to prevent a further increase in suspended solid concentration, which could lead to suspension of the operation when 150mg/l (general sites) or 80mg/l (sensitive sites) above ambient is exceeded.

It is recognized that the standard may not be met in the immediate vicinity of where the actual dredging activity is taking place at that time. For this reason, the mixing zone shall apply. The extent of this mixing zone is to be agreed upon prior to the commencement of dredging operations.

The general approach for the monitoring of turbidity levels is as follows:

- At each of the monitoring and reference sites, measurements will be collected from three different locations (replicates) in close proximity to each other;

- The measurements will be in the form of a profile, with the replicate readings averaged at each depth;
- The highest average value is the ruling ambient or monitoring value for that site;
- Should the ruling value at any of the general monitoring stations reach 100mg/l above ambient, the contractor must immediately notify the Environmental Manager for nominated representative;
- Should the ruling value at any of the sensitive area monitoring stations reach 80mg/l above ambient, the Contractor must immediately notify the Environmental Manager for nominated representative; and
- If any of the monitoring sites' ruling value exceeds 150 mg/l above the ambient value for that day, operations shall be stopped.

11.20.3 Dissolved Oxygen Levels

Method statements describing the methodology to be adopted for the monitoring of dissolved oxygen concentrations must be prepared and submitted to the Transnet Construction Manager and Environmental Officer for approval. The method statements must include the locations of reference and monitoring sites.

A dissolved oxygen (DO) standard has been developed for dredging at the Port of Ngqura to ensure that the environmental impact of dredging is limited. This threshold is 10% below the ambient DO levels measured outside of the area impacted on by the dredging plume. In terms of the South African Water Quality Guidelines, the minimum acceptable DO concentrations are 5mg/l. This minimum acceptable standard will apply even if ambient dissolved oxygen concentrations drop to less than 5.5mg/l.

It is the Contractor's responsibility to ensure that the DO standard is adhered to. Once the DO levels approach the threshold levels stipulated, the Contractor must ensure that necessary mitigation measures are taken and documented to prevent a further decrease in dissolved oxygen concentrations. Where further decrease in DO concentrations occur, dredging operations in the affected areas must be ceased until such time as the DO levels return to within acceptable levels.

The general approach for the monitoring of dissolved oxygen concentrations is as follows:

- At each of the monitoring and reference sites, measurements (dissolved oxygen levels, salinity and temperature simultaneously) must be collected from three different locations (replicates) in close proximity to each other;
- The measurements must be in the form of a profile, with the replicate readings averaged at each depth;
- The highest average value is the ruling ambient or monitoring value for that site;

- Should the concentrations of dissolved oxygen drop to 7% less than the ambient dissolved oxygen levels the Contractor must immediately notify the Project Environmental Manager; and
- If any of the monitoring sites ruling value exceeds the agreed to standards, operations must be stopped, which is especially important with regard to the monitoring sites close to sensitive areas.

11.21 Port Operational Environmental Management Requirements

TNPA developed and continue to implement an Operational Environmental Management Programme (OEMP) that addresses minimum environmental requirements and matters associated with the operation of the Port.

The OEMP provides the management framework required for the planning and implementation of operational activities, in accordance with the requirements of the environmental authorizations and recommendations contained in the Environmental Impact Reports, as well as legislative requirements.

All contractors and/or vessels entering and operating within the Port of Ngqura for construction or operational purposes are required to comply with the requirements of the Port OEMP that are applicable to their specific activities.

The Ngqura Harbour Masters Office will issue a copy of the OEMP to Shipping Agents and Vessel Captains for implementation. The TNPA Environmental Management Department will issue a copy of the OEMP to all contractors working within the Port.

11.22 Non-compliance by Contractor

Transnet can initiate a non-conformance for any non-compliance with environmental specifications and approved method statements. All non-conformances must be responded to within a 48-hour period depending on the severity of the non-conformance.

All internal non-conformances initiated by Transnet will be communicated to the ECO. All external non-conformances initiated by the ECO will be communicated by the Transnet Project Manager to relevant contractors and sub-contractors.

If a contractor fails to respond appropriately to a non-conformance, Transnet may have the situation remedied by an outside contractor and back charge the costs of the work to the responsible contractor.

12. Environmental Monitoring Programmes

Transnet and/or a nominated representative shall in terms of the requirements of the project environmental authorisation and associated environmental specialist recommendations as well as relevant legislation, implement various environmental monitoring programmes that shall either commence prior to and / or continue for the duration of the construction phase of the project where required. These monitoring programmes shall amongst others include:

12.1 Dust Monitoring

This monitoring requirement may be delegated to contractors undertaking specific works on site and will form part of the contractor works information. In such instances the contractor will be required to develop and describe the proposed methodology and equipment to be used as part of the environmental method statement for air quality and dust management.

An overall monitoring schedule will be developed by the Transnet Project Environmental Manager and Environmental officer for implementation by appointed Contractors. The Schedule will specify the frequency of monitoring and specific monitoring requirements. As such, the monitoring schedule will be a working document and will be amended and updated where required.

Contractors shall undertake daily visual dust monitoring that will be recorded in a monthly dust monitoring register and accompanied with photo records where required. Visual dust monitoring will include the recording of dust levels (low, medium or high), the source of dust generation, type of dust, direction of moving dust plumes and whether the dust event is localized or widespread.

Contractors may be required to monitor monthly dust fallout in accordance with an approved Standard. Monitoring shall commence with site establishment and prior to any bush clearing activities. The need for ongoing monitoring may be amended based on the monitoring results.

Contractors are required to comply with the requirements for dust management as stipulated in this CEMPr and must report excessive dust incidents to the Transnet Environmental Officer and Construction Manager.

12.2 Storm Water Quality Monitoring

This monitoring requirement may be delegated to contractors undertaking specific works on site and will form part of the contractor works information.

In such instances the contractor will be required to develop and describe the proposed methodology and equipment to be used as part of the environmental method statement for the control and management of storm water during construction. The Contractor must take note of the following when developing the method statement:

- Quality of storm water discharge must be monitored at intervals to be agreed with the Transnet Construction Manager and Environmental Officer, but shall be done as a minimum prior to any discharges off site after rain events;
- Monitoring shall be undertaken by means of grab sampling or any other method agreed with the Transnet Construction Manager and Environmental Officer and analyzed for specific substances and parameters as specified in Table 4 below.
- Monitoring of the quality of the storm water discharge shall be undertaken at specific points at which the storm water leaves the works areas / site camps.
- Sampling sites shall be selected to best identify any impacts of the construction works on the receiving environment.

- The methods for the measurement of specific substances and parameters in storm water must be carried out:
 - By a laboratory that has been accredited under the South African national Accreditation System (SANAS) in terms of the SABS Code 0259 for that method;
 - As approved in writing by the Transnet Construction Manager and Environmental Officer by means of an environmental method statement submission.
- Storm water quality monitoring requirements in terms of this CEMPr have been developed and aligned with the requirements of the National Water Act, 1998 (Act No. 36 of 1998).
- Storm water quality monitoring parameters and allowable limits in terms of this CEMPr are as specified in the table below. The contractor shall ensure that discharges from site camps and works areas do not exceed the limits as specified.
- All monitoring results will be reported to the EMC at the quarterly EMC meetings.

Table 4: Storm water quality monitoring parameters

Substance / Parameter	General Limit
pH	5,5 – 9,5
Chemical Oxygen demand (mg/l)	75
Suspended solids (mg/l)	25
Chlorine as free Chlorine (mg/l)	0,25
Electrical Conductivity (mS/m)	70mS/m to 150mS/m
Soap, Oil or Grease (mg/l)	2,5

Where any of the above general limits are exceeded additional monitoring of specific parameters as specified by the National Water Act may be required.

In addition to the above, Contractors shall be required to:

- Visually inspect all storm water discharges at site camps and works areas during wet weather to identify potential sources of storm water contamination and observe water quality;
- Visually inspect site camps and works areas as a minimum monthly to identify authorized and unauthorized non-storm water discharges;
- Inspect site camps and works areas to evaluate the effectiveness and implementation of storm water pollution prevention practices.

Storm water monitoring programmes during construction may be required to make provision for the establishment of a baseline dataset that will be comparable to that of the Core Development Area of the Coega IDZ, and available relevant datasets of the NMBM where relevant. Where baseline datasets already exist, these shall be made available.

12.3 Noise Monitoring

Noise monitoring shall be conducted during the construction phase of the project to determine if noise emissions are within prescribed limits.

The contractor shall be required to undertake noise monitoring in line with the requirements of this CEMPr. Contractors should take note that noise monitoring requirements may not be relevant

to all scopes of work during construction. Noise shall be monitored using an integrated portable sound level meter complying with relevant standards and specification. The meter shall be calibrated as per the manufacturer's specifications and or legal requirements and the calibration certificate shall be provided to the Transnet Environmental Officer.

Noise levels shall be measured by the contractor at sampling points identified in consultation with the Transnet Construction Manager and Environmental Officer. Noise generated within the general construction footprint (away from sensitive receptors) shall be monitored to ensure compliance with the requirements of the Nelson Mandela Bay Metropolitan Municipality Noise Control Bylaw.

The frequency of monitoring may be decreased or increased at the discretion of the Transnet Construction Manager and Environmental Officer over the construction period, depending on changes in construction methodology and the type of plant and equipment operating on site. Monitoring frequency may only decrease if monitoring data / results show minimal variation in noise levels.

Whenever noise measurements are taken, meteorological data (wind speed and direction, ambient temperature, cloud cover, humidity, barometric pressure) should also be recorded as close to the site as possible.

12.4 Archaeological Monitoring

Transnet shall appoint a suitably qualified Archaeologist to actively monitor the project footprint for the presence of archaeological sites/materials during and after completion of vegetation clearance.

The Archaeologist will be required to report concentrations of archaeological material that may be uncovered (e.g. human remains, and/or accumulations of fossil bone, concentrations of marine shell and stone tools) to the relevant/responsible Authorities and will conduct a systematic and professional investigation of all material uncovered.

A sampling and monitoring permit will be applied for and obtained to remove heritage objects/artefacts from the site where necessary.

12.5 Palaeontological Monitoring

Transnet shall appoint a suitably qualified Palaeontologist to monitor all excavations during construction deeper than 2m for newly exposed fossil material. The Palaeontologist will be required to record and sample fossil material and associated geological data (e.g. sedimentary context), where required and report any concentrations of paleontological material uncovered during construction to the relevant/responsible Authorities.

A sampling, monitoring and collection permit will be applied for and obtained to remove paleontological material from the site where necessary.

12.6 Marine Mammal Monitoring

Contractors operating/undertaking construction work within the Port and in close proximity to the water shall be required to undertake Marine Mammal Monitoring. Monitoring shall be undertaken in accordance with the Port of Ngqura Marine Mammal Monitoring Plan and shall be done daily by means of visual sightings and recording. Monitoring shall include the noting of species (where possible), approximate numbers sighted and date of sighting. A Copy of the Plan shall be made available to contractors where relevant to their specific activities.

13. Evaluation of Compliance

13.1 Compliance Monitoring

All construction activities shall be monitored in terms of the requirements of this CEMPr. Environmental monitoring is required to ensure that the CEMPr and the environmental management requirements contained therein are effectively implemented.

Scheduled environmental monitoring of environmental performance and compliance with the requirements of the project environmental authorisation and the CEMPr is required throughout the construction phase of the Project. Compliance monitoring allows for the overall effectiveness of the environmental controls to be determined and for areas of non-compliance to be identified so corrective actions can be implemented.

Environmental monitoring (in line with the requirements of the Environmental Authorisation) will take place prior to construction to assess the baseline conditions, during construction to assess the impact of the construction on the environment, and after construction to assess the impact of the completed Project. Environmental monitoring is required at various stages of construction for various environmental aspects. The overall monitoring requirements are included in Section 5 of the CEMPr.

13.1.1 Contractor Monitoring Requirements

Contractors are required to submit an Environmental Monitoring Method Statement which details the scope, nature, process, schedule and templates for environmental monitoring.

The monitoring results shall be used to determine the effectiveness of the CEMPr implementation. Monitoring results and the associated required management and mitigation actions for the coming monitoring period are to be presented in the monitoring section of the Contractors Monthly Environmental Report.

The daily and weekly environmental reports must detail observations and information relating to requested management actions and their effectiveness. The Contractor shall monitor and maintain inter alia the following on an on-going basis:

- (Re-)growth of alien invasive vegetation;
- Storm water systems;
- Topsoil and material stockpile volumes;

- Access road condition;
- Dust;
- Noise;
- Water Quality;
- Erosion prevention;
- Rehabilitation requirements;
- Rehabilitation interventions;
- Spoil management.

13.1.2 General Site Monitoring

- Daily: The Contractor and Transnet Environmental Officers will undertake daily inspections of all works areas and activities on site and any issues identified will be noted. These inspections are informal visual inspections in order to check compliance with the CEMPr. Daily inspection checklists can be developed and implemented for this purpose;
- Weekly: Formal site inspections will be undertaken by the Contractor and Transnet Environmental Officers together with the Transnet Project Environmental Manager. Site specific checklists will be developed for this purpose to check compliance with the CEMPr and project environmental authorisation. Issues that present a significant environmental risk will be noted. Weekly compliance monitoring and inspections will be undertaken by the appointed independent Environmental Control Officer (ECO). Findings and observations made by the ECO during these inspections will be communicated on the day of the inspections where required and will be recorded in the ECO monthly report.
- Monthly: The Transnet Environmental Officer will undertake monthly site inspections with the Transnet Project Environmental Manager to confirm that environmental monitoring programmes and environmental control procedures are being implemented in accordance with the CEMPr and project environmental authorisation requirements. These visits can be combined with the monthly contractor environmental compliance audit.

13.2 Site Environmental Inspections and Audits

Environmental inspections and audits are conducted using five basic techniques. These include:

- Interviews with Contractor's staff including Sub-contractors and suppliers;
- Document checks;
- 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.

13.2.1 Workplace Inspections

The Contractor's Environmental Officer will be required to conduct 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 measured in litres (including plant, generators, other equipment, vehicles etc.);
- Electricity consumption for entire contract 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.

13.2.2 Construction Site Audits

The Transnet Environmental Officer will be required to conduct monthly inspections and audits 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 Transnet 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 the Coega River and Sea;
- Provision and use of toilet facilities;
- 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 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);
- Amount of topsoil removed and stockpiled;
- 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 Transnet Environmental Officer prior to site establishment.

13.2.3 Construction Site and Documentation Compliance Audit

The Transnet Environmental Specialist: Assurance will conduct quarterly audits of the entire construction site and documentation system, which may include, but not be limited to the following:

- Site entrance;
- No-go areas;
- Environmentally sensitive areas;
- All work areas;
- Liquid and Solid waste storage facilities;
- All workshops;
- Refuelling depots;
- Contractor's camp area and lay down place;
- Any other place which needs to be audited.

By observation:

- Litter;
- Liquid and Solid waste storage facilities;
- 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;
- Any other illegal activities.

By document check:

- Complaints register is available and up to date;
- Method Statements are filed correctly and up to date;
- All environmental permits are available;
- Copy of the EA is available on site;
- Copies of the CEMP, SES and PES are available on site;
- Copies of all daily, weekly inspections and audits, monthly reports, minutes, incident reports and corrective action reports are filed correctly;
- Copies of all close-out reports are available;
- The monitoring programme is being adhered to and the monitoring results are no more than one month late;
- Chains of custody for samples can be provided on request;
- Sampling protocols are followed;
- Emergency numbers and procedures are clearly displayed;
- Photographic record;
- Records of Environmental Awareness Training of Contractor's staff;

- Any other documentation necessary to ensure effective environmental management of the site.

By verification (if necessary):

- Spot samples to check water quality (e.g. storm water runoff);
- Map/plan measurements to check areas disturbed/re-vegetated;
- Check dust collection buckets are working;
- Check oil separators;
- Any other aspect which gives cause for concern.

By interview:

- Transnet Environmental Officer;
- Contractor's Environmental Officer;
- Contractor's staff at random.

A specific site audit protocol will be formulated prior to the first audit and sent to the Transnet PEM two weeks in advance of the quarterly audit.

13.3 Environmental Audits

Environmental audits will be undertaken to determine compliance with the CEMPr and the project environmental authorisation. These audits will identify how non-compliances can be adequately corrected and will provide feedback on how to improve construction related activities where required. Environmental Audits shall be conducted at regular intervals to verify compliance with the CEMPr.

The following shall be checked as a minimum:

- Compliance with the project environmental authorisation;
- Compliance with the requirements of relevant environmental legislation;
- Compliance with conditions of other relevant permits and licenses;
- Adequacy and effectiveness of monitoring programmes;
- That environmental procedures are implemented and adhered to;
- That environmental training records are up to date and in order;
- That environmental reporting systems are in place;
- That environmental incidents are recorded and corrective actions implemented;
- That environmental targets are being achieved.

Findings of audits and required changes and responses to the findings shall be discussed and the implementation thereof agreed upon at scheduled meetings. All inspection and audit reports shall be documented and recorded. Relevant parties shall be required to respond to and address issues identified through site inspections, monitoring and auditing processes.

13.3.1 Independent Environmental Audit

Bi-annual environmental compliance audits will be undertaken by the appointed independent Environmental Control Officer to verify Transnet's compliance with the conditions of the project environmental authorisation, CEMPr and other relevant environmental legislative requirements. Audit findings will be reported to the Coega Environmental Monitoring Committee and the relevant DFFE Directorate.

13.3.2 Final Environmental Compliance Audit and Reporting

Transnet shall ensure that a final independent environmental compliance audit is undertaken and an environmental audit report submitted to the relevant DFFE Directorate within 30 days of completion of the construction phase of the project and within 30 days of completion of rehabilitation activities. The environmental audit report shall indicate the date of the audit, name of the auditor and the findings of the audit in terms of compliance with the environmental authorization conditions and the CEMPr.

A Final Environmental Compliance Report shall be compiled by the Transnet Environmental Officer for submission to the Transnet Project Manager at the end of the construction phase of the project. The report will include details of:

- The completion of all environmental conditions and mitigation measures listed in the CEMPr;
- All environmental incidents and completed corrective actions;
- The findings of the Environmental Audits;
- Conclusions as to whether environmental constraints, guidelines, norms and stipulations have been met and, if not, reasons why they have not been met;
- An indication of the outcomes of the environmental monitoring conducted;
- All Monthly Environmental Monitoring Reports (as an attachment);
- A copy of all Method Statements (as an attachment);
- A copy of the environmental Incident and NCR Registers; and
- A copy of the Communications Register.

13.4 Environmental Performance Criteria

Contractors must achieve the minimum requirement for environmental audits. The standard/minimum requirement for all environmental audits is 80% and where a compliance score of less than 80% has been achieved, non-conformance reports (NCRs) will be issued to the Contractor.

13.5 Environmental Non-Conformance Reports

Transnet can institute a non-conformance for any non-compliance with the requirements of the CEMPr. The timeframe for mitigating a non-conformance shall be determined by the severity of

the non-conformance. All non-conformances will be recorded in a register and made available for audit purposes. Where non-conformances are not appropriately responded to, Transnet may have the situation remedied by an outside service provider and back charge the cost of the work to the responsible contractor(s).

In the event of a non-conformance being issued, the following recommended process shall be followed:

- Transnet shall issue a notice of non-conformance to the responsible party, stating the nature and magnitude of the non-compliance;
- The responsible party shall be required to correct the non-conformance within the required timeframe or within a period that may be specified within the notice;
- The responsible party shall provide Transnet with a written statement describing the actions that will be implemented to rectify the non-conformance, the actions taken to mitigate its effects and the expected results of the actions.

Transnet shall have the right to stop work and/or certain activities in the case of non-compliance or failure to implement corrective actions, and deal with any non-compliance and/or non-conformance in terms of the applicable mechanisms and legislation. All delays resulting from such suspension of works shall be at the Contractor's expense.

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

- The incident response procedure (including administrative requirements) were not successfully implemented; or
- There are repeated incidents because of inadequate environmental practices on site;
- Documentation required to comply with the CEMPr is not prepared or maintained adequately on site; or
- Any non-compliances with the requirements of the Environmental Authorisation and the CEMPr are identified.

14. Forms and Templates

Applicable Forms and Templates will be developed as part of the Construction Environmental Management System for the Project for implementation by appointed Contractors. These forms and templates will be maintained by the Transnet Document Management Department and will be revised as and when required.

15. Records

All environmental records and documents generated as part of the construction phase of the Project will be managed in accordance with the Transnet Document Management Procedure for the retention of Records.

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:		

Health and Safety Questionnaire

Health, Safety Questionnaire

1. SAFE WORK PERFORMANCE													
1A. Injury Experience / Historical Performance - Alberta													
Use the previous three years injury and illness records to complete the following:													
Year													
Number of medical treatment cases													
Number of restricted work day cases													
Number of lost time injury cases													
Number of fatal injuries													
Total recordable frequency													
Lost time injury frequency													
Number of worker manhours													
<table border="1"> <tr> <td>1 - Medical Treatment Case</td> <td>Any occupational injury or illness requiring treatment provided by a physician or treatment provided under the direction of a physician</td> </tr> <tr> <td>2 - Restricted Work Day Case</td> <td>Any occupational injury or illness that prevents a worker from performing any of his/her craft jurisdiction duties</td> </tr> <tr> <td>3 - Lost Time injury Cases</td> <td>Any occupational injury that prevents the worker from performing any work for at least one day</td> </tr> <tr> <td>4 - Total Recordable Frequency</td> <td>Total number of Medical Treatment, Restricted Work and Lost Time Injury cases multiplied by 200,000 then divided by total manhours</td> </tr> <tr> <td>5- Lost Time Injury Frequency</td> <td>Total number of Lost Time Injury cases multiplied by 200,000 then divide by total manhours</td> </tr> </table>				1 - Medical Treatment Case	Any occupational injury or illness requiring treatment provided by a physician or treatment provided under the direction of a physician	2 - Restricted Work Day Case	Any occupational injury or illness that prevents a worker from performing any of his/her craft jurisdiction duties	3 - Lost Time injury Cases	Any occupational injury that prevents the worker from performing any work for at least one day	4 - Total Recordable Frequency	Total number of Medical Treatment, Restricted Work and Lost Time Injury cases multiplied by 200,000 then divided by total manhours	5- Lost Time Injury Frequency	Total number of Lost Time Injury cases multiplied by 200,000 then divide by total manhours
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5- Lost Time Injury Frequency	Total number of Lost Time Injury cases multiplied by 200,000 then divide by total manhours												
1B. Workers' Compensation Experience													
Use the previous three years injury and illness records to complete the following (if applicable):													
Industry Code:		Industry Classification:											
Year													
Industry Rate													
Contractor Rate													
% Discount or Surcharge													
Is your Workers' Compensation account in good standing? (Please provide letter of confirmation)		<input type="checkbox"/> Yes <input type="checkbox"/> No											
2. CITATIONS													
2A.	Has your company been cited, charged or prosecuted under Health, Safety and/or Environmental Legislation in the last 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide details:												
2B.	Has your company been cited, charged or prosecuted under the above Legislation in another Country, Region or State? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide details:												

3. CERTIFICATE OF RECOGNITION

Does your company have a Certificate of Recognition?

☐ Yes ☐ No If Yes, what is the Certificate No. _____ Issue Date _____

4. SAFETY PROGRAM

Do you have a written safety program manual?

☐ Yes ☐ No

If Yes, provide a copy for review

Do you have a pocket safety booklet for field distribution?

☐ Yes ☐ No

If Yes, provide a copy for review

Does your safety program contain the following elements:

	YES	NO		YES	NO
CORPORATE SAFETY POLICY	<input type="checkbox"/>	<input type="checkbox"/>	EQUIPMENT MAINTENANCE	<input type="checkbox"/>	<input type="checkbox"/>
INCIDENT NOTIFICATION POLICY	<input type="checkbox"/>	<input type="checkbox"/>	EMERGENCY RESPONSE	<input type="checkbox"/>	<input type="checkbox"/>
RECORDKEEPING & STATISTICS	<input type="checkbox"/>	<input type="checkbox"/>	HAZARD ASSESSMENT	<input type="checkbox"/>	<input type="checkbox"/>
REFERENCE TO LEGISLATION	<input type="checkbox"/>	<input type="checkbox"/>	SAFE WORK PRACTICES	<input type="checkbox"/>	<input type="checkbox"/>
GENERAL RULES & REGULATIONS	<input type="checkbox"/>	<input type="checkbox"/>	SAFE WORK PROCEDURES	<input type="checkbox"/>	<input type="checkbox"/>
PROGRESSIVE DISCIPLINE POLICY	<input type="checkbox"/>	<input type="checkbox"/>	WORKPLACE INSPECTIONS	<input type="checkbox"/>	<input type="checkbox"/>
RESPONSIBILITIES	<input type="checkbox"/>	<input type="checkbox"/>	INVESTIGATION PROCESS	<input type="checkbox"/>	<input type="checkbox"/>
PPE STANDARDS	<input type="checkbox"/>	<input type="checkbox"/>	TRAINING POLICY & PROGRAM	<input type="checkbox"/>	<input type="checkbox"/>
ENVIRONMENTAL STANDARDS	<input type="checkbox"/>	<input type="checkbox"/>	COMMUNICATION PROCESSES	<input type="checkbox"/>	<input type="checkbox"/>
MODIFIED WORK PROGRAM	<input type="checkbox"/>	<input type="checkbox"/>			

5. TRAINING PROGRAM

5A. Do you have an orientation program for new hire employees? ☐ Yes ☐ No

If Yes, include a course outline. Does it include any of the following:

	YES	NO		YES	NO
GENERAL RULES & REGULATIONS	<input type="checkbox"/>	<input type="checkbox"/>	CONFINED SPACE ENTRY	<input type="checkbox"/>	<input type="checkbox"/>
EMERGENCY REPORTING	<input type="checkbox"/>	<input type="checkbox"/>	TRENCHING & EXCAVATION	<input type="checkbox"/>	<input type="checkbox"/>
INJURY REPORTING	<input type="checkbox"/>	<input type="checkbox"/>	SIGNS & BARRICADES	<input type="checkbox"/>	<input type="checkbox"/>
LEGISLATION	<input type="checkbox"/>	<input type="checkbox"/>	DANGEROUS HOLES & OPENINGS	<input type="checkbox"/>	<input type="checkbox"/>
RIGHT TO REFUSE WORK	<input type="checkbox"/>	<input type="checkbox"/>	RIGGING & CRANES	<input type="checkbox"/>	<input type="checkbox"/>
PERSONAL PROTECTIVE EQUIPMENT	<input type="checkbox"/>	<input type="checkbox"/>	MOBILE VEHICLES	<input type="checkbox"/>	<input type="checkbox"/>
EMERGENCY PROCEDURES	<input type="checkbox"/>	<input type="checkbox"/>	PREVENTATIVE MAINTENANCE	<input type="checkbox"/>	<input type="checkbox"/>
PROJECT SAFETY COMMITTEE	<input type="checkbox"/>	<input type="checkbox"/>	HAND & POWER TOOLS	<input type="checkbox"/>	<input type="checkbox"/>
HOUSEKEEPING	<input type="checkbox"/>	<input type="checkbox"/>	FIRE PREVENTION & PROTECTION	<input type="checkbox"/>	<input type="checkbox"/>
LADDERS & SCAFFOLDS	<input type="checkbox"/>	<input type="checkbox"/>	ELECTRICAL SAFETY	<input type="checkbox"/>	<input type="checkbox"/>
FALL ARREST STANDARDS	<input type="checkbox"/>	<input type="checkbox"/>	COMPRESSED GAS CYLINDERS	<input type="checkbox"/>	<input type="checkbox"/>
AERIAL WORK PLATFORMS	<input type="checkbox"/>	<input type="checkbox"/>	WEATHER EXTREMES	<input type="checkbox"/>	<input type="checkbox"/>

5B. Do you have a program for training newly hired or promoted supervisors? ☐ Yes ☐ No

(If Yes, submit an outline for evaluation. Does it include instruction on the following:

	Yes	No		Yes	No
EMPLOYER RESPONSIBILITIES	<input type="checkbox"/>	<input type="checkbox"/>	SAFETY COMMUNICATION	<input type="checkbox"/>	<input type="checkbox"/>
EMPLOYEE RESPONSIBILITIES	<input type="checkbox"/>	<input type="checkbox"/>	FIRST AID/MEDICAL PROCEDURES	<input type="checkbox"/>	<input type="checkbox"/>
DUE DILIGENCE	<input type="checkbox"/>	<input type="checkbox"/>	NEW WORKER TRAINING	<input type="checkbox"/>	<input type="checkbox"/>
SAFETY LEADERSHIP	<input type="checkbox"/>	<input type="checkbox"/>	ENVIRONMENTAL REQUIREMENTS	<input type="checkbox"/>	<input type="checkbox"/>
WORK REFUSALS	<input type="checkbox"/>	<input type="checkbox"/>	HAZARD ASSESSMENT	<input type="checkbox"/>	<input type="checkbox"/>
INSPECTION PROCESSES	<input type="checkbox"/>	<input type="checkbox"/>	PRE-JOB SAFETY INSTRUCTION	<input type="checkbox"/>	<input type="checkbox"/>
EMERGENCY PROCEDURES	<input type="checkbox"/>	<input type="checkbox"/>	DRUG & ALCOHOL POLICY	<input type="checkbox"/>	<input type="checkbox"/>
INCIDENT INVESTIGATION	<input type="checkbox"/>	<input type="checkbox"/>	PROGRESSIVE DISCIPLINARY POLICY	<input type="checkbox"/>	<input type="checkbox"/>
SAFE WORK PROCEDURES	<input type="checkbox"/>	<input type="checkbox"/>	SAFE WORK PRACTICES	<input type="checkbox"/>	<input type="checkbox"/>
SAFETY MEETINGS	<input type="checkbox"/>	<input type="checkbox"/>	NOTIFICATION REQUIREMENTS	<input type="checkbox"/>	<input type="checkbox"/>

6. SAFETY ACTIVITIES

Do you conduct safety inspections?

Yes ☐ No ☐ Weekly ☐ Monthly ☐ Quarterly ☐

Describe your safety inspection process (include participation, documentation requirements, follow-up, report distribution).

Who follows up on inspection action items? _____

Do you hold site safety meetings for field employees? If Yes, how often?

Yes ☐ No ☐ Daily ☐ Weekly ☐ Biweekly ☐

Do you hold site meetings where safety is addressed with management and field supervisors?

Yes ☐ No ☐ Weekly ☐ Biweekly ☐ Monthly ☐

Is pre-job safety instruction provided before to each new task? ☐ Yes ☐ No

Is the process documented? ☐ Yes ☐ No

Who leads the discussion? _____

Do you have a hazard assessment process? ☐ Yes ☐ No

- Are hazard assessments documented? If yes, how are hazard assessments communicated and implemented on each project? Who is responsible for leading the hazard assessment process?

Does your company have policies and procedures for environmental protection, spill clean-up, reporting, waste disposal, and recycling as part of the Health & Safety Program?

☐ Yes ☐ No

How does your company measure its H&S success?

- Attach separate sheet to explain

7. SAFETY STEWARDSHIP

7A Are incident reports and report summaries sent to the following and how often?

	Yes	No	Monthly	Quarterly	Annually
Project/Site Manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Managing Director	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety Director/Manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
/Chief Executive Officer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7B How are incident records and summaries kept? How often are they reported internally?

	Yes	No	Monthly	Quarterly	Annually
Incidents totaled for the entire company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incidents totaled by project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Subtotaled by superintendent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Subtotaled by foreman	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7C How are the costs of individual incidents kept? How often are they reported internally?

	Yes	No	Monthly	Quarterly	Annually
Costs totaled for the entire company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Costs totaled by project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Subtotaled by superintendent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Subtotaled by foreman/general foreman	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7D Does your company track non-injury incidents?

	Yes	No	Monthly	Quarterly	Annually
Near Miss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Property Damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8 PERSONNEL

List key health and safety officers planned for this project. Attach resume.

Name	Position/Title	Designation

Supply name, address and phone number of your company's corporate health and safety representative. Does this individual have responsibilities other than health, safety and environment?

Name	Address	Telephone Number

Other responsibilities:

9 REFERENCES

List the last three company's your form has worked for that could verify the quality and management commitment to your occupational Health & Safety program

Name and Company	Address	Phone Number

Transnet Health and Safety Management

Health and Safety Specification:

Additional Parking to the eMendi Building, Port of Ngqura

Project Number: XHO.E.006

Prepared by: S. Ahmed 02/08/2022
 Sharifa Ahmed
 Health & Safety Manager
 Date

Reviewed by: [Signature] 02.08.2022
 Sindiswa Tunzi
 Project Manager
 Date

Approved by: [Signature] 2 August 2022
 Thembakazi Ngxapani
 Port Engineer
 Date

00	01/08/2022	Issued for Review
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1. Project Description

Transnet National Port Authority's Head Office have recently relocated the Parktown, Johannesburg and Kingsmead, Durban offices to the eMendi Building at the Port of Ngqura. The eMendi building was commissioned in April 2017, however there was some outstanding scope that could not be done due to budget constraints. Parking bays were amongst the outstanding scope. The optimum occupation capacity of the building has been estimated at 371 occupants.

There has been limited parking bays since the relocation of the Head Office employees and the need for additional parking bays has become necessary. Currently the eMendi building has 135 parking bays including the basement parking.

Therefore approximately 215 additional parking bays are required.

2. Scope and Purpose

This health and safety specification outlines the working behaviours and safe work practices that must be implemented and complied with by all Transnet employees, Contractors, Consultants, Visitors and Suppliers, that will be undertaking activities associated with the eMendi Additional Parking Project at the Port of Ngqura. The specification has been developed in accordance with the requirements of the Construction Regulation of 2014, Regulation 5(1)(b) as well as any other applicable legislation.

This Health and Safety Specification will be reviewed and updated periodically as and when necessary to address and / or include:

- Changes in legislation;
- Client requirements;
- Leading practices; and
- Lessons learnt from incidents.

Appointed contractors must identify all requirements applicable to their scope of works and address these accordingly in their Contractor's Site Specific Health and Safety Management Plan. It is the contractor's responsibility to ensure that all sub-contractors comply fully with all legal requirements as well as the requirements of this Specification.

The scope for the civils work is as follows:

- Topographical studies
- Geotechnical Investigations
- Site clearance
- Removal/ demolition of the concrete kerbs
- Earthworks
- Construction of stormwater drainage system
- Relocate or reroute the existing services to suit the new layout
- Installation of concrete kerbs
- Surfacing (asphalt)
- Road/parking markings and signage
- Landscaping
- Refurbish the existing building structure next to the recreational area to include a unisex toilet.

The scope for electrical works is as follows:

- Power and lighting of the parking area

3. Definitions

Acceptable Risk

A risk that has been reduced to a level that can be tolerated having regard for the applicable legal requirements and the Health and Safety Policy adopted for the project.

ALARP (As Low As Reasonably Practicable)

The concept of weighing a risk against the sacrifice needed to implement the measures necessary to avoid the risk. With respect to health and safety, it is assumed that the measures should be implemented unless it can be shown that the sacrifice is grossly disproportionate to the benefit.

Applicant (Permit to Work)

A person requesting permission to perform work for which a Permit to Work is required. Applicants must be authorised (in writing) to receive (or accept) Permits to Work and must be competent to do so by virtue of their training, experience and knowledge of the area or plant in which the work is to be performed.

Authorised Person (Permit to Work)

A person (typically a Project employee or an employee of the client) who has been authorised (in writing) by the nominated project management representative to issue Permits to Work within the scope of his designation. A person may only be appointed to issue Permits to Work if he has undergone training and has been assessed and found competent in systems, plant and equipment operation within the scope of his designation.

Barricade

A temporary structure that is erected as a physical barrier to prevent persons from inadvertently coming into contact with an identified hazard.

Battering

Sloping the sides of an excavation to a predetermined angle (usually less than the natural angle of repose) to ensure stability.

Benching

The creation of a series of steps in the sides of an excavation to prevent collapse.

Consequence

The outcome of an event expressed qualitatively or quantitatively.

Contractor

An employer performing construction work, or providing related or supporting services, on a project site.

Competent Person

A person who has in respect of the work or task to be performed the required knowledge, training, experience and as per OSHAct, 1993 (Act 85 of 1993) and CR 2014.

Construction Supervisor

A competent person responsible for supervising construction activities on a construction site

Clearance Certificate

A signed declaration by an Isolation Officer that a specified hazardous energy source associated with a particular system, plant or item of equipment has been isolated in accordance with an approved Isolation and Lockout Procedure.

Discipline Lock (many locks with a restricted number of identical keys)

Attached at a Lockout Station or at a Local Isolation Point in order to lock out a system, plant or equipment. A Discipline Lock (e.g. A Low Voltage Electricity Discipline Lock) is owned by an Isolation Officer who has been authorised in writing to isolate and lockout a particular hazard (e.g. Low voltage electricity).

EPCM Consultant

An Engineering, Procurement, and Construction Management Contractor appointed by TRANSNET in order to involve an experienced associate in large projects to manage the entire, or parts of the, project on behalf of TRANSNET. This role will be performed by TRANSNET on this project.

Equipment Lock (many locks with one unique key)

Attached directly to pieces of equipment in order to lock them out. Equipment Locks may only be used by Isolation Officers who have been authorised in writing to perform isolation and lockout procedures. The key must have a solid key ring that fits over an Isolation Bar.

Excavation

Any man-made cut, cavity, pit, trench, or depression in the earth's surface formed by removing rock, sand, soil or other material using tools, machinery, and / or explosives. Tunnels, caissons and cofferdams are specifically excluded and are not addressed in this standard.

First-Aid Injury (FA)

A first-aid injury is any one time treatment and any follow up visit for observation of minor scratches, cuts, burns, splinters and the like which do not normally require medical care. Such treatment is considered to be first aid even if administered or supervised by a medical practitioner.

First aid includes any hands on treatment given by a first aider. (E.g. Band-Aid, washing, cleansing, pain, relief). The following procedures are generally considered first aid treatment:

- Application of Antiseptics.

- Application of Butterfly adhesive dressing or sterile strips for cuts and lacerations.
- Administration of tetanus shot(s) or booster(s). However, these shots are often given in conjunction with more serious injuries, consequently injuries requiring these shots may be recordable for other reasons.
- Application of bandages during any visit to medical personnel.
- Application of ointments to abrasions to prevent drying or cracking.
- Inhalation of toxic or corrosive gas, limited to the removal of the employee to fresh air or the one time administration of oxygen for several minutes.
- Negative X-Ray diagnosis.
- Removal of foreign bodies not embedded in the eye if only irrigation is required.
- Removal of foreign bodies from a wound if procedure is uncomplicated, for example by tweezers or other simple technique.
- Treatment for first degree burns.
- Use of non-prescription medications and administration of single dose of prescription medication on first visit for any minor injury or discomfort.

Hazard

A source of potential harm in terms of human injury or ill health, or a combination of these.

Hierarchy of Controls

A sequence of control measures, arranged in order of decreasing effectiveness, used to eliminate or minimise exposure to workplace health and safety hazards:

- Elimination – Completely removing a hazard or risk scenario from the workplace.
- Substitution – Replacing an activity, process or substance with a less hazardous alternative.
- Isolation (Engineering) Controls – Isolating a hazard from persons through the provision of mechanical aids, barriers, machine guarding, interlocks, extraction, ventilation or insulation.
- Administrative Controls – Establishing appropriate policies, procedures and work practices to reduce the exposure of persons to a hazard. This may include the provision of specific training and supervision.
- Personal Protective Equipment – Providing suitable and properly maintained PPE to cover and protect persons from a hazard (i.e. Prevent contact with the hazard).

Isolation and Lockout Procedure

A plant or equipment-specific procedure that describes the method, and sequence to be followed, for rendering equipment, plant and systems safe to work on.

Isolation Bar

A device used at a Lockout Station to which anyone is able to attach a Personal Lock making it impossible for an Isolation Officer to remove the key to the Equipment Locks, thus preventing the de-isolation of a system, plant or equipment while it is still being worked on. A Discipline Lock must always be the first lock attached to an Isolation Bar and last to be removed.

Isolation Officer

A person (typically a Project employee or an employee of the client) who has been authorised (in writing) by the nominated project management representative to perform isolation and lockout procedures. A person may only be appointed as an Isolation Officer if he has undergone training and has been assessed and found competent in the isolation and lockout of systems, plant and equipment within the scope of his designation.

Incident

An event (or a continuous or repetitive series of events) that results or has the potential to result in a negative impact on people (employees, contractors and visitors), the environment, operational integrity, assets, community, process, product, legal liability and / or reputation.

Likelihood

A description of probability or frequency, in relation to the chance that an event will occur.

Lost Time Injury (LTI)

Any occurrence that resulted in a permanent disability or time lost from work of one day/shift or more.

If an employee is injured and cannot return to work in the next shift (will ordinarily miss one whole shift), and the department brings the employee in to only receive treatment by the Supervisor/ Return to Work Coordinator in that shift, this is still considered an LTI.

Lost Time Injury Frequency Rate (LTIFR) - Number of LTI's multiplied by 1 million or 200,000 and divided by labour hours worked.

Light Vehicle

A vehicle that:

- Can be licensed and registered for use on a public road;
- Has four or more wheels, and seats a maximum of 12 adults (including the driver);
- Requires the driver to hold only a standard civil driving licence; and
- Does not exceed 4.5 tonnes gross vehicle mass (GVM), which is the maximum loaded mass of the motor vehicle as specified by:
 - ♦ The vehicle's manufacturer; or
 - ♦ An approved and accredited automotive engineer, if the vehicle has been modified to the extent that the manufacturer's specification is no longer appropriate.

Examples of light vehicles include passenger cars, four-wheel drive vehicles, sports utility vehicles (suvs), pick-ups, minibuses, and light trucks.

Any vehicle falling outside of this definition must be considered mobile equipment.

Medical Treatment Injury (MTI)

A work injury requiring treatment by a Medical Practitioner and which is beyond the scope of normal first aid including initial treatment given for more serious injuries. The procedure is to be of an invasive nature (e.g. Stitches, removal of foreign body).

The following procedures are generally considered medical treatment:

- Application of sutures (stitches).
- Cutting away dead skin (surgical debridement).
- Loss of consciousness due to an injury or exposure in the work environment.
- Positive X-Ray diagnosis (fractures, broken bones etc.).
- Removal of foreign bodies embedded in the eye.
- Removal of foreign bodies from the wound by a physician due to the depth of embedment, size or shape of object or the location wound.
- Reaction to a preventative shot administered because of an occupational injury.
- Sprains and strains - series (more than one) of hot and cold soaks, use of whirlpools, diathermy treatment or other professional treatment.

- Treatment of infection.
- Treatment for second or third degree burns
- Use of prescription medications (except a single dose administered on first visit for minor injury or discomfort.)

Mobile Equipment

A vehicle (wheeled or tracked) that generally requires:

- The driver to hold a specific state or civil license; or
- The operator to hold a nationally recognized certificate of competency.

Examples of mobile equipment include, but are not limited to, dump trucks, water trucks, graders, dozers, loaders, excavators, forklifts, tractors, back-actors, bobcats, mobile cranes, tele-handlers, drill rigs, buses and road-going trucks.

Near-Miss

An incident that has occurred that did not result in any injuries, illnesses, environmental or property damage but had the potential to cause an injury, illness, environmental or property damage.

Personal Lock

A single lock with one unique key controlled by the owner. Used for personal protection.

Regulation

In the context of this guideline, 'Regulation(s)' refers to the Construction Regulations, 2014 required by Section 43 of the Occupational Health and Safety Act 85 of 1993, published under Government Notice R 84 in Government Gazette 37305 of February 2014.

Risk

A combination of the likelihood of an occurrence of a hazardous event or exposure and the severity of injury or ill health that can be caused by the event or exposure.

Risk Assessment

A process of evaluating the risk arising from a hazard, taking into account the adequacy of any existing control measures, and deciding on whether or not the risk is acceptable.

Risk Management

The systematic application of management policies, processes and procedures to identifying hazards, analysing and evaluating the associated risks, determining whether the risks are acceptable, and controlling and monitoring the risks on an ongoing basis.

4. Abbreviations

DSTI - Daily Safety Task Instruction

CR – Construction Regulations

HIRA - Hazard Identification and Risk Assessment

IMS - Integrated Management System

MS - Management System

OHS Act - Occupational Health and Safety Act

SOC - Safety Observation and Conversation

VFL - Visible Felt Leadership

OHS - Occupational Health and Safety

SACPCMP - The South African Council for Project and Construction Management Professions, here in refer to as the registrar of Health and Safety Professionals

5. Contractor Health and Safety Management Plan

The contractor must prepare, implement and maintain a project-specific Health and Safety Management Plan. The plan must be aligned with the requirements set out in this specification as well as all relevant/applicable legislation. It must cover all activities that will be undertaken as part of the Project from mobilisation and set-up to rehabilitation and decommissioning.

The plan must demonstrate the contractor's commitment to health and safety and must, as a minimum, include the following:

- A copy of the contractor's **Health and Safety Policy**; in terms of the OHS Act section 7
- Procedures concerning **Hazard Identification and Risk Assessment**, including both Baseline and Task-Based Risk Assessments;
- Arrangements concerning the identification of applicable **Legal and Other Requirements**, measures to ensure compliance with these requirements, and measures to ensure that this information is accessible to relevant personnel;

- Details concerning **Health and Safety Objectives** – a process must be in place for setting objectives (and developing associated action plans) to drive continual improvement;
- Details concerning **Resources, Accountabilities and Responsibilities** – this includes the assignment of specific health and safety responsibilities to individuals in accordance with legal or project requirements, including the appointment of a Project Manager, Health and Safety Officers, Supervisors, Health and Safety Representatives, and First Aiders;
- Details concerning **Competence, Training and Awareness** – a system must be in place to ensure that each employee is suitably trained and competent, and procedures must be in place for identifying training needs and providing the necessary training;
- **Communication, Participation and Consultation** arrangements concerning health and safety, including Safety Observations and Coaching, Toolbox Talks, Daily Safe Task Instructions, project health and safety meetings, and notice boards;
- **Documentation and Document Control** – project-specific documentation required for the effective management of health and safety on the project must be developed and maintained, and processes must be in place for the control of these documents;
- Processes and procedures for maintaining **Operational Control**, including rules and requirements (typically contained in Safe Work Procedures) for effectively managing health and safety risks, particularly critical risks associated with working at heights, confined spaces, mobile equipment and light vehicles, lifting operations, hazardous chemical substances, etc.;
- **Emergency Preparedness and Response** procedures;
- **Management of Change** – a process must be in place to ensure that health and safety risks are considered before changes are implemented;
- **Sub-contractor Alignment** procedures – a process must be in place for the assessment of sub-contractors and suppliers with regard to health and safety requirements and performance (before any contract or purchase order is awarded);
- **Measuring and Monitoring** plans, including a plan for the measuring and monitoring of employee exposure to hazardous substances or agents (e.g. Noise, dust, etc.) In order to determine the effectiveness of control measures;

- **Incident Reporting and Investigation** procedures describing the protocols to be followed with regard to incident reporting, recording, investigation and analysis;
- **Non-conformance and Action Management** procedures concerning the management of corrective actions;
- **Performance Assessment and Auditing** procedures concerning health and safety performance reporting, monthly internal audits to assess compliance with the project health and safety requirements, and daily site health and safety inspections; and
- Details concerning the **Management Review** process followed to assess the effectiveness of health and safety management efforts.

Prior to mobilisation, the Health and Safety Management Plan must be forwarded electronically, and as a hard copy, to the nominated TRANSNET project management representative for review. The plan will be audited for completeness and, if found to be adequate, will be accepted (typically “with comments”). Work may not commence until the plan has been accepted.

Once the plan has been accepted, the contractor must action and resolve any issues within 30 days from the start of work.

If the issues requiring corrective action are not resolved within this 30 day period, the contractor will be required to stop any work related to the outstanding actions until they have been resolved.

Any proposed amendments or revisions to the contractor’s Health and Safety Management Plan must be submitted to the nominated project management representative for acceptance.

Should it be identified that the contractor has overlooked a high risk activity, and as a result has omitted the activity and associated control measures from the Health and Safety Management Plan, the plan will not be approved.

6. Policy

The contractor must develop, display and communicate a Health and Safety Policy that clearly states the contractor’s values and objectives for the effective management of health and safety as required by OHS Act of 1993, 7(3). These values and objectives must be endorsed by the contractor’s management representatives and must be consistent with those adopted for the project.

The policy must be signed and dated, and must be reviewed annually.

The policy must commit to:

- Compliance with all applicable legal requirements in the Transnet regulatory universe;
- The effective management of health and safety risks;
- The establishment of measurable objectives for improving performance, and the provision of the necessary resources to meet these objectives;
- The prevention of incidents; and
- Achieving continual improvement with regard to health and safety performance.

All employees of the contractor as well as the employees of any sub-contractors that may be appointed by the contractor must be made aware of the policy. This must be done through Health and Safety Induction Training and Toolbox Talks (refer to Sections 10 and 11).

A copy of the policy must be displayed in each meeting room and on each notice board.

7. Hazard Identification and Risk Assessment (OHS Act, Constr. Regulations 9)

Detailed hazard identification and risk assessment processes must be followed for all work to be performed as well as for all associated equipment and facilities as required by the Construction Regulation of 2014, Regulation 9(1) – (7).

The Client will provide a baseline risk assessment informing the contractor on the hazards and risks on site. The Contractor must ensure that effective procedures and risk assessment systems are in place to control hazards and to mitigate risks to levels that are as low as is reasonably practicable.

The risk assessment processes must be applied to:

- The full life cycle of the project;
- Routine and non-routine activities;
- Planned or unplanned changes;
- All employees, sub-contractors, suppliers and visitors; and
- All infrastructure, equipment and materials.

The risk assessment processes and methodologies must be appropriate for the nature and scale of the risks, and must be implemented by competent persons.

The process of analysing and managing risk must include the following:

- Establishing the context of the risk assessment;
- Identifying hazards and determining possible risk scenarios (unwanted events);
- Evaluating risks and assigning ratings (classification);
- Recording the risk analysis in a risk register;
- Managing risks according to their classification (prioritising for action);
- Identifying and implementing control measures (through the application of the Hierarchy of Controls) to ensure that risks are managed to levels that are as low as is reasonably practicable (ALARP);
- Developing action plans for reducing risk levels (where possible);
- Verifying the completion of actions;
- Re-evaluating the risks and classifications as appropriate; and
- Reviewing and updating the risk register.

7.1 Baseline Risk Assessments

Prior to site establishment, TRANSNET (the Client) will conduct a detailed Baseline Risk Assessment identifying foreseeable hazards and risk scenarios associated with the contractor's scope of work on the project site(s) as required by Construction Regulations of 2014, regulation 5(1)(a). Details concerning proposed control measures must be included. The risk assessment process must be facilitated by a competent person who has been appointed in writing and must involve the participation of the contractor's site management representatives, supervisory personnel and technical experts. An attendance register must be completed and retained for reference purpose. The Baseline Risk Assessment must be reviewed and approved by the Project Health and Safety Manager and Project Construction Manager.

When carrying out a Baseline Risk Assessment or a Task-Based Risk Assessment (refer to Section 7.2), Hazard (Energy) Types must be specified in accordance with the categorisation detailed in Table 7-1. Risk scenarios must be described indicating the manner in which a person may come into contact with, or be exposed to, a specific hazard.

An initial risk rating must be assigned to each risk scenario without taking any control measures into consideration. Control measures for managing the risks to levels that are as low as is reasonably practicable must then be identified for implementation on the

project, and a residual risk rating must be assigned to each risk scenario taking the identified control measures into consideration.

Ratings must be assigned qualitatively using TRANSNET consequence and likelihood scales and descriptors (i.e. TRANSNET 5x5 qualitative risk matrix). Refer to Tables 7-2, 7-3 and 7-4.

Table 7-1: Hazard (Energy) Types

Gravitational							
Falling or Rolling Object	Person Falling from Height	Slip, Trip or Fall (Same Level)	Collapsing Structure	Collapsing, Slumping or Flowing Material or Substance			
Mechanical							
Moving Component of Fixed Machinery	Moving Component of Powered Tool	Projectile	Moving Hand Tool	Sharp Object	Moving Mobile Equipment or Light Vehicle	Moving Person	Moving Object (Mechanically or Manually)
Elastic							
Object under Tension or Compression				Compressed Fluid (Gas or Liquid)			
Acoustic							
Noise							
Vibrational							
Hand / Arm Vibration				Whole Body Vibration			
Electrical							
Electricity				Electro-Magnetic Field			
Radiation							
Ionising Radiation				Non-Ionising Radiation			
Illumination							
Lighting							
Thermal							
Heat				Cold			

Fire																	
Fire																	
Explosion																	
Explosion																	
Particulates and Aerosols																	
Dust		Fibres		Fume		Spray		Mist		Smoke							
Chemical																	
Corrosive Substance		Irritant		Asphyxiate		Narcotic / Anaesthetic		Poison		Allergen / Sensitizer		Carcinogen		Teratogen / Mutagen		Venom	
Microbiological																	
Virus				Bacterium				Parasite				Fungus					
Weather																	
Lightning				High Wind				Flooding				Hail					
Physiological																	
Stress								Fatigue									
Ergonomic																	
Exertion				Repetitive Movement				Awkward Posture				Awkward Movement					

Table 7-2: Consequence Descriptors

Consequ ence	Insignificant	Minor	Moderate	Major	Catastroph ic
Health	Reversible health effects of little concern, requiring first aid treatment at most.	Reversible health effects of concern that would typically result in	Reversible health effects of concern that would typically result in a	Single fatality, or irreversible health effects or disabling illness.	Multiple fatalities or permanent disabling illness to multiple people.

Consequence	Insignificant	Minor	Moderate	Major	Catastrophic
		medical treatment.	lost time illness.		
Safety	Low-level, short-term subjective inconvenience or symptoms. Typically a first aid case requiring no medical treatment.	Reversible injury requiring treatment, but not leading to restricted duties. Typically a medical treatment case.	Reversible injury or moderate irreversible damage or impairment. Typically a lost time injury.	Single fatality, or considerable irreversible damage or impairment.	Multiple fatalities or permanent disabling injury to multiple people.

Table 7-3: Likelihood Descriptors

Likelihood	Likelihood Description	Frequency	Substance Exposure
Almost Certain	Recurring event during the life-time of the project.	Typically occurs more than twice per year.	Frequent (daily) exposure at $> 10 \times$ OEL.
Likely	Event that may occur frequently during the life-time of the project.	Typically occurs once or twice per year.	Frequent (daily) exposure at $> \text{OEL}$.
Possible	Event that may occur during the life-time of the project.	Typically occurs once in 5 years.	Frequent (daily) exposure at $> 50\%$ of OEL. Infrequent exposure at $> \text{OEL}$.

Likelihood	Likelihood Description	Frequency	Substance Exposure
Unlikely	Event that is unlikely to occur during the life-time of the project.	Typically occurs once in 10 years.	Frequent (daily) exposure at > 10% of OEL. Infrequent exposure at > 50% of OEL.
Conceivable but improbable	Event that is very unlikely to occur during the life-time of the project.	Typically occurs once in 100 years.	Frequent (daily) exposure at < 10% of OEL. Infrequent exposure at > 10% of OEL.

Table 7-4: Risk Matrix

Risk Calculator		Consequence				
		Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood		1	2	3	4	5
Almost Certain	5	Moderate (5)	High (10)	High (15)	Extreme (20)	Extreme (25)
Likely	4	Low (4)	Moderate (8)	High (12)	Extreme (16)	Extreme (20)
Possible	3	Low (3)	Moderate (6)	Moderate (9)	High (12)	High (15)
Unlikely	2	Low (2)	Low (4)	Moderate (6)	Moderate (8)	High (10)
Conceivable but improbable	1	Low (1)	Low (2)	Low (3)	Low (4)	Moderate (5)

A Risk Register comprised of all significant risks (i.e. Risks rated as major or catastrophic) identified for the project will be compiled using the information contained in the project Baseline Risk Assessment as well as the contractor's Baseline Risk Assessment. Key control measures for managing each of these risks will be specified in the register.

For the significant risks in particular, action plans will be developed for reducing the risk levels (where possible).

The project Risk Register will be reviewed and, if necessary, updated:

- On a quarterly basis during construction;
- When changes are made to a design and / or the construction scope, schedule, methods, etc. That result in a change to the risk profile; and
- Following an incident.

The contractor must ensure that the hazards, risk scenarios and control measures identified in the contractor's Baseline and Task-Based Risk Assessments are taken into consideration when developing, implementing and maintaining the various elements of the contractor's health and safety management system for the project (e.g. Competence, training and awareness requirements).

All persons potentially affected must be made aware of the hazards, risk scenarios and control measures identified in the contractor's risk assessments. This must be done through training, Toolbox Talks, and Daily Safe Task Instructions.

7.2 Task-Based Risk Assessments

The contractor must carry out detailed project-specific Task-Based Risk Assessments which must be reviewed and approved by the Client's Project Health and Safety Practitioner and Project Construction Manager prior to the commencement of any work.

The risk assessment process must be facilitated by a competent person who has been appointed in writing in terms CR 9 sub regulation (1). The contractor's site management representatives, supervisory personnel, technical experts (as required) and workforce personnel directly involved with the task being examined must participate in the risk assessment process. An attendance register must be completed and retained.

Please Note: Under no circumstances may a Contractor Health and Safety Officer perform a risk assessment in isolation. The active participation of all persons referred to above is mandatory.

A Task-Based Risk Assessment must at least:

- Be accompanied by a Work Method Statement (describing in sufficient detail how the specific job or task is to be performed in a logical and sequential manner);
- Provide a breakdown of the job or task into specific steps;
- Identify the hazards and potential risk scenarios associated with each step;
- Include consideration of possible exposure to noise, heat, dust, fumes, vapours, gases, chemicals, radiation, vibration, ergonomic stressors, or any other occupational health hazard or stressor;
- Describe the control measures that will be implemented to ensure that the risks are managed to levels that are as low as is reasonably practicable; and
- Assign an initial risk rating (without taking any control measures into consideration) and a residual risk rating (taking the identified control measures into consideration) to each risk scenario.

A Task-Based Risk Assessment must be reviewed and, if necessary, updated:

- On an annual basis (as a minimum);
- When changes are made to the associated Work Method Statement; and
- Following an incident.

7.3 Pre-Task Hazard Assessments

A pre-task hazard assessment must be completed whenever a change is identified while carrying out an activity. Any deviation from what was discussed during the Daily Safe Task Instruction (prior to the activity commencing), or anything that was not discussed, constitutes a change.

Before carrying out the particular task that involves the identified change, a few minutes must be spent identifying the hazards and risks associated with that task as well as suitable control measures.

8. Legal and Other Requirements

The Contractor must comply with the requirements of all applicable health and safety legislation as well as TRANSNET project-specific standards and procedures as amended from time to time.

The Contractor must compile and maintain a register of all legal and other requirements applicable to the work that will be carried out and / or services that will be provided. This register must be updated regularly to ensure that it remains relevant.

Applicable laws and standards must be appropriately communicated to all employees of the contractor (as well as the employees of any sub-contractors that may be appointed by the contractor) through training, Toolbox Talks, and Daily Safe Task Instructions.

9. Health and Safety Objectives

In order to drive continual improvement, the contractor must set project-specific health and safety objectives, and must develop improvement action plans to achieve these objectives. The contractor's objectives must be aligned with the objectives set for the project as a whole as required by the Construction Regulations of 2014.

Eliminating health and safety hazards, minimising health and safety risks, preventing incidents, injuries and illnesses, and ensuring legal compliance must be the primary considerations for setting objectives.

When setting objectives, consideration must be given to the following:

- Leading indicators such as inspection findings, audit findings, hazard reporting, and observations;
- Lagging indicators (i.e. Incidents including Near Hits);
- Leading practices and lessons learnt; and
- Injury frequency rates with due understanding that the goal is "no harm".

The objectives must be specific and measurable. The improvement action plans must specify the resources (both human and financial) required to achieve the objectives, the person's responsible, and realistic timeframes for completion. The contractor must ensure that adequate resources are allocated and that progress towards meeting the objectives is monitored regularly.

The objectives and associated improvement action plans must be documented and must be communicated to all contractor employees. Furthermore, to ensure that the objectives remain relevant, they must be reviewed on a quarterly basis and whenever significant change has taken place on the project (i.e. Changes to activities, scope of work, operating conditions, etc.).

10. Resources, Accountabilities and Responsibilities

The Contractor must adequately allocate resources, responsibility and accountability to ensure the effective implementation, maintenance and continual improvement of the contractor's health and safety management system on the projects required by Construction Regulation Of 2014, regulation 7(2)(c).

For each role that carries health and safety accountability and / or responsibilities (including legislative requirements), a role description detailing the accountability and / or responsibilities must be documented.

All health and safety appointments (i.e. the assignment of specific health and safety responsibilities to individuals in accordance with legal or project requirements) must be done in writing. Documented proof of each appointment (i.e. a signed appointment letter) must be retained.

Contractor should not discharge any legal responsibilities to employees who are not legally appointed.

The contractor must comply with the requirements of all applicable legislation concerning health and safety related appointments and delegations for the project.

A health and safety organisational chart specific to the project must be documented and maintained. All roles that carry health and safety accountability and / or responsibilities must be included, and all individuals that carry health and safety appointments must be clearly identified.

The provision of dedicated health and safety professionals on the project must be appropriate for the nature and scale of the work to be carried out.

The contractor is solely responsible for carrying out the work under the contract whilst having the highest regard for the health and safety of all persons on the project site(s).

Health and safety is the responsibility of each and every individual on the project site(s), but in particular, it is the responsibility of the contractor's management team who must set the tone.

Visible commitment is essential to providing and maintaining a safe workplace. The contractor's managers and supervisors at all levels must demonstrate their commitment and support by adopting a risk management approach to all health and safety issues. These individuals must consistently take immediate and firm action to address violations

of health and safety rules, and must actively participate in day to day activities with the objective of preventing harm.

The contractor's management representatives are responsible and accountable for health and safety performance on the project. Key responsibilities include the following:

- Preparing, implementing and maintaining a risk-based Health and Safety Management Plan specific to the work that will be carried out;
- Establishing, implementing and maintaining health and safety programmes and procedures to ensure that all work is carried out in compliance with the requirements of this specification, the contract, and all applicable legislation;
- Establishing, implementing and maintaining effective hazard identification and risk management processes and procedures to ensure that all reasonably foreseeable hazards are controlled in order to minimise risk;
- Providing the resources necessary to meet the requirements of this specification;
- Ensuring that all contractor employees have clearly defined responsibilities with regard to health and safety, and that these responsibilities are clearly communicated and understood;
- Establishing, implementing and maintaining a system for on-going training and assessment of skills and competence;
- Establishing, implementing and maintaining procedures to ensure that only qualified and competent personnel are permitted to work on the project site(s);
- Establishing, implementing and maintaining effective communication and consultative processes concerning health and safety for the duration of the contract;
- Maintaining operational control for the protection of all persons on the project site(s) as well as the public;
- Establishing, implementing and maintaining effective emergency preparedness and response procedures;
- Establishing, implementing and maintaining effective management of change processes and procedures;
- Establishing, implementing and maintaining effective incident reporting and investigation processes and procedures;

- Establishing, implementing and maintaining effective auditing and inspection processes and procedures; and
- Formally reviewing the contractor's Health and Safety Management System annually to ensure that the system continues to be effective in managing health and safety performance and meeting project requirements.

All costs associated with meeting these responsibilities shall be borne by the contractor.

Any cost associated with any work stoppage due to non-compliance with a health and safety requirement shall be for the contractor's account.

10.1 Contractor Construction Manager

The Contractor must appoint a competent Construction Manager who is registered with SACPCMP (South African Council for Project and Construction Management) and who shall be responsible for the successful and safe completion of all work to be carried out by the contractor as required by the Construction regulations of 2014, regulation 8(1).

The contractor's Construction Manager shall be responsible for:

- Ensuring that a Health and Safety Policy that clearly states the contractor's values and objectives for the effective management of health and safety on the project is in place and is communicated to all contractor and sub-contractor employees;
- Ensuring that all applicable legal and project health and safety requirements are identified and complied with at all times;
- Ensuring that effective hazard identification and risk management processes are established and implemented for all work to be carried out by the contractor;
- Participating in the Baseline Risk Assessment for the contractor's scope of work (prior to site establishment);
- Participating in (and approving) all Task-Based Risk Assessments conducted for the work to be carried out by the contractor;
- Driving the achievement of agreed health and safety objectives;
- Ensuring that the necessary resources are made available for the effective implementation of the contractor's Health and Safety Management Plan;
- Ensuring that all work is adequately and competently supervised;

- Ensuring that all contractor employees have clearly defined responsibilities with regard to health and safety (assigned in writing), and that these responsibilities are clearly communicated and understood;
- Ensuring as far as is reasonably practicable that each contractor and sub-contractor employee is competent to perform his role, and has received appropriate workplace health and safety training and instruction;
- Managing all appointed sub-contractors with regard to health and safety performance;
- Establishing and maintaining effective communication and consultative processes to ensure that all contractor and sub-contractor employees are kept up to date with regard to health and safety information (e.g. Incidents and lessons learnt, leading practices, hazards, risks and control measures, etc.) And that feedback is provided promptly regarding issues and / or concerns raised;
- Participating in the project's Visible Felt Leadership (VFL) programme;
- Chairing monthly Contractor Health and Safety Meetings and attending monthly Site Health and Safety Meetings;
- Implementing programmes that encourage continual improvement and providing recognition for suggestions made by contractor and sub-contractor employees;
- Implementing the contractor's Health and Safety Management Plan and associated Safe Work Procedures;
- Acting consistently and strictly against any contractor or sub-contractor employee who transgresses a health and safety rule or requirement;
- Ensuring that an effective management of change process is in place;
- Implementing, testing and maintaining an effective Emergency Response Plan for all contractor and sub-contractor activities, and ensuring that the plan is adequately resourced;
- Ensuring that workplace exposure of contractor and sub-contractor employees to hazardous substances or agents is measured and monitored to determine the effectiveness of controls and compliance with legal (and project) requirements;
- Ensuring that all incidents are reported without delay and are investigated thoroughly;
- Participating in investigations into significant incidents;

- Ensuring that accurate health and safety statistics are maintained, and that health and safety performance reports are compiled as required;
- Providing the necessary resources for regular health and safety audits and inspections to be conducted, and supporting the auditing process;
- Participating in health and safety audits, and carrying out workplace inspections;
- Ensuring that corrective actions (arising from incident investigations, audits, inspections, etc.) Are implemented, and that adequate resources are provided for this purpose; and
- Participating in an annual review of the contractor's Health and Safety Management System.

10.2 Contractor Health and Safety Officers

The contractor must appoint a full-time Health and Safety Officer for the duration of the contract who is registered with the SACPCMP (The South African Council for Project Construction Management Professions). The project site(s) (directly or through sub-contractors), must appoint full-time Health and Safety Officers, the number of which depending on the scope, complexity, budget and high risk activities involved, as required by the Construction regulations of 2014, regulation 8(5).

The Health and Safety Officer(s) must be on site when work commences at the start of the day and must remain on site until all activities for that day (including the activities of sub-contractors) have been completed. A Health and Safety Officer must be present during all shifts, so if work is carried out over more than one shift per day, the contractor must make provision for additional Health and Safety Officers.

Each Contractor Health and Safety Officer shall be responsible for:

- Reviewing all applicable legal and project health and safety requirements and providing guidance to contractor and sub-contractor personnel (particularly the contractor's Project Manager) to help ensure compliance at all times;
- Assisting with the implementation of effective hazard identification and risk management processes for all work to be carried out by the contractor;
- Participating in the Baseline Risk Assessment for the contractor's scope of work (prior to site establishment) and ensuring that identified control measures are implemented;

- Participating in all Task-Based Risk Assessments conducted for the work to be carried out by the contractor and ensuring that identified control measures are implemented;
- Conducting contractor health and safety induction training for all contractor and sub-contractor personnel;
- Compiling and maintaining all health and safety related documents and records required of the contractor;
- Communicating relevant health and safety information to contractor and sub-contractor personnel (e.g. Incidents and lessons learnt, leading practices, hazards, risks and control measures, etc.);
- Carrying out Safety Observations and Coaching (one per day);
- Evaluating (on a daily basis) the content of the Daily Safe Task Instructions (DSTI's) conducted by the contractor's appointed supervisors, and attending at least one DSTI each day;
- Attending monthly Contractor and Site Health and Safety Meetings;
- Assisting with the implementation of the contractor's Health and Safety Management Plan and associated Safe Work Procedures;
- Carrying out Planned Task Observations on an ad hoc basis;
- Assisting with the implementation, testing and maintenance of an effective Emergency Response Plan for all contractor and sub-contractor activities;
- Responding to workplace incidents (as appropriate);
- Participating in incident investigations;
- Maintaining accurate health and safety statistics (for the contractor and all sub-contractors), and compiling health and safety performance reports as required;
- Auditing the health and safety management system and workplace activities of the contractor and each sub-contractor on a monthly basis to assess compliance with the project health and safety requirements; and
- Tracking and reporting on the implementation of corrective actions (arising from incident investigations, audits, inspections, etc.).

The contractor must ensure that each Health and Safety Officer is adequately equipped to enable him to perform his duties effectively. Each Health and Safety Officer must be provided with the following:

- A computer with access to all necessary systems, including access to e-mail and the internet;
- A mobile telephone on contract or with adequate pre-paid airtime; and
- A vehicle where required or instructed by a nominated project management representative (depending on the size and location of the project site(s)).

A Health and Safety Officer must over and above the SACPCMP registration as an Officer; be computer literate, fluent in English, and must have the following minimum qualifications, training and experience:

- At least 5 years' experience as a Health and Safety Officer on construction projects;
- SAMTRAC, NEBOSH or an equivalent training course with accredited health and safety service provider as a minimum qualification ;
- Experience and appropriate training with regard to implementing and maintaining a health and safety management system compliant with national legislation or an international standard;
- Experience and appropriate training with regard to construction related hazard identification and risk management processes;
- Competence, experience and relevant training with regard to incident investigation procedures and causation analysis;
- Health and safety auditing experience and training;
- A valid First Aid certificate of competency;
- Fire prevention and protection training; and
- A valid Driving Licence (light motor vehicle).
- Registered as a Health and Safety Officer or Health and Safety Manager with SACPCMP. The Client will stipulate which is required depending on the size of the project and on the risk.

The Client will stipulate whether a CHSO or CHSM is required depending on the size of the project and on the risks. Before placing a Health and Safety Officer on the project site(s), the contractor must forward a copy of the person's CV to the nominated TRANSNET Project Management Representative or to the Lead Health and Safety Manager for review and acceptance. A proposed candidate may be rejected should he/she not meet

the experience and/or qualification requirements, or due to poor work performance on previous projects.

10.3 Contractor Supervisors

The contractor must ensure that all project and/or construction works are supervised at all times by an adequate number of qualified, competent and appointed supervisors who have experience in the type of work being carried out as required by Construction regulations of 2014, regulation 8(7) and 8(8).

No work may be carried out without an appointed supervisor being physically present in the work area(s) and without a daily safety task instruction having been completed.

Each Contractor Supervisor shall be responsible for:

- Ensuring that all work carried out under his supervision is done so in accordance with the requirements of all applicable legislation, rules, standards, specifications, plans and procedures;
- Participating in Baseline and Task-Based Risk Assessments;
- Ensuring that all employees under his supervision are made aware of the hazards, risk scenarios and control measures identified in relevant risk assessments;
- Ensuring that the control measures stipulated in all relevant risk assessments are in place and are implemented fully for all work carried out under his supervision;
- Ensuring that all employees under his supervision conduct pre-task hazard assessments when necessary;
- Driving the achievement of health and safety objectives set for his team;
- Ensuring that the necessary written appointments are in place for each employee under his supervision (e.g. First aider, mobile crane operator, etc.);
- Ensuring that all employees under his supervision attend all required training;
- Ensuring that no employee carries out any work that he is not competent to perform or has not been appointed to perform;
- Identifying training needs within his team;
- Carrying out Safety Observations and Coaching (one per day);
- Conducting a weekly Toolbox Talk with his team;
- Leading a Daily Safe Task Instruction discussion with his team;

- Attending Health and Safety Meetings as required;
- Maintaining a Health and Safety Management Information Notice Board in the work area for which he is responsible;
- Recording, on a daily basis, a description of the day's activities as well as a breakdown (by occupation) of the personnel on site under his supervision (e.g. 5 bricklayers, 2 carpenters, 3 welders, 22 general workers, and 1 supervisor);
- Ensuring that all Safe Work Procedures applicable to the work carried out under his supervision are adhered to and are fully implemented;
- Maintaining discipline and taking the necessary action whenever an employee under his supervision does not adhere to a rule or requirement;
- Carrying out Planned Task Observations (one per day);
- Ensuring that emergency response procedures are understood by all employees under his supervision and that these procedures are followed in the event of an emergency;
- Reporting all incidents immediately, participating in incident investigations, communicating the lessons learnt to all employees under his supervision, and implementing corrective actions where required; and
- Carrying out workplace health and safety inspections.

Each supervisor must accept these responsibilities in writing as part of his appointment.

Each supervisor must be equipped with a mobile telephone to ensure that effective communication can be maintained for the duration of the contract.

10.4 Health and Safety Representatives

The team of employees on site must have a health and safety representative deployed on the project site(s). A Health and Safety Representative must be elected and appointed. Taking into consideration the number of employees deployed, the geographical area in which the work is taking place, the different work disciplines, and the shift pattern (if applicable), the contractor must ensure that an adequate number of Health and Safety Representatives (at a minimum ratio of one Health and Safety Representative per 50 employees) are elected and appointed to effectively represent all site personnel as required by the OHS Act 85 of 1993, section 17 - 18.

Each Health and Safety Representative must attend an accredited training course for health and safety representatives. The cost of this training shall be for the contractor's account.

The contractor must make the necessary allowances for the Health and Safety Representatives to carry out their duties as specified in the applicable legislation.

The contractor must ensure that an appropriate sticker is affixed to the safety helmet of each Health and Safety Representative for identification purposes.

10.5 First Aiders

At least one trained and competent First Aider must be in place and must be appointed for the project site(s). Taking into consideration the number of employees deployed, the geographical area in which the work is taking place, the different work disciplines, and the shift pattern (if applicable), the contractor must ensure that an adequate number of First Aiders (at a minimum ratio of one First Aider per 50 employees) are in place and have been appointed to administer first aid treatment should this be required.

First Aid training must be done through an accredited training institution. The cost of this training shall be for the contractor's account.

The contractor must ensure that an appropriate sticker is affixed to the safety helmet of each First Aider for identification purposes.

10.6 Duties of Client

As per the Construction regulations of 2014, regulation 5(1) – (8) a client will—

- Prepare a baseline risk assessment for an intended construction work project;
- Prepare a suitable, sufficiently documented and coherent site specific health and safety specification for the intended construction work based on the baseline risk assessment contemplated in paragraph
- Provide the designer with the health and safety specification contemplated in paragraph (b);
- Ensure that the designer takes the prepared health and safety specification into consideration during the design stage;
- Ensure that the designer carries out all responsibilities contemplated in CR regulation 6;
- Include the health and safety specification in the tender documents;

- Ensure that potential principal contractors submitting tenders have made adequate provision for the cost of health and safety measures;
- Ensure that the principal contractor to be appointed has the necessary competencies and resources to carry out the construction work safely;
- Take reasonable steps to ensure co-operation between all contractors appointed by the client to enable each of those contractors to comply with these Regulations;
- Ensure before any work commences on a site that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No. 130 of 1993);
- Appoint every principal contractor in writing for the project or part thereof on the construction site;
- Discuss and negotiate with the principal contractor the contents of the principal contractor's health and safety plan contemplated in CR regulation 7(1), and must thereafter finally approve that plan for implementation;
- Ensure that a copy of the principal contractor's health and safety plan is available on request to an employee, inspector or contractor;
- Take reasonable steps to ensure that each contractor's health and safety plan contemplated in
- CR Regulation 7(1)(a) is implemented and maintained;
- Ensure that periodic health and safety audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days;
- Ensure that a copy of the health and safety audit report contemplated in paragraph (o) is provided to the principal contractor within seven days after the audit;
- Stop any contractor from executing a construction activity which poses a threat to the ensure that a copy of the health and safety audit report contemplated in paragraph (o) is provided to the principal contractor within seven days after the audit;
- Stop any contractor from executing a construction activity which poses a threat to the health and safety of persons which is not in accordance with the client's health and safety specifications and the principal contractor's health and safety plan for the site;

- Where changes are brought about to the design or construction work, make sufficient health and safety information and appropriate resources available to the principal contractor to execute the work safely; and
- Ensure that the health and safety file contemplated in CR regulation 7(1) (b) is kept and maintained by the Principal contractor.

Where a client requires additional work to be performed as a result of a design change or an error in Construction due to the actions of the client, the client must ensure that sufficient safety information and appropriate additional resources are available to execute the required work safely.

Where a fatality or permanent disabling injury occurs on a construction site, the client must ensure that the contractor provides the provincial director with a report contemplated in section 24 of the Act, in accordance with regulations 8 and 9 of the General Administrative Regulations, 2013, and that the report includes the measures that the contractor intends to implement to ensure a safe construction site as far as is reasonably practicable.

Where more than one principal contractor is appointed as contemplated in sub-regulation CR 5(1) (k), the client must take reasonable steps to ensure co-operation between all principal contractors and Contractors in order to ensure compliance with these Regulations. Notification of construction work to DOL is required for this project as contemplated in CR regulation 4(1).

10.7 Duties of the Designer

As per the Construction regulations of 2014, regulation 6(1) – (2) a designer must –

- Ensure that the applicable safety standards incorporated into these Regulations under section 44 of the Act are compiled within the design;
- Take into consideration the health and safety specification submitted by the client;
- Before the contract is put out to tender, make available in a report to the client—
- All relevant health and safety information about the design of the relevant structure that may affect the pricing of the construction work;
- The geotechnical-science aspects, where appropriate; and
- The loading that the structure is designed to withstand;
- Inform the client in writing of any known or anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the

safe execution of the work upon being designed or when the design is subsequently altered;

- When modifying the design or substituting materials; take into account the hazards relating to any subsequent maintenance of the relevant structure and must make provision in the design for that work to be performed to minimize the risk;
- When mandated by the client to do so, carry out the necessary inspections at appropriate stages to verify that the construction of the relevant structure is carried out in accordance with his design: Provided that if the designer is not so mandated, the client's appointed agent in this regard is responsible to carry out such inspections;
- When mandated stop any contractor from executing any construction work which is not in accordance with the relevant design's health and safety aspects: Provided that if the designer is not so mandated, the client's appointed agent in that regard must stop that contractor from executing that construction work;
- When mandated in his or her final inspection of the completed structure in accordance with the National Building Regulations, include the health and safety aspects of the structure as far as reasonably practicable, declare the structure safe for use, and issue a completion certificate to the client and a copy thereof to the contractor; and
- During the design stage, take cognisance of ergonomic design principles in order to minimize ergonomic related hazards in all phases of the life cycle of a structure.

The designer of temporary works must ensure that -

- All temporary works are adequately designed so that it will be capable of supporting all anticipated vertical and lateral loads that may be applied;
- The designs of temporary works are done with close reference to the structural;
- The designs of temporary works are done with close reference to the structural design drawings issued by the contractor, and in the event of any uncertainty consult the contractor;
- All drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector; and
- The loads caused by the temporary works and any imposed loads are clearly indicated in the design.

10.8 Duties of Principal Contractor

As per the Construction regulations of 2014, regulation 7(1) – (8) a Principal Contractor and Contractor must

- Provide and demonstrate to the client a suitable, sufficiently documented and coherent site specific health and safety plan, based on the client's documented health and safety specifications contemplated in CR 5(1)(b), which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the principal contractor as work progresses;
- Open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, which must be made available on request to an inspector, the client, the client's agent or a contractor; and
- On appointing any other contractor, in order to ensure compliance with the provisions of the Act:

Provide contractors who are tendering to perform construction work for the principal contractor, with the relevant sections of the health and safety specifications contemplated in CR regulation 5(1)(b) pertaining to the construction work which has to be performed;

- Ensure that potential contractors submitting tenders have made sufficient provision for health and safety measures during the construction process;
- Ensure that no contractor is appointed to perform construction work unless the principal contractor is reasonably satisfied that the contractor that he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely;
- Ensure prior to work commencing on the site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993;
- Appoint each contractor in writing for the part of the project on the construction site;
- Ensure that a copy of his or her health and safety plan contemplated in paragraph (a),
- As well as the contractor's health and safety plan contemplated in CR 7 sub-regulation (2)(a), is available on request to an employee, an inspector, a contractor, the client or the client's agent;
- Hand over a consolidated health and safety file to the client upon completion of the construction work and must, in addition to the documentation referred to in CR 7 sub-

regulation (2)(b), include a record of all drawings, designs, materials used and other similar information concerning the completed structure;

- In addition to the documentation required in the health and safety file in terms of paragraph (c)(v) and CR 7 sub-regulation (2)(b), include and make available a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done; and
- Ensure that all his or her employees have a valid medical certificate of fitness, inclusive of a drug test and specific to the Construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.

10.9 Duties of Contractor

A contractor must -

- Prior to performing any construction work, provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the client's health and safety specification and provided by the principal contractor, which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the contractor as work progresses;
- Open and keep on site a health and safety file, which must include all documentation required and must be made available on request to an inspector, the client, the client's agent or the principal contractor;
- Before appointing another contractor to perform construction work be reasonably satisfied that the contractor that he or she intends to appoint has the necessary competencies and resources to perform the construction work safely;
- Co-operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act; and
- As far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work on the site, any person who might be affected by the work of such a person at work, or which might justify a review of the health and safety plan.

Where a contractor appoints another contractor to perform construction work, the duties that apply to the principal contractor apply to the contractor as if he or she were the principal contractor.

A contractor must take reasonable steps to ensure co-operation between all contractors appointed by the principal contractor to enable each of those contractors to comply with these Regulations.

A contractor must ensure that all visitors to a construction site undergo health and safety induction pertaining to the hazards prevalent on the site and must ensure that such visitors have the necessary personal protective equipment.

A contractor must at all times keep on his or her construction site records of the health and safety induction training and such records must be made available on request to an inspector, the client, the client's agent or the principal contractor.

A contractor must ensure that all his or her employees have a valid medical certificate of fitness, inclusive of a drug test specific to the construction work to be performed and issued by a registered occupational health practitioner, in the form of Annexure 3.

10.10 Management and supervision of Construction work

A principal contractor must in writing appoint one full-time competent person as the construction manager with the duty of managing all the construction work on a single site, including the duty of ensuring occupational health and safety compliance, and in the absence of the construction manager an alternate must be appointed by the principal contractor.

A principal contractor must upon having considered the size of the project, in writing appoint one or more assistant construction managers for different sections thereof: Provided that the designation of any such person does not relieve the construction manager of any personal accountability for failing in his or her management duties in terms of this regulation.

Where the construction manager has not appointed assistant construction managers as in the opinion of an inspector, a sufficient number of such assistant construction managers, that inspector must direct the construction manager in writing to appoint the number of assistant construction managers indicated by the inspector.

No construction manager appointed may manage any construction work on or in any construction site other than the site in respect of which he or she has been appointed.

A contractor must, after consultation with the client and having considered the size of the project, the degree of danger likely to be encountered or the accumulation of hazards

or risks on the site, appoint a full-time or part-time construction health and safety officer in writing to assist in the control of all health and safety related aspects on the site: Provided that, where the question arises as to whether a construction health and safety officer is necessary, the decision of the Department of Employment and Labour is decisive.

No contractor may appoint a construction health and safety officer to assist in the control of health and safety related aspects on the site unless he or she is reasonably satisfied that the construction health and safety officer that he or she intends to appoint is registered with a statutory body approved by the Chief Inspector and has necessary competencies and resources to assist the contractor

A construction manager must in writing appoint construction supervisors responsible for construction activities and ensuring occupational health and safety compliance on the construction site.

A contractor must, upon having considered the size of the project, in writing appoint one or more competent employees for different sections thereof to assist the construction supervisor and every such employee has, to the extent clearly defined by the contractor in the letter of appointment, the same duties as the construction supervisor: Provided that the designation of any such employee does not relieve the construction supervisor of any personal accountability for failing in his or her supervisory duties in terms of this regulation.

No construction supervisor appointed under may supervise any construction work on or in any construction site other than the site in respect of which he or she has been appointed: Provided that if a sufficient number of competent assistant construction supervisors have been appropriately designated on all the relevant construction sites, the appointed construction supervisor may supervise more than one site.

11. Competence, Training and Awareness

Each employee (including sub-contractor employees) must be suitably trained and competent, and must understand the health and safety hazards, risks and control measures associated with his work as required by the OHS Act 85 of 1993.

The contractor must implement systems and procedures to ensure that:

- The necessary competencies required by employees are identified (by occupation), along with selection, placement and any training requirements;

Please Note: Specific competency profiles and selection criteria (fitness for work) must be developed for all roles where significant health or safety risk exists.

Please Note: A formal training needs analysis must be carried out based on the competency profiles and a training matrix must be developed for the project.

Roles requiring technical certification, registration or licensing are identified and documented, and these roles are filled only by suitably qualified personnel;

- Minimum core health and safety skills required by employees in leadership and supervisory roles are identified and suitable training is provided including hazard identification and risk assessment, incident investigation, and health and safety interactions (i.e. Observation and coaching techniques);
- Competency-based training is provided and it includes operational controls (procedures and work instructions), management of change, and emergency response;
- All employees hold and maintain the required competencies (including appropriate qualifications, certificates and licences) and are under competent supervision;
- A site-specific induction and orientation programme that highlights health and safety requirements, procedures, and significant hazards, risks and associated control measures is in place for all new employees and visitors (understanding must be assessed);
- Personnel are trained and / or briefed on new or amended standards, rules, safe work procedures, risk assessments, etc.;
- Refresher training is carried out as required (e.g. Re-induction following an absence from site);
- Records of education, qualifications, training, experience and competency assessments are maintained on site for all employees; and
- The effectiveness of training is reviewed and evaluated.

Prior to the commencement of any work, including mobilisation and site set-up activities, the contractor must provide, to the satisfaction of the nominated project management representative, current documentation verifying that the contractor's employees, as well as the employees of any appointed sub-contractors, are competent and have the necessary qualifications, certificates, licences, job skills, training and experience (as

required by this specification and applicable legislation) to safely carry out the work that is to be performed.

The Contractor and sub-contractor must ensure that the following training takes place:

- health and safety induction training pertaining to the hazards prevalent on the site at the time of entry
- training for all persons required to erect, move or dismantle temporary works structures and instruction to perform those operations safely
- training of employees working from a fall risk position
- training to work or to be suspended on a platform which includes at least:
 - how to access and egress the suspended platform safely;
 - how to correctly operate the controls and safety devices of the equipment;
 - information on the dangers related to the misuse of safety devices; and
 - information on the procedures to be followed in the case of-
 - o an emergency;
 - o the malfunctioning of equipment; and
 - o the discovery of a suspected defect in the equipment;
 - o an instructions on the proper use of body harnesses.
- Training for all operators of construction vehicles and mobile plant.

A contractor must at all times keep on his or her construction site records of the health and safety induction training and such records must be made available on request to an inspector, the client, the client's agent or the principal contractor.

Please Note: Only certified copies of certificates, licences, etc. will be accepted.

An Employee Profile (dossier) must be completed for each employee who will be performing work on site. All documentation pertaining to an employee's competence (i.e. certified copies of qualifications, certificates and licences as well as proof of job skills, training and experience) must be maintained in this dossier.

If it is determined through observation that an employee is not yet competent to carry out a particular task in a safe and capable manner, the employee will be required to cease

work immediately and must either be reassigned or be retrained at the contractor's expense.

The contractor must provide proof that the training institutions and trainers that are used are appropriately registered with a governing authority (a trainer's registration certificate or registration number alone will not be adequate). The following must be made available for verification purposes:

- Proof of registration of the training institution including the training programmes that the institution is accredited to provide; and
- For each trainer, proof of competency and registration for the specific training programmes presented.

Foreign qualifications held by employees in health and safety critical roles must be verified against the requirements of local legislation.

11.1 Health and Safety Induction Training

Each employee must attend all mandatory Health and Safety Induction Training applicable to the project. No employee will be permitted to enter any project work site until he has attended this training. Each employee must carry proof that he has completed the induction training and may be removed from a site if such proof cannot be produced on request, this as required by the Construction regulations of 2014, Regulation 7(5).

Furthermore, employees must attend (where applicable) Area-Specific Health and Safety Induction Training pertaining to the particular hazards identified in the area(s) where the employees will be working. No employee will be permitted to enter a work area until he has attended the relevant area-specific training.

All visitors must receive a visitor induction briefing before entering any project work site. However, this induction does not permit a visitor to enter a site unescorted. Visitors must be accompanied at all times by an appropriately senior employee who has been fully inducted.

11.2 Specific Training and Competency Requirements

The following specific training and competency requirements must be complied with, where applicable to the project.

Please Note: An employee must be trained, assessed and found competent before he will be given authorisation to perform certain tasks or fill certain roles.

Table 12-1: Specific Training and Competency Requirements

Training	Applicable To
Health and Safety Induction	All employees
Safety Observations and Coaching (Safety Interactions)	All employees
Risk Assessment*	All managers and supervisors
Incident Investigation*	All managers and supervisors
Safety Leadership	All managers and supervisors
Legal Liability*	All managers and supervisors
Health and Safety Rep*	All elected Health and Safety Representatives
First Aid Levels 1, 2 and 3*	All nominated First Aiders
Fire Fighting (Fire Extinguisher Use)*	All employees
Permit to Work	All Authorised Persons (i.e. Permit issuers) and all Applicants (i.e. Employees who will be applying for permits)
Isolation and Lockout	All Authorised Persons (i.e. Persons who authorise work that requires Isolation and Lockout), all Isolation Officers, and all Applicants (i.e. Persons who request permission to work on systems or equipment requiring Isolation and Lockout)
Mobile Equipment Site Licence*	All mobile equipment operators

Training requirements marked with an * must be arranged by the contractor through accredited external training institutions.

12. Communication, Participation and Consultation

The contractor must establish and maintain effective communication and consultative processes (allowing for a two-way dialogue) for the duration of the project to ensure that:

- All personnel are kept up to date with regard to health and safety matters (e.g. Hazards and risks, incidents and lessons learnt, leading practices, performance against objectives, etc.);

- General health and safety awareness levels are kept high;
- Prompt feedback is given to personnel with regard to health and safety issues or concerns that they raise; and
- Relevant, and often critical, health and safety related information (e.g. Design changes, instructions, reporting of hazardous conditions or situations, etc.) is effectively disseminated.

This must be achieved as follows:

12.1 Visible Felt Leadership (VFL) and Safety Observations and Coaching (SOC's)

The contractor's supervisory personnel (i.e. Managers and supervisors) must participate in the project's Visible Felt Leadership (VFL) programme. Each manager and each supervisor must, as part of his normal duties, perform Safety Observations and Coaching (SOC's). The intention of this programme is to encourage interaction between supervisors and workers concerning health and safety matters in order to:

- Reinforce behaviours consistent with standards, procedures and management system requirements;
- Correct behaviours inconsistent with standards, procedures and management system requirements; and
- Verify whether employees have the necessary training, certification, equipment, etc. To perform the work that they are carrying out.

Each manager, supervisor, safety personnel has a required number of SOCS to be completed per week. All SOC's that are recorded must be submitted to the nominated project management representative on a weekly basis.

The information that is gathered must be analysed and any trends that are identified must be acted on to correct unsafe behaviour or conditions.

12.2 Toolbox Talks

The contractor must prepare a Toolbox Talk on a weekly basis and must share it with all personnel for which the contractor is responsible (including all sub-contractors). Toolbox Talks must address health and safety issues that are relevant to the work performed on the project site(s) and must include information and / or knowledge sharing, lessons learnt from incidents that have occurred, information concerning specific hazards and / or risks and control measures to prevent injury, etc.

Attendance records must be kept and maintained in the contractor's health and safety file.

12.3 Daily Safe Task Instructions (DSTI's)

A Daily Safe Task Instruction (DSTI) is a pre-start discussion amongst the members of a work team, led by the appointed supervisor, aimed at anticipating hazards and potential risks associated with the activities planned for the day or shift, and ensuring that the necessary control measures are in place to prevent incidents.

At the start of each day or shift, prior to the start of any work, each appointed supervisor must inspect the work area for which he is responsible and ensure that it is safe. He must then conduct a DSTI with his work team specifically concerning the tasks that they will be performing during the course of the day or shift. The relevant Task-Based Risk Assessment for the activity must be used as the basis for the discussion. The correct work method must be reiterated and the identified hazards, risks and control measures must be discussed with the team (each team member must be given the opportunity to contribute and participate in the discussion).

Any team member arriving late must first be taken through the information that was discussed (work method, hazards, risks and control measures) before being permitted to start working. If the work method changes after activities have already begun, the DSTI must be revisited, updated and re-communicated with the team, and the changes must be signed off by the relevant Contractor Health and Safety Officer.

Every member of the work team must sign the DSTI attendance register. The attendance records must be kept and maintained in the contractor's health and safety file.

The contractor's Health and Safety Officer must evaluate the content of the DSTI's daily to ensure that they are task-specific. Furthermore, the Health and Safety Officer must attend the DSTI discussion but must not lead the DSTI discussions, as this is the responsibility of the appointed supervisor.

12.4 Health and Safety Suggestions

All employees must be encouraged to submit suggestions to enhance health and safety management on the project site(s). A process must be in place for documenting, evaluating, implementing (as appropriate), archiving and recognising the improvement ideas.

12.5 Health and Safety Meetings

13.5.1 Contractor Health and Safety Meetings (OHS Act Section 19)

The contractor must schedule and consistently hold monthly health and safety meetings. These meetings must be chaired by the contractor's Project Manager and the following persons must be in attendance:

- Contractor and sub-contractor management representatives;
- Contractor and sub-contractor supervisors;
- Contractor and sub-contractor appointed Health and Safety (Employee) Representatives;
- Contractor and sub-contractor Health and Safety Officers; and

The meeting must address the following as a minimum:

- New incidents for the period and corrective actions taken or to be taken;
- Implementation status of outstanding actions associated with previous incidents;
- SOC's, PTO's and DSTI's carried out for the period and action required to correct trends identified;
- Results of any audits, inspections (including H&S Rep inspections) or site visits carried out;
- A look ahead to ensure that appropriate health and safety planning and preparation is done for upcoming work;
- Risk Assessments, Safe Work Procedures, etc. That are outstanding or due for review (as well as the quality of these documents); and
- Any other health and safety related matter.

The contractor must compile minutes of each meeting and such minutes must be signed off by the Chairperson as a true reflection and attendance records must be kept. These records must be maintained in the contractor's health and safety file.

13.5.2 Site Health and Safety Meetings

In addition to the Contractor Health and Safety Meetings, the Project will schedule monthly Site Health and Safety Meetings that the contractor must attend. These meetings will be chaired by the Project Construction Manager and the following persons must be in attendance:

- Contractor management representatives;
- Contractor Health and Safety Officers;
- The Project Health and Safety Manager;
- Project Health and Safety Advisors; and

- Client representatives (ad hoc).

The meeting will address the following as a minimum:

- Feedback from the contractor concerning health and safety performance for the period;
- New incidents for the period and corrective actions taken or to be taken;
- Implementation status of outstanding actions associated with previous incidents;
- SOC's, PTO's and DSTI's carried out for the period and action required to correct trends identified;
- Results of any audits, inspections or site visits carried out;
- A look ahead to ensure that appropriate health and safety planning and preparation

Is done for upcoming work;

- Risk Assessments, Safe Work Procedures, etc. That are outstanding or due for review (as well as the quality of these documents); and
- Any other health and safety related matter.

12.6 Health and Safety Performance Boards

The contractor must provide and maintain a Health and Safety Performance Board to be approved by the nominated project management representative and to be positioned at the entrance to the contractor's site office area. This board must display the following information as a minimum:

- The contractor's logo;
- Current manpower (heads) on site;
- Man-hours worked for the current month and project to date;
- Lost Time Injury Frequency Rate (LTIFR);
- Dates of last injuries (FAI, MTI and LTI);
- Number of hours worked since the last recorded LTI; and
- Names and contact telephone numbers for the appointed Project Manager and the Health and Safety Officers.

12.7 Health and Safety Management Information Notice Boards

The contractor must provide, for each construction site, a portable Health and Safety Management Information Notice Board to be placed in the work area. The following information and documentation, as a minimum, must be posted on these boards:

- The relevant Method Statements, Risk Assessments and Safe Work Procedures for the work that is being performed that day;

- The DSTI for the day;
- The most recent Toolbox Talk;
- Where applicable, all required permits and permissions for the work that is being performed;
- Material Safety Data Sheets (MSDS's) for any chemical substances being used;
- The health and safety objectives for the work team;
- Details of the last incident involving the work team;
- The most recent weekly health and safety report;
- Emergency procedures;
- A site plan indicating evacuation routes and emergency assembly point locations;
- First Aider and Health and Safety Representatives names, contact telephone numbers as well as recent photo; and
- The appointed supervisor's contact details.

12.8 Involvement (Other)

The participation of all contractor (and sub-contractor) employees in activities that promote improvements in health and safety performance must be encouraged. In particular, this must include their appropriate involvement in:

- Hazard identification, risk analysis and determining control measures;
- Incident investigation; and
- Reviewing policy and objectives.

All regulations, instructions, signage, etc. Must be communicated in a language understood by all employees.

Health and safety personnel must be actively involved in planning activities so that they have the opportunity to highlight hazards and risks associated with upcoming work well in advance to ensure sufficient time to arrange and / or implement the necessary control measures.

13. Documentation and Document Control

The contractor must develop and maintain project-specific documentation required for the effective management of health and safety on the project.

All documents related to the contractor's health and safety management system must be effectively controlled.

The document control process must:

- Provide for the review, revision and version control of documents;
- Uniquely identify documents (as appropriate) to control their use and function;

- Require approval of the documents for adequacy prior to issue;
- Clearly identify changes and record the status of any revisions to documents;
and
- Provide for the effective distribution of documents to, and where necessary the timely removal of obsolete documents from, all points of issue and use.

The contractor must establish a process for the systematic control of health and safety records and related data. Controls must be in place for the creation, receipt, secure storage, maintenance, accessing, use and disposal of such records and data.

Each record must be legible, identifiable and traceable, and must contain adequate information and data for its purpose.

The confidentiality and security of records and data must be maintained in a manner that is appropriate for the nature of the records and data, and in accordance with any applicable data or privacy protection legislation.

Personal information originating from medical surveillance and occupational hygiene monitoring must be reported in a form that respects the privacy of the individual, but enables management to fulfil their duty of care obligations to employees. The names of individuals must not be disclosed without their written authorisation.

Retention periods for all records (based on legal requirements and / or knowledge preservation considerations) must be established and documented in accordance with applicable legislation.

13.1 Contractor Health and Safety File Requirements

The contractor must compile and maintain a file containing all necessary health and safety related documentation. The contents of the file will be audited by a Project Health and Safety Practitioner on a monthly basis.

Required documentation includes, but is not limited to, the following:

- Valid Letter of Good Standing from the Workman's Compensation Commissioner;
- Proof of Public Liability Insurance;
- Scope of Work under the contract;
- List of Contacts and their Telephone Numbers;
- Health and Safety Policy;
- Health and Safety Management Plan;

- Legal Register;
- Organisational Chart for the project;
- Appointment Letters (appointment of the contracting company, and appointments for all persons with health and safety related responsibilities);
- 37.2 Agreements
- Notifications to the relevant authorities that construction work is in progress;
- Baseline and Task-Based Risk Assessments;
- Safe Work Procedures, Work Instructions and Work Method Statements;
- Planned Task Observations;
- Fall Protection Plan (where applicable);
- A dossier (Equipment Profile) for each fuel-driven vehicle or machine;
- Inspection Registers, Forms and Checklists (e.g. For portable electrical tools, ladders, safety harnesses, light vehicles, mobile equipment, lifting equipment and lifting tackle, first aid boxes, fire extinguishers, etc.);
- PPE Issue Registers;
- Material Safety Data Sheets;
- Emergency Response Procedures;
- Incident Procedures and Records;
- A dossier (Employee Profile) for each employee containing:
- A copy of the employee's Identity Document or Passport;
- Certificate of Fitness (Pre-Employment Medical Examination);
- Proof of Induction Training;
- Other Training Records;
- Copies of Qualification Certificates and / or Certificates of Competency; and
- Copies of Licences;
- Health and Safety Meeting Minutes;
- Health and Safety Performance Reports;
- Copies of Inspection and Audit Reports; and
- Daily Safe Task Instructions (DSTI's) and Toolbox Talks.

The contractor must ensure that an equivalent file is compiled and maintained by each appointed sub-contractor.

14. Notification of Construction Work

A contractor who intends to carry out any construction work other than work contemplated in CR regulation 3(1), must at least 7 days before that work is to be

carried out notify the provincial director in writing in a form similar to Annexure 2 if the intended construction work will—

- include excavation work;
 - include working at a height where there is risk of falling;
 - include the demolition of a structure; or
- include the use of explosives to perform construction work.

15. Operational Control

Refer to Transnet Health and Safety Management Guidelines for Managing Common Hazardous Activities and Tasks: HAS-GN-0001. For project operations and activities, the contractor shall implement and maintain:

- Operational controls, as applicable to the organization and its activities;
- The organization shall integrate those operational controls into its overall OH&S Management System;
- Controls related to purchased goods, equipment and services;
- Controls related to contractors and other visitors to the workplace;
- Documented procedures, to cover situations where their absence could lead to deviations from the OH&S policy and the objectives;
- Stipulated operating criteria where their absence could lead to deviations from the OH&S policy and objectives.

16. Safe Work Procedures

The contractor must develop, document and implement Safe Work Procedures for all activities involving significant health or safety risk. These procedures must detail the control measures required to effectively manage the health and safety risks associated with the work activities.

Each Safe Work Procedure must be consistent with the Task-Based Risk Assessment completed for the activity.

Every person engaged in an activity for which a Safe Work Procedure has been developed must receive suitable training on the procedure.

Furthermore, the contractor must develop, document, communicate and implement formal procedures, work instructions and / or programmes for the operation, maintenance, inspection and testing of all plant and equipment (including protective systems and devices) brought onto the project site(s).

17. Planned Task Observations

All contractor, management supervisors must perform Planned Task Observations (PTO's) to verify that the control measures that have been identified in Safe Work Procedures (and associated Risk Assessments) are being adhered to and are being properly implemented, and to provide guidance where deviations are noted.

Each supervisor must complete at least two PTO per week involving one or more employees in his work team. This number of PTO's is at the discretion of TRANSNET's Project Manager or appointed Representative.

When an unsafe act or condition is identified, the supervisor must coach the work team to correct the act or condition in line with the Safe Work Procedure.

Where valid changes to the work method are identified, the supervisor must ensure that the Safe Work Procedure and Risk Assessment are updated to reflect the current practice.

Project representatives will carry out PTO's on contractor employees on an ad hoc basis. Should deviations from the contractor's Safe Work Procedures be observed, the work may be stopped until these deviations are rectified.

18. General Rules of Conduct

All persons are required to conform to the following rules of conduct while on the site.

The following acts are prohibited:

- Engaging in practical jokes, horseplay, scuffling, wrestling, fighting, or gambling;
- Assault, intimidation, or abuse of any person;
- Insubordination towards any supervisor or manager;
- Refusing to carry out a reasonable and lawful instruction concerning health and safety;
- Entry into any restricted area (including barricaded areas), unless authorised to do so by the responsible person;
- Unauthorised use / operation of any equipment or machinery;
- Negligently, carelessly or wilfully causing damage to any property;
- Destroying or tampering with safety devices, signs, or signals;
- The use of water from fire hydrants or hose reels for any purpose other than extinguishing a fire;
- The wilful and unnecessary discharging of fire extinguishers;
- Refusing to give evidence or deliberately making false statements during incident investigations;

- Bringing alcohol, drugs, or any other intoxicating substance onto site;
- Bringing a firearm, ammunition, or any other offensive weapon onto site;
- Bringing animals onto site;
- Running, except in an emergency;
- The use of cell-phones (or similar devices) whilst working on site;
- Sleeping on the job;
- Building fires on site, unless in a suitably constructed barbequing facility; and
- Pouring / pumping / flushing any substance (chemical / hydrocarbon / waste water) into a storm water drain, onto bare soil, or into any area where the substance is not effectively contained.

Any of the above actions may result in the temporary or permanent removal of the offending person(s) from site, as well as possible prosecution. The decision of the nominated project management representative shall be final and binding in respect of any dispute that may arise from the interpretation of these requirements.

TRANSNET will not get involved in contractor disciplinary rules and procedures. The contractor will simply be informed (with reasons) that the offending employee(s) will be denied access to the project site. Once the contractor has been informed, the employee(s) must be removed from the site immediately.

19. Site Access

The Principal Contractor will only have access to the site once the health and safety file has been accepted by the Client. A health and safety site access certificate will then be issued to the Principal Contractor so that site establishment can commence.

A Contractors health and safety file will also be issued to the Client for acceptance before work can commence.

19.1 Access Control

The contractor may not hire any security services for the project site unless authorisation has been obtained in writing from a nominated project management representative.

The contractor must comply with all access control, procedures and systems applicable to the project site.

Failure to comply with these requirements will be viewed as a serious safety breach and may result in the permanent removal of the individual(s) / contracting company from site or suspension without payment.

Access will be controlled as follows:

Contract period access – an access card valid for the full contract period will be issued to an individual once the following requirements have been met:

- Completion of a pre-employment medical examination which states that the employee is fit for duty;
- Completion of all required project induction training;
- Completion of special training / licensing if applicable (e.g. Driving/operating Licence).

Note: No access card will be issued unless proof of identification is provided (i.e. an identity document or a valid passport). For foreign labour, an access card will only be issued if a valid work visa is produced.

Note: A driving licence will not be accepted as proof of identification.

19.2 Trespassing

The contractor must ensure that no employee (including sub-contractor employees) trespasses on any land lying beyond the boundaries of the project site.

If instructed by a nominated project management representative to do so, the contractor must remove any employee who fails to comply with this requirement from the project.

The contractor's activities must be confined to the specified construction areas, and access to these areas may only be by means of specified routes.

All required barricading (fencing) must be erected and maintained by the contractor.

19.3 Visitors

Visitors (including reps and suppliers) must be advised in advance of the mandatory Personal Protective Equipment (PPE) requirements for the site, and must arrive with all of this PPE.

Upon arrival, all visitors must report to the Contractors designated Site Office where they must sign in.

All visitors must undergo a visitor induction briefing before entering the site.

Whilst on site, visitors must be accompanied at all times by an appropriately senior employee who has been inducted fully. The visitor(s) must be met at the designated Site Office, and when the visit is over, must be escorted back to the Site Office.

Note: Visitors are not permitted to perform any work on site.

Note: Any request (typically made by a government official) to carry out a site inspection must be referred to the nominated project management representative. The contractor must not arrange any such inspection without prior approval from the nominated project management representative.

19.4 Alcohol, Drugs and Other Intoxicating Substances

The contractor must ensure that all personnel under his authority do not at any time enter the site or perform any work whilst under the influence of alcohol, a drug, or any other intoxicating substance.

Selling or possessing drugs, alcoholic beverages or any other intoxicating substance on the site is strictly prohibited.

A drugs and alcohol testing program will be implemented. Persons entering the site will be daily tested. Any person who tests positive for alcohol or drug consumption will be subject to disciplinary action and shall be permanently removed from the site.

Any person have the opportunity to rather report that he/she is under the influence before accessing the project site – in these case the employee may only be send home for the day by the responsible project manager representative but will then be tested for the following five days (each day) on his return to the project site. If it is found that the same person is frequently reporting that he/she is under the influence before even accessing the project site, It shall be the responsibility of the nominated project management representative to take disciplinary action and remove such a person from the project site.

Should the actions and / or demeanour of an employee suggest possible narcosis or drunkenness, the employee must be removed from the site. This may be done without testing.

Note: All personnel involved in an incident / accident must immediately be subjected to an alcohol test and a drug test as part of the investigation.

19.5 Firearms, Ammunition and Offensive Weapons

Firearms, ammunition, and offensive weapons of any kind are strictly prohibited. No person may enter /shall not be permitted to enter the site carrying any such item.

19.6 Vehicles

All vehicles brought onto site must meet safety requirements. Each vehicle to be used on site must be inspected and approved by the nominated project management representative before a site access permit will be issued for the vehicle / equipment. No

vehicle shall be permitted to enter the site unless it is duly authorised. Access permits are vehicle-specific and may not be transferred between vehicles.

The contractor must allow any vehicle that is brought onto site (including privately owned vehicles) to be searched at any time while on the premises, or when entering or leaving the premises.

The contractor is solely responsible for the safety and security of all vehicles (including private vehicles) that is brought onto the site. All road-going vehicles used by the contractor on the site must be roadworthy and registered with the relevant traffic authority.

A vehicle will not be permitted to enter the site in an un-roadworthy condition. Access will be denied if, for example, but not limited to:

- The vehicle has a defective exhaust system;
- A serious oil or fuel leak is evident;
- The vehicle has unsafe bodywork or is carrying an unsafe load;
- The vehicle is fitted with extraneous or non-standard equipment;
- Passengers are not seated properly;
- The vehicle is not fitted with a seat belt for each occupant; or
- The vehicle has any obvious mechanical defect;
- Pre-inspection requirements are not met.

Overloaded vehicles will not be permitted to enter the site. The driver / operator of any vehicle / mobile equipment must carry a copy of his appointment with him at all times. Each driver / operator must:

- Comply with all site / project rules and regulations pertaining to traffic and the safe operation of vehicles / mobile equipment;
- Obey all road signs;
- Obey all instructions given by security or emergency services personnel;
- Remain within the boundaries of the site; and
- Ensure that the vehicle that he is operating is never overloaded, and that loads are always properly secured.

In the interest of safety, only the minimum number of vehicles required by the contractor to complete the work under the contract will be permitted to enter the site. When not in operation, the contractor's vehicles / mobile equipment must be parked within the boundaries of his lay-down area or yard.

Parking is only permitted in designated parking areas. All cars are parked on site at the owner's risk.

In the event of a vehicle accident on site, the driver(s) must report the incident immediately and must remain at the scene until a nominated project management representative arrives, or until a nominated project management representative authorises him to leave (unless, of course, the driver requires medical attention).

20. Mobile Equipment and Light Vehicles

All Contractors must ensure that mobile equipment and light vehicles comply with relevant/applicable legislation.

Each contractor must provide evidence to the nominated project management representative that all light vehicles and mobile equipment to be used on the project (including, but not limited to, lift and carry cranes (or mobi-lifts), mobile cranes, forklifts, mobile elevating work platforms (e.g. Cherry pickers), tractors, dozers, dump trucks, haul trucks, graders, excavators, loaders, back-actors, drill rigs, and road-going cars, light delivery vehicles, and trucks) comply with the requirements of relevant/applicable legislation. This evidence must be provided prior to the equipment being brought onto the project site. The contractor remains responsible for meeting this requirement even if the equipment to be used is leased or provided by a sub-contractor (i.e. not owned directly by the contractor).

An Equipment Profile (dossier) must be compiled for each light vehicle and each item of mobile equipment to be used on the project site. All mobile equipment and light vehicles (used for work purposes) must be subject to a risk assessment. The assessment must:

- Involve operators and maintenance personnel who will use and work on the equipment; and
- Address all aspects of safe operation including but not limited to handling, driver vision, brake failure, tyre blow out, and access and egress for operators and maintenance personnel.

Each light vehicle and each item of mobile equipment must be serviced and maintained as prescribed by the manufacturer of the vehicle or equipment. No major repairs or services may be carried out on site. No repairs may be carried out by a driver or operator. Only suitably qualified and competent persons may carry out repair work.

An appropriate pre-operation safety check based on a risk assessment must be carried out for each light vehicle or item of mobile equipment driven or operated for work purposes. For each vehicle or equipment type, an approved checklist must be in place (and must be used). The pre-operation check must include, but not be limited to, inspection and / or testing of the following safety critical features:

- Brakes (testing method must be provided);
- Wheels and tyres (including the spare);
- Lights and indicators;
- Steering;
- Seats and seat belts; and
- Windscreen and windows, including windscreen wipers and washers.

Should any critical feature be defective or damaged, the vehicle or equipment may not be operated until it has been fully repaired.

Supervisors must review the completed checklists on a daily basis to satisfy themselves that there are no major deficiencies that could place a driver or operator at risk. No person may drive or operate any light vehicle or item of mobile equipment without authorisation. All drivers and operators must be appointed in writing by the contractor's Project Manager.

No driver or operator may be appointed without proof that the individual has been trained, tested and found competent, or is currently licensed. The appointment letter must specify the type of vehicle or equipment for which authorisation is being given and must clearly confirm that the driver or operator:

- Is 18 (eighteen) years of age or older;
- Has undergone a medical examination and has been declared fit for work by an occupational medical practitioner; and
- Has received suitable training and has been found competent, or is in possession of a valid driving licence issued by a state, provincial or civil authority that is applicable to the class of vehicle or equipment that is to be driven or operated.

The principal accountability for preventing accidents and incidents lies with the driver or operator of a light vehicle or item of mobile equipment, as he is in full control of any given situation at any given time. It must be stressed to each driver and each operator that safety is his prime responsibility – this must be clearly instructed and understood.

Drivers and operators must be empowered to stop driving or operating immediately should an unsafe condition arise, and refuse to drive or operate any light vehicle or item of mobile equipment that is defective and / or has any inoperative safety features. Similarly, a supervisor must never force a driver or operator to drive or operate a defective vehicle or item of equipment.

If a driver or operator does not adhere to the site rules and regulations, his appointment must be withdrawn and he must not be permitted to continue with his duties. If necessary, site access will be denied (either temporarily or permanently) to any driver or operator who is deemed to not be adhering to site requirements.

No person may drive or operate a light vehicle or item of mobile equipment if he suffers from a medical condition that places both him and those around him at risk of injury. A fit-for-work policy must be in place. Daily alcohol testing and random drug testing must be carried out.

Supervisors must regularly check on the physical condition of drivers and operators during the course of a shift. A system must be in place to manage driver fatigue. No eating or drinking is permitted while driving or operating a light vehicle or item of mobile equipment.

A mobile phone, whether hands-free or not, may not be used by the driver or operator of a light vehicle or item of mobile equipment unless the vehicle/equipment is parked in a safe location and not operational. Behaviour-based observations and coaching must include the operation of light vehicles and mobile equipment.

A site-specific traffic management plan must be compiled and submitted to the nominated project management representative for approval. The plan must include, but not be limited to, (where relevant to the scope of work) the following:

- Segregation of pedestrians, light vehicles, and mobile equipment where possible (using barriers where feasible);
- Systems to control the movement of mobile equipment in areas accessible to pedestrians, the movement of mobile equipment into and out of workshops, and pedestrian and light vehicle movement around mobile equipment;
- Setting of appropriate speed limits for vehicle types, road surfaces and environmental conditions;
- Installation and maintenance of road traffic control signs;

- Right-of-way rules (including overtaking restrictions);
- Overtaking protocols;
- Clear communication protocols for interactions between all vehicles and equipment;
- Procedures for light vehicles and / or mobile equipment entering hazardous or restricted areas;
- Standards for safe following distances based on operational circumstances, environmental conditions and near sight (blind spot) limitations of mobile equipment;
- The minimum safe distance to be maintained between light vehicles and mobile equipment (i.e. 50 metres unless positive contact is made);
- Designated parking areas for mobile equipment and light vehicles, including parking associated with maintenance areas;
- Parking procedures (e.g. Safe parking distances, safe parking locations, requirements for reverse parking, etc.);
- Systems to control approaching, refuelling, parking, boarding and disembarking mobile equipment (a driver or operator must exit the cabin and must disembark the vehicle or equipment entirely when his direct involvement with maintenance or servicing is not required);
- Guidelines for abnormal road conditions (e.g. Heavy rain, fog, or high winds) providing “go / no go” criteria and contact details for the person(s) responsible for making the “go / no go” decisions;
- Truck loading and unloading procedures to avoid material or objects falling from the vehicle;
- Guidelines for wide or abnormal loads including offsite transport; and
- Systems to control mobile equipment use in the vicinity of overhead power lines.

The Traffic management Plan must be reviewed/revised where changes to the works areas require. A risk assessment must be carried out prior to any changes being made to traffic movements or road systems.

Designated walkways (both indoors and outdoors) must be provided for pedestrians, and pedestrians must make use of these walkways. Good lighting must be provided along all walkways, particularly at road junctions. Wherever possible, rigid barricading must be used to separate pedestrians from moving light vehicles and / or mobile equipment.

All personnel must be transported to site and must be dropped off at a designated area. Controls must be in place to ensure the safety of people working on roads, including those working on broken-down vehicles.

High visibility clothing must be worn at all times whilst on the project site. Speed limits and traffic rules must be reviewed regularly and must be rigorously enforced. Local traffic rules must be complied with at all times.

Pedestrians must give way to light vehicles and / or mobile equipment except at pedestrian crossings. All light vehicles and mobile equipment must give way to emergency vehicles. Pedestrians and light vehicle drivers must be made aware of the blind spots associated with mobile equipment.

The driver or operator of a light vehicle or item of mobile equipment must stop the vehicle or equipment and sound the horn before proceeding at blind corners, where his view of the path or intended path is obstructed, and when entering or leaving a building. Whenever a light vehicle or item of mobile equipment is stopped or parked, the handbrake (if applicable) must be applied.

No light vehicle or item of mobile equipment may be left unattended with the engine running or with a key in the ignition. No light vehicle or item of mobile equipment may be parked so as to cause an obstruction to any roadway, passage or access way. No light vehicle or item of mobile equipment may be parked within 50 metres of a loading or off-loading point.

All loads must be secure and must be within the load limit of the vehicle or equipment. A load must be properly secured before the vehicle or equipment is set in motion. Adequate precautions must be taken for any overhanging load. No unauthorised light vehicle or item of mobile equipment may enter a restricted area or building.

20.1 Light Vehicles

All Contractors must ensure that Light vehicles have the following minimum safety features:

- Fixed seats and suitable seat(safety) belts for all occupants (i.e. Driver and all passengers);
- Roll-over protection for all vehicles intended to be driven on dirt or steep roads;

- Cargo barriers and load restraints for all vehicles designed for carrying loads (other than passengers), or that are unable to have cargo separated from the occupant-carrying space of the vehicle; and
- An air bag on the driver's side, and where available as a manufacturer fitted item, a passenger's air bag;
- A Reverse Alarm.

All Contractors must ensure that Light vehicles that interact with mobile equipment are equipped or fitted with:

- Systems that enable positive communication with the equipment operators (e.g. A two-way radio);
- A high visibility flag (e.g. A whip flag or buggy whip);
- An amber flashing light (revolving or strobe);
- Reflective taping; and
- High visibility signage (i.e. Vehicle call numbers) facilitating easy and positive identification from a reasonable distance.

All Contractors must ensure that Light vehicles carry:

- Emergency roadside triangles or beacons (three of either);
- Chock blocks for preventing uncontrolled movement of the vehicle when parked;
- A flashlight;
- A fire extinguisher (2.5kg DCP);
- A first aid kit; and
- Survival or emergency equipment (e.g. a vehicle recovery kit) suitable for the operating environment.

A change management process must accompany all vehicle modifications, including the attachment of any equipment. Examples of changes or modifications include, but are not limited to, any change or modification:

- Made to the overall structure or design of the vehicle body;
- Made to the original manufacturer-fitted type of tyres or wheels;
- Made to the suspension system of the vehicle;
- Made to the mechanical system of the vehicle;
- That may adversely alter the centre of gravity of the vehicle;
- That alters the load carrying capacity of the vehicle; and

- That may affect the ability of the vehicle to withstand a crash (e.g. the fitment of a “bull bar”).

Vehicle selection must be based on a risk assessment where consideration is given to the tasks, the application, the environment, roll-over protection and the rating of sturdiness in the event of a crash.

All Contractors must have a formal inspection and preventative maintenance system in place to ensure that vehicles are maintained in a safe and roadworthy condition at all times and, as a minimum, are serviced in line with the vehicle manufacturer’s service schedule.

Should any safety critical feature be defective or damaged, the vehicle must be withdrawn from service until it has been fully repaired. Inspection and maintenance must be undertaken on critical features such as:

- Wheels and tyres (including the spare);
- Steering, suspension and braking systems;
- Seats and seat belts;
- Lights, indicators and reflectors;
- Windscreen and windows, including windscreen wipers and washers;
- The vehicle structure itself; and
- Other safety-related items on the vehicle body, chassis or engine, including instrumentation.

Persons may only be transported in vehicles equipped with manufacturer fitted or approved seats and seat belts. Seat belts must be worn by all occupants of a light vehicle (i.e. the driver and all passengers) at all times.

Only the driver and one passenger are permitted in the cab (front) of a light delivery vehicle. No personnel may be transported in the load-bin of a light delivery vehicle, even if the vehicle is fitted with a canopy. Only tools and equipment may be transported in the load-bin. Furthermore, no persons may be transported in a trailer behind a vehicle.

A pre-operation vehicle safety check and familiarisation system must be in place and must be used by the driver. An approved checklist must be used. All vehicle faults that are recorded must be attended to immediately.

Light vehicle running lights (low-beam headlights) must be switched on at all times when the vehicle is in operation.

All Contractors must have a system in place to ensure that drivers receive adequate training to ensure that the vehicle intended to be operated or driven can be operated or driven safely. As a minimum, training must include:

- Behaviour-based defensive driving principles;
- Vehicle familiarisation, taking into account the handling dynamics of the vehicle, maximum number of passengers, load limits and various features;
- Loading and restraining principles where the vehicle to be operated is designed for carrying cargo loads;
- Education and awareness concerning driving and travel risks that may be encountered within the environment where the vehicle may be operated or driven, and the requirements pertaining to traffic rules and speed limits;
- Securing (locking) equipment to prevent unauthorised use;
- Emergency crash and breakdown procedures; and
- Basic mechanical principles, including how to change a tyre and perform an adequate pre-operation check.

20.2 Mobile Equipment

All Contractors must ensure that Mobile equipment have the following minimum safety specifications:

- Fixed seats and seat belts for all occupants;
- Adequate lighting, including headlights, tail, turn and brake lights, and an amber flashing light (revolving or strobe);
- An identified isolation and lockout point;
- Adequate walkways, railings, steps and grab handle combinations, and boarding facilities including an alternative path of disembarking in the event of an emergency;
- Collision-avoidance technology and / or procedures;
- A reversing alarm or warning device;
- Chock blocks for preventing uncontrolled movement of rubber-tired equipment when parked;
- A horn;
- Effective windscreen wipers;

- Effective guarding on accessible moving parts;
- A speedometer (if the mobile equipment is capable of exceeding the lowest applicable speed limit);
- High visibility signage (i.e. Mobile equipment call numbers) facilitating easy and positive identification from a reasonable distance; and
- A security system to prevent unauthorised operation.

Mobile equipment must have the following minimum safety specifications, unless a risk assessment stipulates otherwise:

- Approved or certified roll-over protection;
- Fail-to-safe brakes;
- A fire detection and suppression system capable of being activated from both ground level and cabin level (for certain types of mobile equipment, a suitably sized fire extinguisher may be adequate);
- A non-handheld two-way radio or another form of communication;
- Falling object protection (a protective structure over the operator cabin);
- An enclosed and tight-sealing air-conditioned cabin with suitable protective glass; and
- A means of moving supplies and personal items into and out of the operator cabin that enables an operator to continuously maintain three points of contact while boarding and disembarking the equipment (e.g. A backpack or shoulder strap bag).

When purchasing or hiring equipment, the ergonomics of the cabin must be considered, specifically with regard to the seating, operator controls and retrofitted devices.

Fleet and control consistency must be considered in order to minimise the possibility of operator error when changing machines.

For all new (to site) and modified mobile equipment, a formal risk-based selection and acceptance process must be followed prior to the equipment being used on site. Selection of equipment, and any modification, must be subject to a rigorous change management process.

An inspection and maintenance programme must be in place for all mobile equipment. The pre-operation inspection must include a brake functionality test. Registers must be maintained and audited, and must be kept on the machine.

Procedures must be in place to ensure that mobile equipment is only operated on sufficiently stable surfaces and on gradients that are within the limits of safe operation.

Seat belts must be used in all cases, by all occupants. Apart from the driver or operator, only an appointed flagman may be transported in mobile equipment (with the exception of buses) and **only if** the equipment is fitted with a passenger seat. No passengers are permitted on a lift and carry crane (or mobi-lift), mobile crane, forklift, mobile elevating work platform (e.g. A cherry picker), tractor, dozer, dump truck, grader, excavator, loader, back-actor, drill rig, or similar.

Risk assessments must be carried out as part of the planning process for mobile equipment operations and associated activities, and must consider the following:

- Maintenance activities;
- Risks associated with loading, unloading, towing and recovering mobile equipment; and
- The risk of fire.

Procedures must be in place for the safe isolation and lockout of mobile equipment.

Where two or more items of mobile equipment must be operated in proximity to each other, or where an item of mobile equipment must be operated in proximity to persons on foot, a risk assessment involving all persons who will be working in the area must be conducted prior to the work commencing. The risk assessment must be approved by the nominated project management representative. In such a work area:

- No item of mobile equipment may be driven to within 5 metres of another item of mobile equipment without the operator first making eye contact with, and signalling his intentions to, the other operator who must acknowledge that he understands and that it is safe to proceed.
- No person on foot may work or be positioned within 5 metres of an item of mobile equipment that is in operation. Before approaching mobile equipment on foot, a person must make eye contact with, and clearly signal his intentions to, the operator of the equipment. The operator must cease to operate the equipment, and must indicate that he understands and that it is safe to approach.

In certain circumstances (determined through risk assessment), mobile equipment may only move and operate with dedicated flagmen in place:

- Where flagmen are used, it must be ensured that the flagmen, mobile equipment operators, and all other personnel working in the vicinity of the mobile equipment, receive suitable training with regard to signals and signalling to ensure effective communication. The training must be formal and recorded, and competency must be tested.
- A flagman and the mobile equipment operator that he is directing must maintain eye contact. The flagman must never position himself where the equipment operator cannot see him.
- Should a mobile equipment operator lose sight of his flagman, he must stop his activities immediately until contact has been re-established.

A tyre management system must be in place to address issues including fire, heating, explosion, electrical contact, separations, maintenance, tyre changes, etc.

Operators must report conditions and practices that do not conform to procedure.

20.3 Training and Licensing

No person may drive a light vehicle or operate an item of mobile equipment unless he has been trained, tested and found competent, or is currently licensed to drive or operate that specific vehicle or item of equipment. The training must address hazards and risks assessed for that specific vehicle; and the tasks for which it is to be used.

No person may be appointed to drive a light vehicle or operate an item of mobile equipment unless he is in possession of a valid medical certificate of fitness (issued by an occupational medical practitioner).

Each person required to drive a light vehicle or operate an item of mobile equipment on the project site must have a project-specific site licence or appointment to drive or operate that vehicle or item of equipment.

The Contractor must ensure that Licenses and Operators' competency certificates are valid for the duration of their activities on site. No training of drivers or operators may be carried out on site unless authorised by a nominated project management representative.

20.4 Tyre and Rim Safety

These requirements apply to tyres and rims with a rim diameter of 60cm (24 inches) or greater. Safe Work Procedures must be in place for all tyre maintenance and servicing activities and for tyre fire emergency response.

In the event of a tyre fire, an exclusion zone of 300 metres must be established and may only be accessed by emergency services personnel who are shielded while fighting the fire.

Restricted Work Zones must be established for tyre installation, removal and handling processes.

All tyre and rim handling equipment must have fall back prevention in place prior to anyone entering the Restricted Work Zone.

No hot work (e.g. Welding or cutting) may be carried out on a rim (wheel) while the rim is fitted with a tyre – whether inflated or deflated. A periodic testing and / or inspection regime must be in place for tyres, rims (wheels), and assemblies.

All tyres and rims (wheels) must be made unserviceable when deemed unfit for service or before being sent off site for disposal. A tracking system must be in place to track the lifecycle of tyres and rims (wheels).

21. Access Road to Project Site

The contractor shall ensure that trained flagman are placed at strategic positions that may be identified along the access roads where high risk activities are being undertaken and/or at points of traffic interface.

The project access roads may not be closed without permission from a nominated project management representative.

22. Signs and Notices

The contractor must ensure that all required safety signs and notices are prominently displayed in accordance with the applicable legislation and good safety practice. Signs and notices must be in English as well as any other language(s) commonly spoken on the project site.

All symbolic signs must comply with the applicable national standards. No person may deface or damage any safety sign or notice. No person may remove or alter any safety sign or notice unless authorised to do so.

23. Machinery

The contractor must ensure that all plant and equipment brought onto the site is:

- Appropriate for the type of work to be performed.
- Approved, inspected, tested, numbered and tagged (if appropriate) before being brought onto site.
- Properly maintained in accordance with the manufacturer's recommendations; and
- Placed on a register and checked at least once per month or as required by the applicable legislation.

Items of plant or equipment brought onto site by the contractor or his sub-contractors may be inspected by a nominated project management representative. Should the nominated project management representative determine that any item is inadequate, faulty, unsafe or in any other way unsuitable for the safe and satisfactory execution of the work for which it is intended, the contractor must, on instruction from the nominated project management representative, immediately remove the item from the site and replace it with a safe and adequate substitute.

24. Barricading

All applicable legislation concerning barricading must be complied with at all times.

Each contractor required to erect barricading on the project site(s) must develop, document and implement Safe Work Procedures that are aligned with the requirements of this standard.

Barricading must be erected to:

- Prevent persons from making contact with an identified hazard;
- Provide warning of the existence of a hazard;
- Prevent unauthorised access (by people, vehicles and mobile equipment) into an area where a hazard exists or where a hazardous activity is being carried out;
- Define the boundaries of a hazardous location and / or restricted area; and
- Allow a work team to perform hazardous tasks without persons unfamiliar with the hazard(s) accessing the area.

Although not limited to these situations, barricading must be erected or installed:

- Around excavations (trenches, pits, etc.);
- To protect openings and edges (to prevent persons from falling, all openings and edges associated with floors, stairs, and the open sides of buildings and structures

during the course of construction must be protected by sturdy, rigid barriers capable of withstanding a force of at least 110 kilograms applied in any direction at any point);

- To prevent access into areas where overhead work is in progress;
- To route vehicles safely through (or around) construction areas; and
- To protect members of the public who may be in the vicinity of a work or construction site (by preventing access).

In all cases, the erection of barricading must be a temporary measure. It must only remain in place until the hazard is eliminated or the potentially dangerous situation is rectified.

A barricade must present a sturdy physical barrier to entering an area. Therefore, plastic cones, post and chain systems, "danger tape" and "snow netting" will not be accepted as barricading and may only be used for the purposes of low risk demarcation.

For example, snow netting may be used for the demarcation of lay down areas.

Acceptable forms of barricading include:

- Hoarding panels (no less than one metre in height) that can be securely fastened together to form a fence line may be used. Hoarding panels may be constructed from a variety of materials (e.g. wooden board, steel sheeting, wire mesh on a steel frame, etc.)
- Wire mesh fencing (no less than one metre in height with sturdy posts spaced at intervals of no more than 3 metres) may be used in certain circumstances, e.g. Around excavations.
- Sturdy, rigid, and securely fixed (i.e. bolted, welded, clamped, etc.) metal guard rails may be used, particularly for protecting openings, holes and edges associated with floors, platforms, walkways, etc. The top rail must be positioned at a height of one metre above the working surface, and a mid-rail must be provided.
- Concrete Jersey barriers must be used for the routing of traffic and when work is being conducted in or alongside a roadway.

Regardless of the type of barricade used, the following requirements must be met:

- The installation, alteration and removal of barricades must be supervised by a competent person;
- The barricading must be uniformly and intelligently configured;
- The barricading must be stable, conspicuous and effective;
- The barricading must completely surround the work or hazardous area;

- General access requirements around the work or hazardous area (such as pedestrian walkways, operational access, or general thoroughfares) must be taken into consideration when erecting a barricade;
- The extent of the area that is barricaded must be kept to a minimum so as not to unnecessarily restrict access to other areas. If access routes to other areas are blocked by the barricade, alternative routes must be identified and signposted.
- All barricaded areas must have properly designated points of entry and exit for persons and / or vehicles. Each pedestrian access point must be fitted with a self-closing gate. A sign indicating, "DESIGNATED ACCESS POINT – AUTHORISED PERSONNEL ONLY", must be fitted to each gate;
- Additional signage providing warning of specific hazards (e.g. falling objects, electricity, etc.) Including, "NO UNAUTHORISED ENTRY", must be attached to all gates and, where required, to the barricading itself. The signage must be visible from all angles and must be large enough to be read from a distance of 10 metres;
- Barricading must be clearly visible at all times (day and night). If necessary, flashing warning lights must be used;
- Tags must be attached to the barricading displaying the name and cell phone number of the person responsible for the barricade, and specifying the reason for the barricading and the date on which it is scheduled to be removed;
- Should a person require access to a barricaded area, authorisation must be obtained from the person responsible for the erection of the barricade. The hazards that are present and the Personal Protective Equipment that must be worn within the barricaded area must be communicated to the person seeking access;
- Each barricade must be listed in a register, and each must be inspected daily to ensure that it is still intact and that its positioning is still effective;
- All barricades must be properly maintained and repaired as required;
- When the work has been completed and the hazard has been eliminated, all barricading must be removed without delay. A barricade may not be left in place if no hazard exists;
- Before a barricade is removed (allowing general access), the area must be inspected by the person responsible for the work that was carried out, to ensure that the area is once again safe. If applicable, the person accepting the area back for general use shall do so on completion of his own safety inspection;
- Authorisation to remove (or modify) a barricade may only be granted by the person responsible for the erection of the barricade.

25. Excavations

Excavation work or activities which are required as part of the scope shall be undertaken in accordance with the requirements of this Specification as well as all applicable legislation concerning excavation work.

The contractor will be required to develop, document and implement Safe Work Procedures that are aligned with the requirements of this standard. All excavation work must be properly planned. Site-specific conditions and hazards must be considered, including traffic, overhead and buried utilities, proximity to nearby structures, soil properties, presence of surface and / or ground water, position of the water table, and weather conditions.

Excavation work may only be carried out under the personal supervision of a competent Excavation Supervisor who has been appointed in writing.

Before any excavation work is carried out, a Permit to Work authorising the activities will be issued. Similarly, no person may enter an excavation unless a Permit to Work has been issued providing authorisation for specific tasks to be carried out within the excavation.

Before issuing a Permit to Work for excavation works, the Authorised Person (i.e. Permit issuer) must verify that:

- A detailed Risk Assessment has been conducted for the work to be performed;
- A Safe Work Procedure is in place; and
- No buried services are present in the area where the excavation works are to be carried out.

As a minimum, the Risk Assessment must consider hazards and risks associated with:

- A person being trapped or buried as a result of an excavation collapsing;
- A person being struck by an object falling into an excavation;
- A person falling into an excavation;
- A person being exposed to a hazardous atmosphere within an excavation (i.e. An oxygen deficiency, explosive or flammable gases, and / or harmful concentrations of a contaminant);
- Contact with belowground services; and
- Mobile equipment and / or light vehicle movement in proximity to an excavation.

If buried services are identified (or are suspected to be present) then the safe work procedure must be altered if necessary to avoid these services. Machinery may not be used to excavate material lying within one metre of any belowground service (i.e. Cable or pipe).

Excavation work that is carried out must be limited to what is described in the Permit to Work. All controls, precautions and restrictions identified in the Permit to Work (and Risk Assessment) must be strictly observed and fully implemented. The Excavation Supervisor must discuss these controls, precautions and restrictions with all persons who will be carrying out the work. All excavation work must be carried out by persons who have been trained and are competent to perform the work.

All material removed from an excavation (spoil) must be placed no closer than three times the depth of the excavation away from the edges of the excavation. The profile of this spoil must be flattened out to prevent the material from being washed back into the excavation by rain water.

Scaling must be carried out on the sides of all excavations to remove loose material.

Tools, equipment and materials may not be placed within two metres of the edges of an excavation. Alternatively, a suitable retaining device may be used to prevent tools, equipment and materials from falling, rolling or sliding into an excavation.

To prevent persons and / or mobile equipment from accidentally falling into an excavation and to prevent unauthorised entry into an excavation, rigid barricading must be erected around every excavation that is deeper than 500mm. Warning signage must be prominently displayed and, if necessary, flashing warning lights must be used at night.

The barricading must remain in place for as long as the hazard (i.e. the excavation) exists. Sections of barricading around an excavation may only be removed (and then only temporarily) to enable excavation work to continue.

If equipment is used to prevent water from entering an excavation or to prevent water accumulation within an excavation, then the equipment must be monitored by a competent person to ensure that it remains operational and effective.

A high standard of housekeeping must be maintained in and around all excavations. Tools that are not in use, and materials that are no longer required, must be removed from an

excavation to prevent these items from causing injury or being lost (buried). A register of all excavations must be compiled and maintained.

An excavation must be inspected for collapses, signs of instability, failures or signs of overloading of protective systems and equipment, hazardous atmospheres, water accumulation, and any other hazardous condition that may arise.

If a hazardous condition is identified, no person may enter the excavation until suitable corrective actions have been taken and / or suitable controls have been put in place to either eliminate the hazard or reduce the risks to acceptable levels. If a hazardous condition is identified while work is being carried out in an excavation, then all persons in the excavation must be evacuated to safety without delay.

A record of each inspection (including date, time, findings, and signature of the Excavation Supervisor who carried out the inspection) must be captured in the excavations register. Each inspection record must include a declaration as to whether the excavation is safe to work in or not. All excavations must be monitored closely throughout each work day (or shift) by the Excavation Supervisor.

Excavations must be backfilled as soon as possible, and the material used (usually the original material) must be properly compacted.

26. Cranes and Lifting Equipment

All applicable legislation concerning cranes and lifting equipment must be complied with at all times. Each contractor carrying out lifting operations on the project site(s) must develop, document and implement Safe Work Procedures that are aligned with the requirements of this Specification.

26.1 Design, Manufacturing and Safety Features

Before any crane or hoist is operated on the project premises (i.e. New to site), it must be formally accepted (authorised) by the nominated project management representative. The acceptance process must be based on an inspection and risk assessment, and must take the crane's or hoist's safety features and cabin ergonomics (if applicable) into account. The same process must be followed before any crane or hoist is returned to service following any modification or repair.

Note: An Equipment Profile (dossier) must be compiled for each crane.

As a minimum, the design and manufacturing of each crane or hoist used on the project premises must comply with the requirements of the relevant ISO standard. The Safe Working Load (SWL) must be clearly indicated on each crane, hoist, and item of lifting equipment.

If the safe working load (rated capacity) of a crane varies with the conditions of use (i.e. varies with the angle of the boom and the boom length) then the manufacturer's load chart(s) indicating the crane's rated capacity at various boom lengths and angles must be available in the crane cabin. If the crane has a single load chart, it must be displayed in a position visible to the crane operator. If the crane has numerous load charts, they must be easily accessible to the operator.

For each crane or hoist, the manufacturer's operating manual must be available to the operator.

The load chart(s) and operating manual for a crane or hoist must be in a language understood by the operator.

All lifting hooks must be fitted with a safety latch to prevent the load from accidentally detaching.

Each crane or hoist must be fitted with a load cell (with the mass of the load displayed in the visual range of the operator) and a load limiting device to prevent the crane or hoist from being operated outside of its safe working limits.

Where practicable, each crane must be equipped with an upper hoist limit switch (or anti two-block device) to prevent the hook block from colliding with the drum, and a lower hoist limit switch to prevent the rope on the drum from unwinding completely. These systems must provide both a visual and an audible alarm to the operator.

Under no circumstances may any limit switch or warning device be bypassed, disconnected, or adjusted in order to lift a load higher (or to lower a load lower) than the respective switches allow. Limit switches MAY NOT be adjusted to stop the hoist at a particular height under normal operating conditions – these are safety devices, and as such, should not be used as operating tools.

Under no circumstances may a load limiting device be bypassed or disconnected in order to lift a load that exceeds the rated capacity of the crane. Load limiting devices MAY NOT be used to “measure” or “test” the mass of a load.

For a vehicle-mounted crane, the operator control station must be located in a position protected from swinging loads and from the crane jib.

A fall protection system must be provided for the assembly, dismantling, operation, maintenance and inspection of any crane where falling from height is identified as a hazard.

Each crane should be fitted with a stability monitoring device to prevent it from toppling over.

Only items of lifting equipment (tackle) that have been designed and manufactured with adequate factors of safety may be used on site. The following minimum factors of safety (with respect to the Safe Working Load) must be met:

- Ten (10) for natural-fibre ropes;
- Six (6) for synthetic-fibre ropes or woven webbing;
- Six (6) for steel-wire ropes;
- Five (5) for steel chains; and
- Four (4) for high-tensile or alloy steel chains.

26.2 Planning and Risk Assessment

For each critical lift that must be carried out on site, a documented and detailed lift plan and risk assessment must be prepared to address all associated hazards.

Only suitably qualified, competent and experienced persons (lift planners) may evaluate critical lifts and prepare lift plans.

The lifting supervisor, crane operators, riggers and spotters responsible for carrying out a critical lift must have input into the lift plan and risk assessment and must be consulted before these documents are finalised.

All lift planners, lifting supervisors, crane operators, riggers and spotters (safety observers) must be appointed in writing. No critical lift may commence until the lift plan and risk assessment have been authorised by the nominated project management representative and a Permit to Work has been issued.

Critical lifts include, but not limited to:

- All multiple (including dual) crane lifts;
- Lifts where the operational arcs of two or more cranes can overlap;
- Lifts over operating facilities where this may endanger personnel;
- Lifts over or adjacent to power lines;
- Any lift carried out in close proximity to equipment or a vessel containing a flammable or toxic substance;
- Lifts where the centre of gravity of the load could change;
- Any lift where the total weight on the hook exceeds 20 tonnes;
- Lifts near the rated capacity of the crane (i.e. Exceeding 85% of the rated capacity at the working radius);
- Any lift when the wind speed (including gusting) exceeds 30 kilometres per hour;
- Lifts involving a man basket (safety cage);
- Lifts to and from water;
- Lifts requiring specialised equipment or involving complicated lifting or rigging configurations;
- Lifts requiring non-standard rigging or slinging techniques;
- Lifts involving the simultaneous use of more than one hoist on the same crane; and
- Any other lift deemed to be critical by the nominated project management representative, or assessed as critical during a risk assessment.

The lift plan for a critical lift must include as a minimum:

- General Information – crane manufacturer, crane model, items to be lifted, and reason for lift;
- Lift Data – load weight, lifting block and hook weight, hoist rope weight, rigging weight, total weight, height of lift, radius of lift, surface area of load, and centre of gravity of load;
- Rigging Data – sling material (chain, wire rope, or synthetic), sling diameter, sling length, sling configuration, sling capacity, hook type, shackle size and capacity;
- Lift Computation – boom length, jib length, radius of lift, crane capacity as configured, size of outrigger footplates, and wind speed;

- Proximity to Power Lines and Process Areas – mobile cranes working in proximity to energised power lines must operate under a Permit to Work, which must define exclusion zones and spotter duties;
- Local Hazards and Controls – including the route for the crane, ground stability, proximity of people or equipment, and agreed communication method; and
- Diagrams (sketches) – a rigging diagram, and a crane set-up diagram illustrating the positioning of the crane(s) in relation to surrounding structures and the initial and final positions of the load (including crane boom movement).

Lifts that are not subject to detailed lift plans (i.e. Lifts that are not considered critical) must nevertheless be subject to a risk assessment, and be properly planned and executed.

The use of a crane-suspended man basket (safety cage) may only be considered when all other avenues to safely perform the work (e.g. Scaffolding, mobile elevating work platform, etc.) have been exhausted.

Cranes used to lift or suspend personnel must be approved as suitable for this purpose. If a crane must be operated in proximity to energised overhead power lines (or any other exposed electrical conductors) then minimum clearance distances (specified by the electrical power utility or the nominated project management representative) must be observed. Whenever possible, power lines must be de-energised and isolated while lifting operations are carried out.

26.3 Operation

At the start of every day or shift, the operator of a crane or hoist must carry out a pre-operation safety check using a prescribed checklist.

As a minimum, the pre-operation safety check must include:

- A thorough visual inspection of all wire ropes, chains, hooks and safety latches, hook blocks, sheaves, hydraulic hoses, electrical cables, and the general condition of the crane or hoist;
- Checks to confirm the serviceability of the operating controls;
- Tests to confirm the correct operation of all limit switches, emergency shutdowns, load indicators, alarms and other safety devices; and
- A thorough visual inspection of all lifting equipment (tackle) to be used.

The operator must:

- Check for any loose or missing parts;
- Make sure that the wire rope (or chain) of the hoist is properly seated in its drum and sheave grooves without any slack or overlapping;
- Operate each control to make sure it functions properly, releases immediately, and does not stick. Each control must be labelled to indicate its function;
- Listen for any unusual mechanical noises and look for any jerky movements while operating the crane and / or hoist several feet in each direction that it travels;
- Check the functionality of the upper and lower hoist limit switches (if applicable) by slowly raising and then lowering the block to trip the respective switches;
- Check all hooks. Hooks must not be cracked, stretched, bent or twisted. Each hook must have a safety latch that automatically closes the throat of the hook. If the latch is bent, has a broken spring, or is otherwise damaged, it must be repaired before use. Hooks must rotate freely in the block assembly without any “grinding” felt or heard;
- Check the wire rope by lowering the block to its lowest level and looking for the following signs of damage:
 - Reduced rope diameter. This may indicate that the rope has been stretched, has lost its inner core support, or has worn outside wires;
 - Broken wire strands (any number);
 - Kinked, crushed, cut, or “bird caged” wiring, or wiring with heat damage.
- Check all chains for damage including wear at contact points, cracks, or distorted links (bent, twisted or stretched). All mechanical coupling links must be inspected to ensure that the linking pins are secure and in good condition. The capacity rating of each chain must be adequate for the load and the attachment method;
- Check the condition and capacity of wire rope and synthetic web slings. Capacity ratings must be legible on the manufacturer’s label. The capacity of the sling being used must be adequate for the load and the attachment method. A sling must be replaced immediately if it is excessively worn.

The operator must report any fault, defect or damage to his supervisor immediately. A crane or hoist must not be operated if any safety device is out of order or defective, or if any rope, chain, hook or other component is worn or damaged.

Completed checklists must be made available (on request) for inspection by the nominated project management representative. Wherever possible, these checklists must be kept with the crane or hoist.

All lifting operations must be supervised by suitably qualified, competent and experienced supervisors.

An effective method of communication between the crane operator and those assisting with the lift must be in place. This must be documented and approved by the nominated project management representative.

Documented Safe Work Procedures must be in place to ensure the following:

- Access into an area where lifting operations are being carried out must be restricted. Such an area (i.e. where there is a risk of a load falling and striking a person) must be barricaded and only authorised persons may enter (i.e. those directly involved with the lifting operations). Warning signage must be conspicuously displayed;
- Where a load is being moved from one location to another (i.e. The lifting operations are not being carried out in a discrete area that can be barricaded), measures must be taken to ensure that all persons in the path of the suspended load are made aware of the approaching hazard and that they move, and remain, well clear of it. All persons potentially affected must be given warning before the load is lifted;
- A lift must be directed and controlled by a single person (a suitably qualified, competent and experienced rigger);
- Dedicated spotters must be in place during lifting operations to observe and provide warning (if necessary) to prevent incidents and ensure that safety protocols are adhered to;
- Before commencing with a lift, it must be verified that the load being lifted is both within the rated capacity of the crane (or hoist) and lifting equipment and within the limits set out in the lift plan and / or risk assessment. The rated load capacities of the crane, hoist, rope, chains, slings or other components may never be exceeded;
- Only certified lifting equipment (tackle) may be used to lift a load;
- No equipment (tackle) that has been used for towing may be used for lifting operations;
- Only an approved material box (skip box) may be used for lifting loose items or materials;

- Before commencing with a lift, it must be verified that no safety devices (including load limiting devices) have been bypassed, overridden or disconnected;
- To prevent the load from swinging as it is lifted, the hoist must be centred over the load (when using slings or chains) or positioned directly above the lifting point of the load;
- Hoisting ropes must be kept vertical. No side loading of a crane boom is permitted (i.e. A crane may not be used to make a side pull);
- Two full wraps of rope must remain on the hoisting drum at all times. If a lower hoist limit switch has been fitted, and it is working correctly, it should not be possible to lower the block below the point where less than two full wraps of rope are on the drum;
- Before commencing with a lift, it must be verified that all rigging connections are correct and secure. Slings, chains, or other lifting devices must be fully and securely seated in the saddle of the hook;
- Slack must be removed from the slings, chains and / or hoisting ropes before lifting the load. It must be ensured that multiple lines are not twisted around each other and that the hoist rope is not wrapped around the load;
- To ensure that the load is properly secured and balanced, it must initially only be lifted a few centimetres. Slings must be repositioned if required;
- Before moving a suspended load, it must be lifted high enough to clear all obstructions. The load must only be lifted to the height necessary to clear obstructions, and no higher;
- Directional movement must be made smoothly and deliberately (there must be no sudden acceleration or deceleration of the moving load). Abrupt, jerky movements of the load in any direction must be avoided;
- Tag lines must be used in situations where a load needs to be steadied or guided while suspended;
- When using tag lines to steady or guide a suspended load that is being moved using a mobile crane, personnel on foot must remain in sight of and in communication with the crane operator at all times, must never walk between the crane and the load, and must remain clear of the load and the crane at all times (at least 5 metres). The load must be moved at a slow walking speed;
- A suspended load must be monitored closely at all times;

- If a crane operator's view of a suspended load is unavoidably obscured (completely or partially), or if a suspended load is unavoidably obscuring (completely or partially) a crane operator's view, then suitably positioned spotters must be in place to provide guidance to the crane operator;
- A load MAY NOT be moved over, or be suspended above, any person or any occupied building. No person may walk beneath, or position himself below, a suspended load;
- No person may pass or work beneath the boom of a crane;
- No person may be positioned between a suspended load and a solid object where there is a risk of being crushed should the load swing;
- No person may be positioned within the radius of the boom of a crane unless directly involved with the lift;
- Under no circumstances may any person ride on a crane's hook or on a load;
- No load may be left suspended unless the operator is at the controls and is monitoring the load. In such a situation, the load must be kept as close as possible to the ground or floor to minimise the possibility of injury should the load drop;
- The controls of a crane or hoist may never be left unattended while a load is suspended. If it becomes necessary to leave the controls, the operator must lower the load to the ground or floor;
- With the exception of pick-up and carry operations, no lifting may be carried out using a mobile crane unless the outriggers have been deployed and are locked in position;
- Load spreaders or packing under the outriggers must be used irrespective of the underfoot conditions;
- Before a mobile crane is moved into position to carry out a lift, the area must be inspected by a suitably qualified person who must verify that the underfoot conditions are satisfactory;
- When using a mobile crane, slewing to test the effectiveness of the outriggers must be carried out prior to commencing with a lift;
- Slew pins must be securely in place while a mobile crane is travelling;
- Unauthorised use of a crane or hoist must be prevented by removing the keys, locking the cabin, isolating the controls, etc. When lifting operations have been completed;
- When not in use, lifting equipment must be stored off the ground and must be protected from the elements (rain, harsh sunlight, etc.) And contamination (dust, solvents and other chemicals) in order to prevent damage and / or deterioration.

A crane or hoist or an item of lifting equipment may only be used for the purposes for which it was designed.

26.4 Inspection, Testing and Maintenance

Any crane or hoist brought onto the project premises must have a current test certificate and record of inspection as well as a suitable checklist (derived from the crane or hoist manufacturer's inspection recommendations) for use by the operator(s) when carrying out pre-operation safety checks.

An Equipment Profile (dossier) must be compiled for each crane. A register of all cranes, hoists and lifting equipment (tackle) brought onto the project premises must be compiled and maintained.

Each crane, hoist and item of lifting equipment must have a unique identification code or number, which must be referenced in the register.

For each crane, hoist and item of lifting equipment, the following documentation must be kept on site and must be made available (on request) to the nominated project management representative for inspection:

- Test records and certificates;
- Inspection records;
- Maintenance records; and
- Details of any modifications or repairs made.

All cranes, hoists and lifting equipment must be inspected, tested and confirmed fit for purpose (i.e. Safe for use):

- Before being operated or put into service;
- Before being returned to service following any repair or modification; and
- Periodically as follows (unless local regulations require examination more frequently):
 - Each crane or hoist (including all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices that form an integral part of the crane or hoist) must be thoroughly examined by a competent, experienced and appointed person every 6 months;
 - Each crane or hoist must be subjected to an annual performance test (i.e. A load test) by a competent, experienced and appointed person; and
 - All lifting equipment (tackle) must be thoroughly inspected by a competent, experienced and appointed person every 3 months.

- The system of inspection and testing must provide verification that each crane or hoist is able to function to its design specifications, and must verify the integrity of:
 - Mechanical and electrical components;
 - Controls;
 - Cables and all lifting attachments;
 - Structural components including boom, hoist, brakes, wheels, hooks, baskets, outriggers, hook-blocks and rails; and
 - Load limiting devices, hoist limit switches, alarms or warning devices, and other safety devices and control systems (including independent fail-safe braking systems, devices to stop the crane or hoist such as a dead man's switch, and emergency shut-off switches).

A preventative maintenance system must be in place to ensure that all cranes and hoists are maintained in a safe and serviceable condition.

For any crane or hoist, all inspections, testing, maintenance and repairs must, as a minimum, be carried out in compliance with the requirements and specifications of the manufacturer as well as all applicable regulatory requirements (in terms of both the frequency of inspection, testing and maintenance, and the physical condition of the crane or hoist).

Repairs to a crane or hoist may only be carried out by competent persons. After repairs have been made, the crane or hoist must be tested and recertified fit for purpose (unless the repairs did not affect the integrity of the lifting mechanism).

Any modification to a crane or hoist must be subject to the approval of the original equipment manufacturer and a rigorous change management process. Each item of lifting equipment (tackle) must be tagged following each quarterly (3-monthly) inspection. Details of these inspections must be recorded in the lifting equipment register which must be made available to the nominated project management representative on request.

The following colour coding system must be used for the tagging of all lifting equipment:

Table 27-1 colour coding system for lifting equipment

Quarter	Tag colour
January – march	Blue
April – June	Red
July – September	Green
October – December	Yellow

The tag placed on an item of lifting equipment must be traceable to an entry in the lifting equipment register where the following information concerning the inspection of that item of equipment must be recorded:

- Item description;
- Unique item identification code or number;
- Item owner;
- Item location;
- Date of inspection;
- Name and signature of competent person who carried out the inspection; and
- Any comments concerning the inspection.

Any item of lifting equipment that is found to be damaged or defective must be removed from service (and tagged, “out of service”) immediately and must then either be repaired and recertified (if possible) or destroyed to prevent further use. Similarly, any lifting equipment that is known (or is suspected) to have been overloaded must be removed from service immediately and destroyed to prevent further use.

If an item of lifting equipment is removed from service or destroyed (scrapped), this must be indicated in the lifting equipment register. Any item of lifting equipment without a tag or with an out-of-date inspection may not be used.

26.5 Training and Competency

Only suitably trained, competent and experienced persons who have been authorised in writing by the contractor’s project manager are permitted to:

- Evaluate and plan critical lifts;
- Supervise lifting operations;

- Operate cranes and hoists;
- Use lifting equipment, and rig (sling) loads;
- Provide signals for controlling lifts; and
- Inspect, maintain or test cranes, hoists and lifting equipment.

Each operator must meet the competency requirements for the particular class or type of crane or hoist to be operated. Depending on the project location and applicable legislation, operators may need to hold a certificate of competency issued by a recognised training institution.

27. Working at Heights

All applicable legislation concerning work performed from an elevated position must be complied with at all times. Fall prevention or fall protection measures must be in place whenever the potential exists for a person to fall.

27.1.1 Work Platforms

Wherever practical, a safe working area must be provided in the form of a work platform with fixed edge protection. This may include:

- a permanent work platform or walkway (i.e. A fixed steel structure);
- a fixed or mobile scaffold; or
- an elevating work platform such as a scissor lift, man lift, boom lift or cherry picker.

All work platforms and walkways elevated one metre or more must have complete floors, and edge protection must be in place in the form of toe boards and sturdy guard rails properly secured (i.e. bolted, welded, clamped, etc.) to prevent accidental displacement. Safe means of access and egress must be provided.

Guard rails must be capable of withstanding a force of at least 100 kilograms applied in any direction at any point. The top rail must be positioned at a height of one metre above the working surface, and a mid-rail must be provided.

27.1.2 Floor openings, holes and edges

Any opening or hole (temporary or permanent) in a floor, platform or walkway must be protected by sturdy guard rails (removable if required) or a cover to prevent a person from stepping into or falling through the gap. Covers must be strong enough to support the loads that will be imposed on them and must be secured to prevent accidental displacement.

Ladder way floor openings and platforms must be protected by guard rails of standard construction and toe boards must be fitted along all edges, except at the entrance to an opening where a gate must be installed and so arranged that a person cannot walk directly into the opening.

When open, hatchways and floor openings must be protected by removable guard rails and toe boards of standard construction. When these openings are not in use, covers of adequate strength must be put in place and must be secured to prevent accidental displacement.

Where doors or gates open directly onto a stairway, a platform must be provided and the swing of the door or gate must not reduce the effective width of the platform to less than 500mm.

27.1.3 Fall Protection

Whenever there is a risk of falling onto dangerous equipment or machinery, or whenever work must be carried out near an opening through which (or an edge over which) a person could fall, no work may commence unless:

- A fall protection (and rescue) plan is in place (prepared by a competent person, approved by the nominated project management representative, and implemented by the contractor);
- A detailed task-specific risk assessment has been carried out;
- A safe work procedure is in place for the task to be performed;
- A permit to work has been obtained; and
- Each person has been provided with suitable fall protection equipment.

Fall protection equipment (either fall restraint or fall arrest equipment) must be used at all times whilst the work is being carried out. To prevent persons from falling, fall restraint equipment must be used whenever work must be carried out within an opening through which (or an edge over which) a person could fall.

Fall arrest equipment must be used whenever the potential exists for a person to fall. A person has been provided with suitable fall protection equipment if he is secured by means of an approved full body harness (well fitted) with two shock absorbing lanyards or an inertia reel (when fall arrest equipment is required) or two short restraining lanyards (when fall restraint equipment is required), double or triple action snap hooks (or karabiner type rings), and secure anchorage points (a person's lanyard may be attached either directly to an anchorage point or indirectly through the use of a variety of systems that incorporate a lifeline).

A dual lanyard system must be used to ensure that at least one connection point is maintained at all times.

Note: When selecting fall arrest equipment, care must be taken to ensure that the potential fall distance is greater than the height of the person plus the length of the lanyard with its shock absorber deployed (taking the height of attachment into account).

Anchorage points must, where practical, be above the head of the person, and must ensure that in the event of a fall the person will neither swing nor touch the ground. All permanent anchorage points must be designed and approved by a professional structural engineer.

All anchorage points must be periodically inspected and tested by a competent person to ensure that they are secure and can support the required load. A system must be in place to identify anchorage points as authorised for use. Temporary anchorage points (and lifeline systems) may only be used if a competent person has certified them safe to use.

If an elevating work platform is used, such equipment must be fitted with a fixed anchorage point for the attachment of fall protection equipment.

The use of fall protection (fall restraint or fall arrest) systems must be avoided wherever and whenever possible through design, the installation of physical barriers that protect persons from falling, and employing alternative methods of working. Only if physical barriers protecting against free falls cannot be installed must fall protection equipment be used.

Fall protection (fall restraint or fall arrest) systems are items of personal protective equipment and, if required, must be purchased, installed and provided to employees. Prior to commencing with any work at height, an assessment must be conducted to determine if the work requires the use of fall protection equipment, and if so, which fall protection system is the most appropriate for the work.

There must be a system for ensuring that fall protection equipment is:

- Tested and certified for use;
- Inspected by the user before use; and
- Destroyed following a fall or where inspection has shown evidence of excessive wear or mechanical malfunction.

All persons that are required to work at height (in order to carry out routine or non-routine tasks) must first be trained and certified competent to do so. Furthermore, each person must be in possession of a valid medical certificate of fitness specifically indicating that the person is fit to work at height.

All persons required to use personal fall protection equipment must be trained and certified competent in the correct selection, use, maintenance and inspection of such equipment.

All fall protection equipment must be thoroughly inspected visually prior to use and on a monthly basis thereafter by competent persons appointed in writing and each item of equipment must be tagged to show when it was last inspected. All inspections must be recorded in a register. On finding defective or damaged equipment, appropriate action must be taken by the competent person (i.e. the destruction of the equipment to prevent further use).

Persons making use of personal fall protection equipment must do so in strict accordance with the instructions or requirements specified by the manufacturer or supplier of the equipment or system. Specific pre-use inspection, maintenance and fitting protocols must

be established in accordance with the manufacturer's requirements or guidelines and these protocols must be followed by all users of the fall protection equipment.

Solvents may not be used to clean fall protection equipment. Only manufacturer-approved cleaning solutions may be used.

No person required to use personal fall protection equipment may work in isolation (a minimum of two persons working together is required). Competent supervision must be in place at all times for all work carried out at height. Supervisors must be appointed in writing.

Emergency response (rescue) procedures for the rapid retrieval of suspended persons in the event of a fall from height must be prepared and tested.

Note: Even though there is no risk of free fall, fall protection equipment may be required in situations where there is a risk of falling, slipping or sliding down a slope of more than 45 degrees.

Note: The maximum service life of fall protection equipment manufactured of synthetic fibre shall be 5 years from the date of first use and / or manufacture unless otherwise specified by the manufacturer.

A person may climb or descend a ladder without fall protection provided that he is able to use both hands and legs to do so, faces the ladder, and uses one step at a time. The ladder must be tied off or supported at its base.

Prior to any roof work being performed, or prior to persons accessing a roof, a structural engineer must verify that the roof is of sound construction and that it is capable of supporting the weight of the persons as well as any equipment that may be required. Should the engineer's findings be to the contrary, alternative methods of performing the work must be found. Particular care must be taken when work is carried out on an asbestos cement roof or a fibreglass roof.

27.1.4 Risk Assessment and Permitting

The following documentation is required for any work where fall protection is required (i.e. where a risk of falling exists):

- A Fall Protection (and Rescue) Plan;
- A Risk Assessment for the task to be performed;
- A Safe Work Procedure for the task to be performed; and
- A Permit to Work.

As part of the Risk Assessment and planning processes, the following must be considered, but not limited to:

- Hazards relating to accessing the location at height;
- The nature of the work location;
- The nature of the work activities to be undertaken at height;
- Environmental and weather conditions;

- The presence of nearby persons who may be at risk due to falling objects (potentially) or who's activities may be affected by the work being performed at height;
- The selection of fall protection equipment (considering fall clearances) and / or access equipment;
- The selection of anchorage points;
- The load ratings of access platforms, work areas, anchorage points, etc.;
- The condition of supporting structures such as roofs;
- The need for the work to be carried out by multiple persons and the means of communication;
- A rescue plan that addresses retrieval or rescue contingencies;
- Working above open furnaces or molten metal;
- Exposure to heat sources;
- The use of a mobile elevating work platform, man basket, suspended scaffold or boatswain's chair; and
- Any other conditions that may affect the safe execution of the task.

27.1.5 Elevating Work Platforms

Before hiring or purchasing an elevating work platform (e.g. a scissor lift, man lift, boom lift, cherry picker or similar equipment), the certification of the equipment (with regard to suitability of design and construction) must be verified.

Before using an elevating work platform, it must be verified that the equipment is in good working order and has been serviced regularly. The service record and instruction manual must be kept on site. A system must be in place to ensure that the equipment is maintained and inspected as required by the manufacturer and / or local regulations.

Persons (operators) must be formally trained through an accredited training provider and certified competent in the operation of the equipment. Once a person has been issued with the necessary licence or qualification as required under local regulations, he must be appointed in writing to operate the equipment.

Before using an elevating work platform, the operator must inspect the equipment and a pre-use checklist must be completed. The operator of an elevating work platform must be in the "basket" unless it can be demonstrated to the satisfaction of the nominated project management representative that this is not possible or practical.

Every person in the "basket" must keep his feet on the floor at all times. Every person in the "basket" must be secured at all times by means of personal fall protection equipment attached to an approved anchorage point, and systems must be in place to prevent tools and equipment from falling.

A mobile elevating work platform must not be driven unless the "basket" has been lowered and secured in a stable position. Every elevating work platform that is used must be equipped with a dead man's switch or foot pedal at the operator controls. An elevating work platform must only be operated on a firm surface with the outriggers extended (where fitted).

An elevating work platform must not be operated on a grade or slope beyond the capability of the machine (every mobile elevating work platform that is used must be fitted with an inclinometer which sounds an audible alarm before the maximum safe incline has been reached).

The area beneath the "basket" and the boom must be barricaded. A second competent operator of the mobile elevated work platform to be in place on the ground level – to ensure that the elevated work platform could be lowered in case of an emergency. A spotter must be used at all times when moving a mobile elevating work platform and when the "basket" is in an elevated position.

27.1.6 Man Baskets, Suspended Scaffolds and Boatswain's Chairs

The use of a man basket, suspended scaffold or a boatswain's chair may only be considered when all other avenues to safely perform the work (e.g. ladder, scaffolding, mobile elevating work platform, etc.) have been exhausted. Authorisation to use a man basket, suspended scaffold or a boatswain's chair must be obtained from the nominated project management representative. If permission is granted, the use of such equipment must be in strict compliance with all applicable legislation.

Each person working from a man basket, suspended scaffold or a boatswain's chair must be in possession of a valid medical certificate of fitness and must be trained (and assessed competent) in the Safe Work Procedures pertaining to the use of the equipment, as well as the Fall Protection Plan.

Each person working from within a man basket or suspended scaffold or from a boatswain's chair must wear personal fall protection equipment at all times (i.e. an approved full body harness connected by means of a shock absorbing lanyard to an anchorage point or lifeline that does not form part of the basket or chair).

If suspended using a crane, the man basket, suspended scaffold or boatswain's chair must be visible to the crane operator at all times. A suitable means of communication must be in place to ensure that the suspended person(s) are able to communicate with the crane operator and personnel on the ground.

The crane operator must remain at the controls at all times while the man basket, suspended scaffold or boatswain's chair is occupied. Where feasible (and if it is safe to do so), tag lines must be used to stabilise the man basket, suspended scaffold or boatswain's chair.

A man basket or suspended scaffold (including the suspension system) must be designed by a qualified engineer. Only an approved and certified man basket or suspended scaffold from a Regulatory Body can be used. Regulations require approval by an authority or certification to a national or international standard. The manufacturer's procedures and conditions for use must be strictly complied with at all times.

Each man basket or suspended scaffold must be fitted with an information plate indicating the maximum weight and number of persons that may be lifted. Copies of the welding x-rays and engineering drawings must be kept on site.

Any work involving the use of a man basket, suspended scaffold or boatswain's chair must be carried out under the supervision of a competent person who has been appointed in writing.

A man basket, suspended scaffold or boatswain's chair must be thoroughly inspected (examined for damage) by a competent person prior to use (every time the equipment is used) and the results of each inspection must be recorded in a register. The crane or hoist as well as all lifting equipment (tackle) that is used to suspend the man basket, suspended scaffold or boatswain's chair must be tested and inspected as stipulated according to applicable Legislation.

All suspended scaffold erectors, operators and inspectors must be appointed in writing and proof of competency must be provided.

Persons carrying out welding or flame cutting work from within a man basket or suspended scaffold or from a boatswain's chair must take precautions to ensure that they do not accidentally cut or burn through the cables or wire ropes that are suspending them.

28. Scaffolding

28.1.1 Training, Competency and Supervision

Scaffolding may only be erected, maintained, altered or dismantled under the strict personal supervision of a competent Scaffolding Supervisor (or Scaffolding Inspector) who has been appointed in writing.

It is the Scaffolding Supervisor's responsibility to ensure that all persons carrying out such work are suitably trained and experienced. A certificate of competency issued by a reputable (i.e. accredited and approved) training provider must be produced for each Scaffolding Supervisor and each Scaffolding Erector and Inspector.

28.1.2 Erection and Dismantling of Scaffolding

Only approved scaffolding components may be used to erect a scaffold. Scaffolding must be erected, modified and used in accordance with the manufacturer's guidelines or recommendations, and in strict compliance with all applicable legislation and standards.

A free-standing scaffold must not exceed a height of three times the smallest dimension of its base. Scaffolds with a height to base width ratio of more than 3:1 must be restrained from tipping over by guying, tying, or bracing. Guy wires and ties prevent scaffolding from tipping away from the building or structure, and braces are rigid supports that prevent the scaffolding from tipping into the building or structure.

Scaffolding must be secured to the structure every 6 metres vertically and every 9 metres horizontally (as a minimum). Adequate underpinning, sills or footplates must be provided for scaffolds erected on filled or otherwise soft ground (including sand or gravel).

If the scaffolding is to be load bearing (i.e. other than normal access and workplace storage) then full calculations and a design must be prepared and authorised in writing by a structural engineer. The load limits specified by the scaffolding manufacturer may not be exceeded under any circumstances.

Scaffolds must be plumb and level at all times. All scaffolding components must be in good condition (i.e. undamaged and free of corrosion). All scaffolding components must be properly connected or secured and scaffolding must be effectively braced (diagonal bracing).

Each person erecting, maintaining, altering or dismantling scaffolding must use fall protection at all times (i.e. a full body safety harness with two shock absorbing lanyards fitted with scaffold hooks). The work must be planned to enable every Scaffolding Erector to be securely anchored at all times. A suitable lanyard length (not exceeding 2 metres) must be selected taking the potential fall distance and height of attachment (height of anchorage point) into account. If the lanyard is too long or the anchorage point is too low, the person may hit the ground, a platform, or objects below him before the lanyard is able to break his fall.

The area around the base of a scaffold must be barricaded to prevent unauthorised access into the work area. When scaffolding is erected or dismantled on a level, platform, or floor lying above ground level and the potential exists for components to fall to levels below the level on which the scaffolding is positioned, then the area directly below the scaffolding on each of those levels must also be barricaded. Appropriate warning signage (i.e. "Overhead Work In Progress" and "No Unauthorised Access") must be prominently displayed.

Hoists, lifts and approved material baskets must be used (where available) to lift scaffolding components to elevated positions.

No scaffolding components, tools, or any other material may be dropped from height or thrown from one level to another. Components, tools and materials must be lowered or lifted in a controlled manner. Chutes may be considered for use.

Each tool must be secured to the wrist, harness or structure by means of a lanyard. A tool bag (around the waist or over the shoulder) may be used for carrying tools up and down a scaffold structure. Tools or equipment may not be carried by hand up or down a structure, as both hands must be used for climbing. If necessary, a rope must be used for lifting or lowering tools or equipment.

While a scaffold is being erected or dismantled, no scaffolding components may be stacked on the scaffold structure unless it has been designed for that purpose. Any loading of a scaffold structure must be authorised in writing by a structural engineer.

For special scaffolding, a design must be prepared by the appointed Scaffolding Supervisor and this design must be authorised in writing by a structural engineer before the scaffolding is erected. Scaffolding may not stand on steel grating unless the grating is adequately supported from below. Scaffolding must rather stand on the structure that supports the grating.

Empty drums, crates or bricks may not be used to prop up, support or anchor scaffolding. Before scaffolding is erected in close proximity to an electrical installation or live conductors, an electrical engineer (employed by Project or the client) must inspect the area and determine whether or not the scaffolding must be earthed. Should the scaffolding require earthing, this must be done as soon as possible while the scaffolding is being erected.

Scaffolding may not be erected if it is raining or in winds stronger than 32 km/h.

A green tag (displaying the words, "Scaffold Safe for Use") or a red tag (displaying the words, "Danger: Do Not Use Scaffold") must be prominently displayed on each scaffold at all times. The tag must be positioned close to the base of the ladder or staircase provided for safe access. The wording on the tags must be in English and any other language commonly used on site.

As a minimum, a green tag must display the Scaffolding Supervisor's name, the date that the scaffold was erected, and the date that the scaffold was last inspected.

Only an appointed Scaffolding Supervisor may attach, change, update the information on, or remove these tags.

Scaffolding must not be:

- Left partially erected or partially dismantled except for normal work stoppages (for example, over weekends);
- Left in an unsafe condition (if scaffolding is unavoidably in an unsafe condition, barricading must be in place to prevent unauthorised access and the required red tags must be prominently displayed on the scaffold structure); or
- Moved or altered while work is in progress.

Mobile scaffolding must be equipped with brakes, which must be engaged at all times when the scaffolding is in use. A scaffold may not be moved if any person is on the structure.

28.1.3 Safe Access

Safe and convenient access must be provided to every scaffold platform by means of properly installed ladders or approved stairways, which must remain unobstructed at all times. Climbing up or down a scaffold on the braces or ledgers is forbidden.

All ladders used to access scaffolding must be securely attached to the scaffold structure. Hook-on and attachable ladders must be specifically designed for use with the type of scaffolding being used.

If a ladder is used to access a scaffold platform at a height greater than 1.5 metres above the ground, then the ladder must be secured internally (i.e. within the scaffold structure) and there must be an opening (closed with a trap-door) in the platform at the top of the ladder.

If the scaffold platform is at a height of less than 1.5 metres above the ground, then the ladder may be attached externally provided the guard rails around the platform are modified to allow access (the opening in the guard rails must be kept closed using a self-closing gate). No person may climb over or through the guard rails to gain access to a platform.

If a vertical ladder used on scaffolding is more than 5 metres in length it must be equipped with a ladder cage extending from a point 2 metres from the base of the ladder to a height of 1 metre above the platform (or the uppermost platform) that the ladder is providing access to.

The requirement for a ladder cage may be waived if platforms are provided at height intervals not exceeding 4 metres, with the vertical ladder secured on the inside of the scaffolding framework and an opening (closed with a trap-door) in each platform. Vertical ladders must be braced at three metre intervals (as a minimum) to prevent undue movement.

All vertical ladders providing access to a platform must be left in place for as long as the scaffold remains in place and must be inspected as part of the scaffold structure. Any deviation from the requirements stipulated above must be subjected to a risk assessment and the nominated project management representative must authorise the deviation in writing.

28.1.4 Scaffolding Platforms

Safe work platforms must be provided. Every work platform must be complete (i.e. from ledger to ledger and from transom to transom without any gaps) in order to prevent personnel, materials, tools, etc. from falling through the platform.

Every work platform must be constructed from manufactured steel scaffold boards (planks) of equal thickness (height). Timber boards are not permitted under any circumstances.

Each steel scaffold board must be securely hooked (fastened) onto the ledgers or transoms that support it.

On all sides except the one facing the structure, every scaffold platform must be provided with:

- Sturdy guard rails positioned 500mm above the platform floor (the mid rail) and 1000mm above the platform floor (the top rail); and
- Steel toe boards that are at least 150mm high and securely attached such that no gap exists between the toe boards and the platform floor.

Note: Wire mesh infill panels incorporating a toe board may be used instead of a mid-rail.

Scaffold platforms must be as close to the structure as is practicable (but not closer than 75mm) except where personnel need to sit on the edge of the platform while they work in which case the distance may be increased to no more than 300mm.

Scaffold platforms must, at all times, be kept free of waste, protruding objects, and any other obstructions. Platforms must be cleaned if necessary to ensure that they are maintained in a non-slip state.

28.1.5 Inspection of Scaffolding

Every scaffold structure must be inspected by a competent Scaffolding Inspector/Supervisor who is appointed in writing:

- Prior to use after erection, and at least weekly thereafter;
- After inclement weather (heavy rain, strong winds, etc.);
- After any incident resulting in jarring, tilting or overloading;
- After any alteration is made; and
- Before being dismantled.

On completion of an inspection, the Scaffolding Inspector/Supervisor must update the information on the scaffold tag.

A record of each inspection (date and time of inspection, location of scaffolding, findings, etc.) must be captured in a register. The register(s) must be maintained by the Scaffolding Inspector/ Supervisor(s) carrying out the inspections.

28.1.6 Using Scaffolding

The user of a scaffold (i.e. the responsible supervisor) must inspect the erected structure prior to acceptance and must ensure, as far as is reasonably possible, that the scaffold is safe and fit for purpose before allowing his team to make use of the scaffold.

In particular, the user must ensure that:

- The scaffold and the platforms have been constructed to meet the loading requirements of the work that is to be carried out (the Scaffolding Inspector/Supervisor must be consulted in this regard);
- The Scaffolding Inspector/Supervisor has checked that adequate ties and braces are in place;
- The work platforms are in the correct positions and are complete with toe boards and guard rails;
- Safe and convenient access has been provided (ladders and / or stairways); and

- A green ("Scaffold Safe for Use") tag has been attached to the scaffold by the Scaffolding Inspector/Supervisor.

Use of an incomplete or unsafe scaffold is prohibited. Unsteady or non-rigid scaffolds must not be used and inadequacies must be reported to, and rectified by the responsible Scaffolding Supervisor.

The user of a scaffold must ensure that every person in his team is aware that no alterations to the scaffold may be made by the team during the course of their work, and that if any alterations are required, they must be made by competent Scaffolding Erectors under the supervision of an appointed Scaffolding Supervisor.

A scaffold may not be used:

- If a red tag is displayed indicating that the scaffold is not safe to use; or
- During inclement weather, defined as wind speeds greater than 40km/h, thunderstorms, or heavy rain (in excess of 40mm/h).

Note: With due consideration of possible educational limitations, the contractor must ensure that all persons understand what green and red tags mean.

The area around the base of a scaffold must be appropriately barricaded to prevent unauthorised access into the work area. Appropriate warning signage (i.e. "Overhead Work In Progress" and "No Unauthorised Access") must be prominently displayed.

Loose tools and / or materials on scaffold platforms must be secured using lanyards, wire or fibre rope, or must be placed in secured containers. Where appropriate, "catch nets" may be installed as an additional safety measure to prevent materials or tools from falling to the ground.

The storage or placement of materials on scaffolding platforms must be kept to a minimum. Debris as well as tools and materials that are no longer required must be removed from all working platforms at least once per day.

Scaffolding platforms must be cleaned regularly. A heavy load may not be placed on a scaffolding platform unless the scaffold has been designed and constructed specifically for that purpose. Any loading of a scaffold structure must be authorised in writing by a structural engineer.

Scaffolds may not be used as hoisting towers or to support piping or equipment. Each person working from scaffolding must wear fall protection (i.e. a full body safety harness with two shock absorbing lanyards fitted with scaffold hooks) and must be securely anchored at all times.

All work must be carried out from properly constructed work platforms. Standing on railings or braces in order to perform work is forbidden. Drums, boxes and other makeshift substitutes for scaffolding may not be used under any circumstances.

Where work on an electrical system is to be undertaken from a scaffold, an electrical engineer (employed by Project or the client) must determine whether or not the scaffolding structure requires bonding and earthing. The scaffolding may not be used until this has been determined, and if required, until the structure has been bonded and earthed.

28.1.7 Identification and Inspection of Scaffolding Components

All scaffolding components belonging to a contractor must be properly marked or uniquely coloured to enable positive identification.

Prior to erecting a scaffold, all scaffolding components must be carefully inspected by a competent Scaffolding Inspector/Supervisor.

Components found to be defective during an inspection must be conspicuously marked and removed to a suitably demarcated quarantine area for destruction, repair, refurbishment or removal from site. Deformed and bent wedges must be straightened and inspected for cracks before being put back into service.

28.1.8 Storage of Scaffolding Components

All scaffolding components must be stored in a demarcated storage area in such a manner that they are not exposed to environmental extremes and will not cause injury to persons. Suitable barricading or fencing must be erected and warning signage must be posted (e.g. No Unauthorised Entry).

Within a storage area, scaffolding components must be stacked such that pathways (750mm in width) are maintained between the stacks. Each stack must be stable and components must be neatly placed to ensure that no ends protrude into any pathway. The various components must be stacked separately.

The weight of scaffolding components must be considered when stacking them in elevated positions.

Any storage area for scaffolding components must be positioned such that it will not interfere with any onsite activity (including the operation of any plant or equipment), block any access way, or obstruct access to any plant or equipment. Before establishing a storage area, the location must be agreed with the nominated project management representative.

29. Falling Objects

In the process of planning work activities, the risks associated with falling objects (i.e. materials, tools or equipment) must be assessed and appropriate control measures must be identified, implemented, and monitored taking the following hierarchy of controls into consideration:

- Preventing objects from falling – by using containment sheeting, toe boards, lanyards to secure tools (to a person or to the structure), ropes or chains to secure equipment

(to the structure), lift boxes, brick cages, etc. and by properly securing loads when lifted by crane or hoist;

- Protecting people from falling objects – by establishing barricaded exclusion zones, installing catch platforms or catch nets, displaying warning signage, and posting safety watchers and / or traffic controllers; and
- Personal Protective Equipment (particularly safety helmets and safety boots) – protective equipment is a last line of defence and must be worn.

Where overhead work is being carried out, barricading must be erected around the work area (at the level at which the work is taking place and at every level below including ground level) to prevent persons from entering such an area and potentially being struck by falling objects. Wherever hazards related to falling objects exist, appropriate warning signage (i.e. "Overhead Work In Progress" and "No Unauthorised Access") must be prominently displayed.

No items are permitted to lie loose in elevated positions (e.g. nuts and bolts must be securely stored) and good housekeeping standards must be maintained at all times. No tools, equipment, material, debris, waste, etc. may be dropped from height. Objects must be lowered or chuted to ground level in a safe and controlled manner.

30. Ladders

All ladders used on site must be of sound construction and adequate strength. Only non-conductive ladders made of wood or fibreglass may be used for electrical work or work being performed in proximity to energised electrical equipment. Metal ladders and ladders with metal reinforcing may not be used.

The use of makeshift ladders is forbidden. All ladders must be numbered, listed in a register, and inspected by a competent person on a monthly basis (the results of each inspection must be recorded in the register). Before using a ladder, the user must inspect it for damage.

Ladders with missing, broken, cracked or loose rungs, split stiles, missing or broken spreaders (stepladders) or any other form of damage or defect may not be used. A damaged ladder must be removed from service (and tagged, "Out of Service") without delay and must then either be repaired (if possible) or destroyed to prevent further use. Persons must receive instruction in the correct use and proper care of ladders.

Ladders may only be used as a means of access and egress. The use of ladders as working platforms is prohibited, except for inspection and carrying out minor tasks (i.e. light work and short duration) such as changing a light bulb.

Ladders may not be positioned horizontally and used as walkways or runways or as scaffolding.

All portable ladders must be fitted with non-skid safety feet (or some other means to prevent the base of the ladder from slipping) and the feet must always be placed (stand) on a firm level surface. The use of bricks, stones, wood or any other material to level the stiles of a ladder is prohibited. Ladders may not be placed on movable bases such as boxes, tables, trucks, etc.

The base or foot of a ladder must always be secured to prevent it from slipping. The ladder must be held by an assistant if the base cannot be secured in any other way (e.g. tied off). A straight ladder must extend at least one metre above its support (or above the working platform that it is providing access to). The top of the ladder must be tied off (or otherwise secured to its support) to prevent accidental movement.

A straight ladder must be placed at a safe angle, i.e. tilted at a ratio of approximately 4:1, meaning that the base of the ladder must be one metre away from the wall (or other vertical surface) for every four metres of height to the point of support.

A stepladder may never be used as a straight ladder. A stepladder must be opened fully and the spreaders must be locked securely. When using an extension ladder, at least four rungs must always overlap at the centre of the ladder. Ladders may not be joined together unless they have been specifically designed and manufactured for that purpose.

A suspended ladder (i.e. not standing on a base) must be attached in a secure manner to prevent undue swinging or swaying, and to ensure that it cannot be displaced.

A ladder may not be placed against a window, glass or any other material which is unlikely to withstand the force exerted on it by the top of the ladder. A ladder may not be placed in front of a door or window that opens towards the ladder unless the door or window has been locked or barricaded.

When a ladder is used near an entrance or exit, the base of the ladder must be barricaded. Materials and / or equipment may not be placed in close proximity to the base or landing of any ladder.

When ascending or descending a ladder, a person must always face the ladder and use both hands (i.e. maintain three points of contact).

Nothing may be carried up or down a ladder if it prevents the person from holding on to the ladder with both hands. Tools must always be properly secured. This can be achieved by attaching them to the wrist using lanyards or placing them in a tool belt around the waist. Tools and materials may also be carried in a bag over the shoulder or hoisted to the landing using a tool bag and rope. Only one person at a time may use (i.e. be positioned on) a ladder.

No person may stand or step above the third rung from the top of a straight ladder or above the second highest step of a stepladder.

Overreaching from a ladder is prohibited. If the target is not within comfortable reach, the person must climb down and reposition the ladder. No person may run up or down a ladder, or jump from the lower rungs or steps to the ground. All ladders must be properly maintained and cared for. Ladders must be stored under cover and should be hung in a horizontal position from several brackets.

No ladder may be left lying on the ground or be left exposed to the weather. A ladder left lying on the ground presents a tripping hazard and it may be damaged by vehicles running over it. No ladder may be left in such a position where it may fall over, be accidentally knocked over, or be blown over by the wind.

Ladders may not be painted, as the paint may conceal damage, defects, labels or other markings. Instead of paint, clear varnish or wood oil may be used to preserve wooden ladders. Ladders must be kept clean, as dirt may conceal damage or defects. Oil or grease accumulation on the rungs of a ladder may cause a person to slip.

Before making use of a ladder, each person must make an effort to remove mud, oil, grease, etc. from his boots.

31. Permit to Work

All personnel must comply with the Permit to Work system applicable to the project. A Permit to Work must be obtained before carrying out any work that involves, but not limited to:

- A hazardous energy source or system, including electricity, compressed fluids (e.g. hydraulics and pneumatics), chemical substances (e.g. toxic, corrosive, flammable or explosive gases and liquids), heat (e.g. steam), radiation, and machinery or

materials with potential energy (gravitational and elastic) – isolation and lockout may be required;

- Confined space entry;
- Working at heights;
- A critical lift;
- Hot work outside of designated workshops;
- Excavation; or
- A service (e.g. water supply, fire suppression systems, etc.).

Note: A Permit to Work may only be issued by an Authorised Person, and may only be received (or accepted) by an appointed Applicant.

All costs associated with the Compliance to Permits section is for the Contractors account.

Each Permit to Work that is issued must make reference to an approved Task-Based Risk Assessment for the work that is to be carried out.

The Permit to Work system that is employed must incorporate the following basic procedures:

- Prior to meeting with the Authorised Person, the Applicant must familiarise himself with all of the hazards associated with the system, plant, equipment, structure or area on or in which the work must be performed. He must also consider the risks that may arise as a result of the tasks that will be carried out. A Task-Based Risk Assessment must be in place;
- The Applicant must then request permission to carry out the work and must meet with the Authorised Person to discuss and document the scope of the work as well as the hazards, risks and associated control measures. Isolation and lockout requirements must be identified (if applicable). The isolation and lockout process must be initiated by the Authorised Person who must contact the necessary Isolation Officers.

Note: The Applicant must ensure his own safety and that of his team, and has the right to accompany the Isolation Officers to verify that all of the necessary locks have been fitted to all of the isolation and lockout points in accordance with the applicable plant or equipment-specific Isolation and Lockout Procedure.

- Once all of the necessary isolations have been completed and the necessary Clearance Certificates have been issued by the Isolation Officer(s) (if applicable), and the Authorised Person is satisfied that the system, plant, equipment, structure or area is safe to work on or in provided all identified precautions are observed by the Applicant, then he must issue (sign) the Permit to Work to the Applicant;
- The Applicant must accept (sign) the Permit to Work. If equipment has been isolated, the Applicant must attach his Personal Lock to the relevant Isolation Bar (or Local Isolation Point) and must ensure that every other person working on the isolated equipment also attaches his or her Personal Lock to the Isolation Bar (or Local Isolation Point) before starting any work;
- Before commencing with any work, the Applicant must discuss the hazards, risks, control measures, precautions and limitations as stated in the Permit to Work (and associated Task-Based Risk Assessment) with all personnel who will be carrying out the work. A register must be kept and all persons must sign the register once they have been briefed by the Applicant;
- The work performed must be limited to what is described in the Permit to Work;
- When a particular employee has completed his work, he must sign the personnel register to this effect and (if applicable) must remove his Personal Lock from the Isolation Bar (or Local Isolation Point);
- Once all work is complete, the Applicant must:
 - Ensure that all machine guards have been replaced;
 - Ensure that all tools and materials have been removed from the work area;
 - Ensure that the work area is clean and tidy;
 - Ensure that all Personal Locks (including his) have been removed from the Isolation Bar or Local Isolation Point (if applicable);
 - Inform the Authorised Person that the work has been completed; and
 - Sign off the Permit to Work.
- Once the work is complete and the Applicant has signed off the Permit to Work, the Authorised Person must:
 - Ensure that the relevant Isolation Officers perform all of the necessary de-isolations (if applicable);
 - On completion of the de-isolations, sign off the Permit to Work accepting the system, plant, equipment, structure or area back for service; and
 - Inform all relevant personnel that the system, plant, equipment, structure or

area is ready to use.

- Where the work must continue over more than one shift, the Permit to Work must be reviewed at every shift change by an Authorised Person. If the scope of work has changed, the permit must be cancelled and a new permit must be issued.

If any of the original conditions or precautions pertaining to the work is not being complied with, is no longer adequate or is no longer applicable, the Authorised Person must cancel the Permit to Work and must ensure that all work stops until full compliance with either the original or amended (as required) conditions and precautions is achieved and a new permit has been issued.

The Applicant must ensure that the Permit to Work (including the personnel register) is kept where the work is being carried out (i.e. posted on a portable Health and Safety Management Information Notice Board) and that the work is monitored against the permit conditions.

All Permit to Work records must be retained and must be made available for inspection when required.

The implementation of the Permit to Work system applicable to the project must be audited on a regular basis by a nominated project management representative. Furthermore, planned task observations must be carried out periodically.

32. Isolation and Lockout

Isolation and lockout procedures that make it impossible to inadvertently energise any system, plant or equipment so isolated, must be in place for all work where hazardous energy sources exist, including electricity, compressed fluids (e.g. hydraulics and pneumatics), chemical substances (e.g. toxic, corrosive, flammable or explosive gases and liquids), heat (e.g. steam), radiation, and machinery or materials with potential energy (gravitational and elastic). These procedures must be strictly enforced. All personnel must comply with the isolation and lockout system and procedures applicable to the project.

All Isolation and Lockout Procedures must incorporate the following basic requirements:

- The issuing of a formal Permit to Work for any work that requires the isolation of any system, plant or equipment;

- The use of defined Equipment, Discipline and Personal Locks (see Definitions), and multiple lockout systems (i.e. Isolation Bars and lockout hasps);
- Clear identification of all isolation and lockout points ensuring there is no duplication;
- Isolation of the main energy source;
- The use of slip plates or the blanking off of pipelines or ducting, in addition to the chaining and locking of valves, as determined by a risk assessment;
- Suitable methods of preventing the movement of equipment; and
- Methods to test the effectiveness or completeness of the isolation.

Note: No work may commence on a system, plant or equipment until a Permit to Work has been issued by an Authorised Person.

Note: A Permit to Work may only be issued by an Authorised Person once all required Clearance Certificates have been issued by appointed Isolation Officers.

The isolation and lockout system that is employed must incorporate the following basic procedures:

- In accordance with a system, plant or equipment-specific Isolation and Lockout Procedure, an appointed Isolation Officer(s) must isolate all points that need to be isolated in order to render the system, plant or equipment safe to work on. An Equipment Lock (and a suitable, highly visible warning tag) must be attached to each isolation point;
- On completion of an isolation (and lockout), the Isolation Officer must clear the area of all persons and must then carry out tests to ensure that the isolation is effective. This may be done by pressing a start button or by asking a control room operator to try to start the equipment. Special care must be taken to ensure that the attempted starting of the equipment has not been deactivated by another interlock forming part of the system, or by a different up-stream isolation. Alternatively, appropriate equipment may be used to test for energy (e.g. voltage verification or continuity tests).

Note: In the case of electrical isolation, a test for voltage must be carried out, after the switching device, to ensure the absence of voltage.

- The Isolation Officer must place the key to the Equipment Locks on an Isolation Bar (at a Lockout Station) and must then attach a Discipline Lock (to prevent the key from being removed) before issuing a Clearance Certificate;

The Discipline Lock must remain in place when handing over to subsequent shifts.

All Discipline Locks for a particular discipline (e.g. low voltage electricity) must be keyed-alike so that any Isolation Officer appointed for that discipline (and issued with a key) can open any of the Discipline Locks used for that discipline. This enables an Isolation Officer to de-isolate equipment that may have been isolated by another Isolation Officer during an earlier shift. Appointed Isolation Officers for a particular discipline are the only persons permitted to hold keys to the Discipline Locks used for that discipline.

Note: Local isolations do not require the use of Equipment Locks (a Discipline Lock may be attached to the Local Isolation Point by the Isolation Officer, followed by the necessary Personal Locks).

Note: For local isolations, if the Isolation Officer is the only person who will be working on the isolated equipment, then he must attach his Personal Lock to the Local Isolation Point.

- Once all required Discipline Locks are in place (i.e. attached to the Isolation Bar) and all Clearance Certificates have been issued, the Permit to Work may be issued by the Authorised Person;
- Each person who will be working on the isolated system, plant or equipment must then attach his or her Personal Lock to the Isolation Bar before starting any work (including the Isolation Officer, if he intends to work on the isolated unit);
- The attachment of a Personal Lock to the Isolation Bar prevents the removal of the key to the Equipment Locks even if the Discipline Lock is removed;
- When called (by an Authorised Person) to de-isolate the system, plant or equipment (on completion of the work under the Permit to Work), the Isolation Officer must ensure that all Personal Locks have been removed from the Isolation Bar before removing the Discipline Lock and the key to the Equipment Locks;
- Before removing the Equipment Locks and de-isolating the energy source, the Isolation Officer must inspect the system, plant or equipment that was worked on to ensure that it is safe to perform the de-isolation. This includes guard inspections,

housekeeping, ensuring that all doors and covers are in place, and most importantly, ensuring that no persons are present;

- Once all Equipment Locks have been removed and the system, plant or equipment is safe for use, the Isolation Officer must cancel the Clearance Certificate and inform the Authorised Person that the unit has been de-isolated.

Where a system, plant or equipment is sequence interlocked and a hazard could be created through the inadvertent start up or shut down of a system, plant or equipment lying before or after the unit to be worked on, then that system, plant or equipment must also be isolated and locked out. Redundant or out of service equipment must, in addition to being isolated and locked out using the relevant Discipline Lock, be fitted with a tag indicating why it is out of service, who performed the lockout, and the hazards associated with that equipment.

Where it is necessary to work on live equipment for the purposes of commissioning, testing, adjusting and sampling, such work must be carried out in accordance with a written Safe Work Procedure and controls must be in place to prevent unauthorised access into the work area. The implementation of the isolation and lockout system and procedures applicable to the project must be audited on a regular basis by a nominated project management representative. Furthermore, planned task observations must be carried out periodically.

32.1 Personal Locks

A Personal Lock must be such that it can only be unlocked by the person to whom it belongs. Combination locks may not be used. A Personal Lock, as well as the key(s) to the lock, must be kept under the exclusive control of the person to whom the lock belongs.

A Personal Lock must be issued to each person who requires one, and the person's details must be clearly and permanently engraved directly onto his Personal Lock. Alternatively, a thick durable plastic identification tag may be used that clearly displays the company's name, the employee's name, the employee's company number, and a contact telephone number (the tag must be securely fastened to the Personal Lock). Where the above is hand written, it must be done using a permanent marker pen and it must be legible.

Each person issued with a Personal Lock must be trained and certified competent in the correct use of such a lock.

A Personal Lock may NEVER be removed by anyone other than the person to whom it belongs, except if the removal (cutting) of the lock is authorised by the nominated project management representative (in the absence of this person, authorisation can only escalate upwards). Furthermore, the removal of the lock must be done under the personal supervision of the nominated project management representative, and in accordance with a written procedure. The removal (cutting) of a Personal Lock may be required if the person who applied the lock is unable or unavailable to remove it on completion of the work (e.g. lost his key, failed to remove his lock before going home, etc.).

33. Electrical Safety

All electrical work must be carried out by competent personnel in accordance with all legal requirements, codes, design criteria and safety standards applicable to the project. Each contractor carrying out electrical work on the project site(s) must develop, document and implement Safe Work Procedures that are aligned with the requirements of this standard.

All persons who will be carrying out electrical work must be certified against the requirements of job and equipment-specific electrical competency standards for the project, which must address job and equipment-specific Safe Work Procedures.

33.1 Electrical Installations

Each electrical installation (temporary or permanent) installed or worked on by a contractor must be inspected by a nominated project management representative to ensure that the installation complies with all statutory requirements, codes, design criteria and safety standards applicable to the project.

A nominated project management representative must approve all electrical work before the installation is energised. Any installation deemed unsatisfactory by a nominated project management representative must be removed, repaired or modified by the contractor at his expense.

For every permanent or temporary electrical installation, a certificate of compliance must be issued by a competent and appropriately qualified electrician. These certificates must be available for inspection.

Work on electrical installations (new installations, and modifications or repairs to existing installations) may only be carried out by qualified and authorised personnel (i.e. electricians).

Electrical safety devices (specifically, earth leakage protection and overcurrent protection) must be installed on all distribution circuits and the settings must be established by suitably qualified personnel.

To ensure the safety of the user, each distribution panel must be completely enclosed, must be of the dead-front type, and must be properly constructed and earthed.

All electrical cabling must be covered (e.g. in cable trenches) or elevated (in cable trays) to protect it from damage and to eliminate tripping hazards.

All permanent and temporary electrical installations (cabling, sockets, distribution panels, transformers, switchgear, etc.) must be inspected and tested by a competent and suitably qualified electrician on a monthly basis. The testing must include a grounding (earthing) continuity test and testing of the electrical safety devices. Details of these inspections and tests must be recorded in a register which must be made available to the nominated project management representative for inspection.

A rigorous Isolation, Lockout and Permit to Work system must be applied to all electrical work (i.e. work on electrical installations, machinery or equipment). All personnel must comply with the system and procedures applicable to the project.

Before any work on an electrical installation or equipment is carried out, the installation or equipment must be de-energised.

No electrical work may be performed live, regardless of the voltage, unless written approval is obtained from the nominated project management representative (a justification as to why it is necessary for the work to be carried out with the equipment in an energised state must be provided).

For all energised electrical work, a Safe Work Procedure must be in place and, with the exception of voltage testing and where no tools are used, a Permit to Work (specifically authorising energised electrical work) must be issued. When carrying out any energised electrical work, approved electrically insulated gloves, blankets, mats and other protective equipment must be used.

Control centres, switchgear rooms, substations, generators, transformers, capacitor banks, and other similar electrical plant and equipment must be appropriately guarded and labelled and, with the exception of emergency shut-off mechanisms, must be made inaccessible to unauthorised personnel (i.e. plant or equipment of this nature must be positioned within rooms or fenced enclosures which must be kept locked).

Appropriate warning signage must be prominently displayed within, and at all entrances to, these rooms or enclosures. The signage must indicate that unauthorised persons are prohibited from entering, that unauthorised persons are prohibited from handling or interfering with any electrical plant or equipment, the procedure to be followed in the event of a fire, and the first aid procedure to be followed should a person suffer electric shock. Suitable fire-fighting equipment must be provided in all such rooms or enclosures.

All electrical panels must be kept locked (using keyed-alike padlocks). Keys may only be issued to authorised personnel.

All un-insulated (bare) or partially insulated conductors must be enclosed and protected to prevent accidental contact therewith. Measures must be taken to prevent unauthorised access and appropriate warning signage must be conspicuously displayed.

Only authorised persons may enter rooms or enclosures housing electrical plant or equipment, and only authorised persons may access electrical panels or cabinets, and cable ducts or trenches. If any work must be carried out in such an area or on such equipment, a Permit to Work must first be obtained from the nominated project management representative.

No connection to any electrical system may be made without prior approval and a valid Permit to Work from the nominated project management representative.

No electrical equipment or apparatus may be modified without written authorisation from the nominated project management representative.

Conductive ladders may not be used in proximity to non-insulated electrically energised lines or equipment.

All permanent and temporary electrical cables, whether energised or not, must at all times be handled as if they are energised.

Only appropriately certified intrinsically safe electrical equipment may be used in flammable or potentially explosive atmospheres such as in confined spaces. Any

equipment or structure on which electric charges may accumulate (such as storage tanks) must be grounded (earthed).

Grounding (earthing) and lightning protection systems and devices must be designed, engineered, selected and installed based on site-specific requirements where required.

33.2 Arc Flash Safety

Depending on the scope and nature of the work, a documented arc flash protection programme must be in place. The PPE required (specific to a task and the equipment on which the task is performed) and associated procedures to mitigate the hazard must be included.

An Arc Flash Hazard Assessment must be carried out based on accurate and current data. All electrical cabinets where the potential for an arc flash hazard exists must be labelled in accordance with the hazard assessment and the potential incident energies calculated. A process must be in place for updating the Arc Flash Hazard Assessment and labelling as changes and electrical upgrades occur that might affect the available short circuit current on the system.

In order to mitigate the hazard, Safe Work Procedures must be in place and all persons potentially exposed to arc flash hazards must be trained in these Safe Work Procedures and must be supplied with appropriate arc flash PPE.

33.3 High Voltage Power Lines

Before any mobile equipment (such as a crane, bulldozer, back-actor, boom truck or drill rig) is mobilised to a work site, an assessment must be carried out (including a thorough inspection of the work site and the access route) in order to clearly identify any overhead or underground power lines.

A system must be in place to mitigate the risks associated with working in close proximity to power lines and suitable measures must be taken to prevent personnel or equipment from coming into contact with power lines. Extreme caution must be exercised.

A procedure must be in place for the evacuation of mobile equipment or a vehicle in the event of accidental contact with power lines. All operators must be trained in this procedure and must follow it implicitly.

Scaffolding may not be erected within 5 metres of power lines or overhead track equipment.

34. Portable Electrical Equipment

Prior to site establishment, each contractor must provide a complete inventory of all portable electrical equipment that he and his sub-contractors intend to use on the site (including plant, machines, appliances, generators, hand tools, lighting, extension cords, etc.). The nameplate data for each item of equipment must be included.

All portable electrical equipment to be used on the site must be supplied and maintained in a serviceable condition. Any electrical equipment that is in poor condition or is not in proper operating order may not be used. Any electrical equipment that a nominated project management representative deems to be unsafe or unsuitable must be removed from site.

Electrical repair work or diagnostic work on electrical equipment may only be performed by personnel who are competent and authorised to perform this work (i.e. qualified electricians). With the exception of double-insulated equipment, all electrical equipment must have an equipment grounding (earthing) conductor that connects the frame of the equipment being utilised to the grounding (earthing) conductor of the electricity supply system.

All electrical equipment and all electricity supply systems used (including generators) must be inspected and tested by a registered and competent electrician to ensure that all equipment is properly grounded (earthed).

All electrical equipment used on site must be supplied electricity through (i.e. must be protected by) an approved and tested residual current device (or earth leakage device or unit). If a socket outlet does not have a residual current device in the circuit, a portable residual current device must be used. Outlets without residual current device protection must be labelled as such.

Any electrical equipment that causes an earth leakage device to trip or deactivate the circuit may not be used again until an electrician has inspected and tested the equipment and has recorded in a register that the equipment is safe to use.

All generators must be fitted with suitable overcurrent protective devices (i.e. circuit breakers or fuses). All generators must be used in compliance with the manufacturer's

requirements. Any proposed modification to a generator must be authorised in writing by the manufacturer prior to the modification being made.

Each welding machine used on site must be fitted with a Voltage Reduction Device (VRD). If this is not practical (i.e. for arc welding processes other than stick welding), a dead man's (isolation) switch in the electrode circuit (operated by a trained observer) may be used as an alternative. All welding machines must be properly grounded (earthed).

All portable electrical hand tools used on the site must be double-insulated. Electrical equipment must be disconnected or unplugged when not in use. Portable lights must be stable and each light bulb must be protected by a substantial guard.

No person may wear a watch or any jewellery, or carry any metal objects such as a lighter or keys, while working on any electrical system or equipment. No person may work on or use electrical equipment if his clothing is wet or any part of his body is in contact with water.

No person may handle electrical equipment, equipment cords or extension cords with wet hands or if the floor or ground surface is wet.

Fire extinguishers filled with carbon dioxide must be used to fight electrical equipment fires (water may never be used). If possible, the electrical equipment should be de-energised before fire-fighting activities commence (refer to the Fire Protection and Prevention Standard).

When cleaning or performing maintenance work on an item of electrical equipment, the equipment must be unplugged.

Equipment may not be unplugged while that equipment is switched on. Nor may equipment be plugged into a receptacle (socket) with the equipment's switch turned on. Electrical equipment that has a defective plug or wiring may not be used. Repair work to defective or damaged electrical equipment may only be carried out by a qualified electrician. Extension cords may be used for temporary applications only. Permanent cabling must be installed for long-term needs.

Extension cords may not be run through doors, windows, ceilings or holes in walls. An extension cord must be uncoiled completely before it is used. An extension cord must be of sufficient current-carrying capacity to power the equipment that it is supplying

electricity to. Cords must not be overloaded. Extension cords must be unbroken and continuous (i.e. no joins or splices in the cord are permitted). Extension cords may not be daisy-chained (i.e. one extension cord plugged into another extension cord).

Extension cords and equipment cords may not be modified to fit a receptacle (socket). Two-conductor extension cords may not be used. A three-conductor extension cord (i.e. a grounded or earthed cord) must be used even if the equipment that it is supplying electricity to uses a two-prong plug.

Extension cords that are frayed, have insulation tears, cracks or abrasions, have exposed conductors, or have bent, broken or "spread" plug prongs may not be used. Extension cords that will be used outdoors must have heavy duty insulation and must be weather and UV resistant.

All electrical equipment cords and extension cords must be covered or elevated to protect them from damage and to eliminate tripping hazards. Each contractor is responsible for protecting his electrical equipment from the weather and from possible mechanical damage.

All portable electrical equipment (including generators) must be inspected, tested and tagged by a competent and appropriately qualified electrician on a monthly basis. Details of these inspections and tests must be recorded in a register which must be made available to the nominated project management representative for inspection.

The inspection and testing must include a continuity test of the grounding (earthing) conductor (as applicable) and a complete examination of the equipment or system to assure safe use. The following colour coding system must be used for the tagging of all electrical equipment:

Table 35-1 Colour Coding System for Electrical Equipment

Month		Tag Colour	Month	Tag Colour
January		Red	July	Red
February		Blue	August	Blue
March		Orange	September	Orange
April		Green	October	Green
May		White	November	White
June		Yellow	December	Yellow

The tag placed on a piece of equipment must be traceable to an entry in a register where the following information concerning the inspection and testing of that piece of equipment must be recorded:

- Date of inspection and testing;
- Equipment description;
- Equipment owner;
- Equipment location;
- Name, signature and licence number of the electrician who carried out the inspection and testing; and
- Comments concerning the inspection and testing, and details of any repair work carried out or required.

Any item of electrical equipment that does not pass an inspection or test must be removed from service (and tagged, "Out of Service") immediately and must then either be repaired (if possible) or removed from site. Any item of electrical equipment without a tag or with an out-of-date inspection or test may not be used.

Any item of electrical equipment found without a tag or with an out-of-date inspection or test must be removed from service until it has been inspected and tested. If it is found that more than one item of equipment being used by a contractor has not been inspected and tested as required, all work with electrical equipment must be stopped until it can be demonstrated to the satisfaction of the nominated project management representative that the contractor's systems and controls are adequate and fully implemented.

In addition to the formal monthly inspections and testing carried out by an electrician, electrical equipment (particularly extension cords, portable hand tools, welding machines, compressors and pumps) must be visually inspected by the user on a daily basis prior to use. Users must be trained to look for cracks in casings, loose casings, outer cord sheathing that is not being held firmly in position at the equipment, cuts or cracks in cord or cable insulation, exposed conductors, damaged plugs or sockets, and missing covers. Damage and / or defects must be reported immediately.

Personnel must immediately stop using and report any electrical equipment or machinery that is shocking, sparking, overheating or smoking. Corroded outlets, switches and junction boxes must also be reported.

35. Arc Welding

All welding machines must be fitted with voltage reducers. The supply cable to every welding machine must be correctly rated and fitted with an approved plug to be used only with an approved matching plug socket. The electrical circuit to every plug socket must be protected by a correctly rated circuit breaker and a supply voltage rated earth leakage unit. Welding cables must be properly insulated and correctly rated for the welding machines on which they are to be used.

Welding cable terminals must either be covered with a properly designed, constructed and installed cover so that inadvertent human contact with the terminals is impossible, whether the cables are connected or not, or the welding cables must be fitted with insulated plugs so that inadvertent human contact with any live part is impossible when the cables are plugged into the machine. Also the plug socket should be such that when the cables are not plugged in, inadvertent contact with a live part of the socket is impossible.

Earth cable clamps and electrode holders must be of an approved type. Earth clamps and electrode holders must be fixed to welding cables with eye terminals and bolts. All welding machines and safety devices must be subjected to regular planned maintenance and a monthly electrical inspection. The inspection must include a test to ensure that the voltage reducer is functioning properly, by measuring and confirming that the open circuit output voltage is reduced.

Before using a welding machine, the welder must ensure that he is wearing all the required and approved protective clothing and equipment:

- Persons assisting the welder must also wear all of the required personal protective Welding hood;
- Leather welding gloves;
- Safety boots with steel toe protection;
- Flame resistant overalls; and
- Any other clothing or equipment necessary to perform his work safely and efficiently.

When changing electrodes or moving the earth clamp, the welder or his helpers must wear gloves to avoid possible skin contact with live electrical parts and to prevent burns. When attaching welding cables to the terminals of the welding machine, the welder or his

helpers must wear gloves, or preferably, the machine should be switched off to avoid possible electric shock.

Helpers who may be holding the work piece being welded must wear gloves and protective goggles. Where practicable the welder should place protective screens around the area where he is welding, to prevent injury to the eyes of passers-by.

The welder must ensure that the earth cable follows the shortest practical route between the welding machine and the work piece. The earth connection must be directly between the welding machine and the work piece and no building or other structure must form part of the earth return path.

As far as is practicable, the welder should avoid welding under wet or damp conditions. If this is unavoidable, the following precautions should be taken:

- Use only oil filled or other watertight type welding machine;
- Keep the electrode holder as dry as is practical;
- Keep as dry as possible. Stand on an elevated surface out of the water and wear watertight boots and a rain suit. Also ensure that the gloves are in good condition, free of holes.

Under conditions that result in high perspiration levels, the following measures should be implemented:

- Use an insulated electrode holder;
- Change clothing regularly (if possible);
- Use insulated material like rubber mats and/or timber tuck board to separate yourself from the work piece;
- Wear dry gloves on both hands during welding;
- Use fans and air-conditioning to reduce humidity and temperature; and
- Use an observer capable of responding in an emergency.

When working inside metal vessels or under other conditions where parts of his body may come into contact with conducting surfaces, the welder must take precautions to insulate himself from such surfaces.

When working in confined spaces, the welder must take steps to ventilate the area to prevent inhalation of fumes, which may endanger his health and the health of any assistants. Engine powered welding machines must not be used in any place that is not very well ventilated since the welder and his helpers may be overcome by carbon monoxide fumes.

The welder should take the necessary precautions when welding objects that may catch alight, explode or release poisonous fumes or gases.

36. Gas Welding and Burning

Welding or cutting torches and hoses shall not be connected to cylinders when stored. When work is stopped and equipment is unattended, all valves at the gas and oxygen cylinders shall be closed. The hoses shall be bled and a check shall be made later for possible pressure build-up. Torches shall be removed from the hoses prior to putting them into the toolbox. Smoking SHALL NOT be permitted during this stopping procedure.

Special care shall be taken during overhead cutting and welding operations to safeguard and prevent falling sparks from starting a fire. Warning signs shall be posted around and at each level below the area of each overhead welding or burning operation. Fire extinguishers shall be available and fire blankets shall be used for protection.

When welding or cutting, adequate ventilation must be ensured / provided. Hoses shall be kept clear from passageways, ladders and stairs. When hoses are subject to damage, they shall be properly protected. Hoses shall be inspected daily. Fire extinguishers shall be ready for instant use in locations where cutting is performed.

Flash-back arrestors must be fitted to all cutting torches at the torch and at the bottle (a total of four arrestors).

Lighting of the cutting and welding torches must only be done using a striker and not an open flame. Soap Leak tests must be performed on all flash-back arrestors.

Hoses may only be secured using approved hose clips, and not by wire, cable ties or any other means. Special care shall be taken when welding with respect to piping that has been painted, as toxic fumes may be emitted in some cases. The supervisor's advice should be sought prior to the above welding operations being carried out.

37. Compressed Gas Cylinders

The contractor must establish a suitable storage area for oxygen, acetylene, LPG and argon cylinders in compliance with the following requirements:

- The storage area must be located at least 10 metres away from any building, and must be well ventilated;
- The storage area must have a concrete floor;
- The storage area must be enclosed using wire mesh fencing (as this will ensure adequate ventilation). This enclosure must be kept locked. Access into the storage area must be limited and controlled;
- A protective covering or roof must be fitted to the enclosure to provide shade;
- The enclosure may not be used for the storage of any other materials / equipment, and must be kept completely free of all combustible materials at all times;
- Appropriate warning signage (i.e. "No Smoking" and "No Naked Flames") must be prominently displayed on the enclosure;
- A 9kg dry chemical powder fire extinguisher must be mounted near the entrance to the enclosure;
- If electrical lighting is required, it must be of an approved intrinsically safe type;
- Oxygen, acetylene, argon and LPG cylinders must be stored separately in the enclosure. Furthermore, full and empty cylinders must be separated. Separate storage sections must be clearly designated within the enclosure for the different gas types, and for full and empty cylinders, i.e. oxygen – full, oxygen – empty, acetylene – full, acetylene – empty, etc.;
- When a cylinder is empty, the cylinder cap must be replaced to protect the valve. Empty cylinders must be clearly marked (there must be no need to open valves to check if cylinders are full or empty);
- All cylinders must be stored in an upright position and must be secured in this position by chaining, strapping or clamping them individually to a wall, a cylinder trolley, rack or carrier, or some other rigid structure;
- Cylinders must be stored in rows (when necessary due to the number of cylinders) with aisles between the rows to facilitate easy and rapid removal in the event of a fire;
- Oxygen cylinders may never be stored near highly combustible materials, particularly oil and grease, or near fuel gas cylinders. When in storage, oxygen cylinders must be separated from fuel gas (LPG and acetylene) cylinders by a distance of 6 metres or by a 2 metre high wall made of fire-resistant material;

- The total quantity of gases stored on site must be limited to a 2 week supply.

Compressed gas cylinders must always stand upright (i.e. when being used, stored or transported) and must be properly and individually secured to prevent them from falling over. Cylinders must be protected from flame, heat and from being struck by moving equipment and falling objects.

When handling gas cylinders (whether full or empty), care must be taken to prevent sudden impacts. Whenever a cylinder is not in use, the protective cap must be in place to prevent the valve from being damaged. Gas cylinders may not be carried, dragged, rolled or slid across a floor or surface. When gas cylinders are to be moved / used, they must be placed in a proper cylinder trolley fitted with a 1.5kg dry chemical powder fire extinguisher.

Gas cylinders may not, under any circumstances, be used as rollers or work supports. If transported by crane, hoist or derrick, compressed gas cylinders must be placed in a suitable cradle, net or skip box. Cylinders may NEVER be lifted using wire rope, fibre rope, a web sling or a chain sling. Before moving / transporting a gas cylinder, the regulator must be removed and the protective valve cap must be replaced.

Gas cylinders may not be taken into a confined space. Gas hoses that are run into a confined space must be removed during breaks. Gas cylinders may not be placed on scaffolding.

Cylinder valve keys must be in place. If no suitable valve key is available then the cylinder may not be used. Nothing but the manufacturer-supplied key may be used to open the valve. A flashback arrestor and a check valve (non-return valve) must be installed between the regulator and the hose and between the hose and the torch on the oxygen line and on the fuel (acetylene) line.

Connection fittings may not be forced and safety devices associated with cylinder valves or regulators may not be altered / tampered with. Gas hoses may not be joined. Only approved hose connectors of the crimp type are permitted. Wire and jubilee clamps are prohibited. Only high quality ancillary equipment may be used. This includes flashback arrestors, hoses, clamps, spindle keys, nozzles and torches. Only trained and competent personnel may operate gas welding / cutting equipment and appliances.

When an employee opens the valve to a cylinder, he must stand to one side and open it slowly. Valves may never be left partly open – they must either be closed or be opened fully. Leaking cylinders must immediately be removed from service and the workplace (if it is safe to do so).

Suitable firefighting equipment must be at hand wherever gas cylinders containing oxygen and / or fuel gas are being used. Gas cylinders must be prevented from coming into contact with electrical circuits, e.g. welding leads. Never strike an arc on a cylinder.

Oxygen may only be used for the purpose for which it is provided. Do not use oxygen in pneumatic tools or tyres, as an explosion may occur. Empty cylinders must immediately be marked as such and must be removed to the cylinder storage area at the end of each day / shift.

38. Electrically Powered Tools and Equipment

All powered hand tools, such as circular saws, drills, chainsaws, percussion tools, jigsaws etc., must be equipped with a constant pressure switch that will shut off the power when the pressure is released. (Exception: this requirement does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, rock drills, and similar hand operated power tools).

Electrical power tools must be of the approved double-insulated type. The electric cord, pneumatic or hydraulic supply line of powered tools must not be used for hoisting or lowering of the tool. Loose clothing, jewellery or gloves that could get caught in the tool must not be worn when operating powered tools. Operators of powered tools who have long hair must keep their hair tied up.

The power source must be disconnected from the tool before making any repairs, servicing, adjustments, or replacing attachments such as drill bits.

38.1 Angle Grinders

The following personal protective equipment must be worn when using angle grinders:

- Safety helmet;
- Gloves;
- Safety glasses (or safety goggles) and a full face shield (i.e. double eye protection);
- Overalls with long sleeves and long pants, avoid any form of loose clothing;
- Safety boots with steel toe protection;

- Hearing protection;
- Breathing apparatus where dust or fumes may be generated;
- Where grinding machines are used, a face shield is to be worn as extra protection to the safety glasses; and
- Certain tasks may require the use of a leather apron as determined by a risk assessment.

A 230mm angle grinder may not be used for free cutting purposes. Exceptions may be approved only if alternative methods evaluated proved more hazardous or no alternative exists. The risk assessment for the task must then specifically include mitigating measures to ensure the safest possible way of performing the task.

The use of 230mm angle grinders for grinding purposes is acceptable, however should this form of grinding be required, the 115mm or 125mm grinders would be preferable. All angle grinders must have a dead man switch incorporated, with a pressure switch in the handle. A 230mm electrical angle grinder unit must incorporate a soft start to reduce the starting strain and a braking system to reduce run on after the unit has been switched off.

All angle grinders must have a spindle lock to assist with changing the disc or grinding wheel. Anti-vibration handles are recommended to further reduce the stress if used for extended periods. Angle grinders must be equipped and operated with disc guarding at all times. Angle grinder must not be stored with fitted discs, as this will lead to damaging of the discs.

Before use and mounting of discs it is essential to check the safety codes and specifications printed on the upper side of the disc. Such specifications include the following:

- Revolutions per minute (RPM). The allowable speed of the disc must be equal to or greater than the maximum achievable speed of the grinder;
- Physical dimensions of the disc must meet grinder specification; and
- The disc must be suitable for the material type to be cut / ground as indicated on the disk. Cutting discs must never be used for grinding and vice versa.

It is critical that the correct disc mounting procedure is followed:

- Check that the machine is plugged out;
- Check the machine spindle, backup washer and thread;

- Check the condition of spindle nut - ensure spanner drive holes are not elongated;
- Ensure spindle nut spanner is the tool recommended by machine manufacturers;
- Do not use a hammer, pipe or chisel to tighten the nut, or apply additional mechanical advantage to nut torque. A firm "nip" is sufficient to retain the disc;
- Ensure the spindle diameter is suited to disc bore. Excessive clearance will cause the machine to vibrate due to eccentricity;
- Check to see that the nut and backup washer do not "bottom out". This will result in the disc not being correctly clamped on the spindle;
- Ensure the spindle speed is marked on the grinder and that it is less than the allowable disc speed; and
- Fit the disc, with the metal ring or writing to the nut side.

39. Pneumatically Powered Tools and Equipment

Pneumatic powered tools must only be driven by filtered compressed air with an in-line lubrication system, or be lubricated prior to use if there is no in-line lubrication system. When using pneumatic powered tools the designated tool pressure must be attained by the use of a regulator.

Pneumatic powered tools must be disconnected when not in use. They must not be disconnected from the air supply until all the residual pressure has been released or contained by a shut-off device. Hoses must not be kinked as a means of containment.

Employees operating pneumatic powered tools, and any potentially affected employee in the vicinity of use, must wear suitable personal protective equipment. All rotary compressed air tools (e.g. drills) must have the rated revolution per minute (RPM) permanently marked on the casing. Only attachments of compatible RPM must be used with these machines.

The actual RPM of the tool must be checked every three months to ensure that the speed is as rated to manufacture specifications.

Pneumatic powered tools must be secured to the air supply hose by an approved positive means to prevent the tool from becoming accidentally disconnected. Safety clips or retainers must be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.

All pneumatically driven nailers, staplers, and other similar equipment provided with automatic fastener feed, which operate at more than 100 kPa pressure at the tool, must have a safety device on the muzzle to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface.

Compressed air must not be used for cleaning purposes except where reduced to less than 30kPa, and then only with effective chip guarding and personal protective equipment in place. The 30kPa requirement does not apply to concrete form, mill scale and similar cleaning purposes.

The use of compressed air for cleaning purposes must be approved by the nominated project management representative. Compressed air must not be pointed at any part of the body or used for cleaning clothing.

Airless spray guns of the type which atomize paints and fluids at high pressures must be equipped with automatic or visible manual safety devices which will prevent pulling of the trigger to prevent release of the paint or fluid until the safety device is manually released. A diffuser nut which will prevent high pressure, high velocity release while the nozzle tip is removed, plus a nozzle tip guard which will prevent the tip from coming into contact with the operator, or other equivalent protection must be provided in lieu of the above. Abrasive cleaning nozzles must be equipped with an operating valve, which must be held open manually to enable operation. A support must be provided on which the nozzle may be mounted when it is not in use.

40. Fuel Powered Tools and Equipment

Fuel powered tools must be shut down and allowed to cool before being refuelled, serviced, or maintained. Fuel must be transported, handled, and stored in approved fuel containers. Where possible, diesel driven engines must be used in preference to petrol driven engines. All fuel powered tools must be included on the contractor's Equipment Register and the register must be submitted to the nominated project management representative prior to the relevant work commencing.

When fuel powered tools are used in enclosed spaces, the space must be ventilated and the atmosphere monitored to measure toxic gas concentrations. Persons in the space must wear the necessary personal protective equipment. Confined Space Entry clearance may apply. This type of activity must only be undertaken in exceptional circumstances and requires the approval of the nominated project management representative.

41. Hydraulically Powered Tools and Equipment

Hydraulic powered tools must use only approved fluid that retains its operating characteristics at the most extreme temperatures to which it will be exposed. The manufacturer's stated safe operating pressures for hoses, valves, pipes, filters and fittings must not be exceeded. Only manufacturer approved hoses, valves, pipes, filters and fittings must be used.

42. Explosive Powered Tools

All operators shall be trained by the contractor. The contractor shall ascertain that the explosive charges to be used are of the correct strength for the purpose.

Projectiles from explosive powered tools shall NOT be driven into:

- Tile, terracotta, glazed brick, glass, marble, granite, thin slate or other brittle substances;
- High tensile steel, cast iron or steel hardened by heat treatment; or
- Concrete that contains aggregate that will not pass wholly through 25mm mesh screens.

Under no circumstances shall a tool be fired in such a manner as to cause the projectile to fly free. Suitable safety glasses and hearing protection shall be worn by operators when firing an explosive powered tool.

At all times when a tool is being used, the operator shall display clearly legible signs at or near the place where the tool is in use. Sign should read: WARNING: EXPLOSIVE POWERED TOOL IN USE – KEEP CLEAR. The operator shall warn all other employees in the vicinity of the area in which the tool is about to be used.

Tools shall never be stored in a loaded state. Cartridges and tools shall be stored separately in lockable containers. A logbook must be kept of the number of cartridges used and returned.

43. Hand Tools

Employees required to use hand tools must receive training relevant to the tool and have their competency assessed in the operation, inspection and maintenance of the tool. Where necessary, additional applicable personal protective equipment must be worn when using hand tools.

Wrenches, including adjustable, pipe, end, and socket wrenches, must not be used when the jaws are sprung to a point where slippage occurs. Impact tools such as drift pins,

wedges and chisels, must be kept free of mushroomed heads. The wooden handles of tools must be kept free of splinters or cracks.

Adjustable wrenches must not be used in lieu of ring or open-end type spanners, unless a risk assessment has been conducted and the use of the adjustable wrench is approved by the nominated project management representative. Wherever possible, ring spanners must be used in preference to open end spanners.

Correct hand tools for the job must be used, e.g. screwdrivers must not be used as chisels, and pliers must not be used as hammers. All wedges and drifts that may spring, fly or fall to lower levels upon impact must be fitted with an attachment which attaches a safety “lanyard” to a solid structure to restrain the impact tool from becoming a projectile.

All hand tools used in elevated areas, that may be dropped or fall to lower levels must be fitted with safety lanyards and attached to solid structures or in the case of podges, scaffold keys etc., attached by wrist lanyard to the user.

43.1 Stanley Knives / Utility Knives

A utility knife must be used as a last resort, when it is the safest tool to use. Always consider alternatives that pose less of a risk to the operator.

Whenever a utility knife is used, ensure that a complete risk assessment is done and that all possible hazards have been addressed. Only utility knives with retractable blades are to be used. The blade is to be retracted at all times when the knife is not in use or is being stored.

Before using the utility knife, ensure that the tool is in a good condition and the blade is secure in the holder (seated correctly and that there is no play). Ensure that the blade is always sharp and in good condition. This will prevent the use of excessive force.

Always wear cut resistant gloves and safety glasses when using a utility knife. There is always a risk of the blade breaking under tension and becoming a projectile. Always ensure that you cut away from your body, and that no part of your body is in the firing line. Always ensure cleanliness of all equipment in use during the cutting operations.

44. Inspection of Equipment and Tools

All tools must be inspected by the user before, during and after use. If any faults are identified, the tool must be taken out of service and not used until repaired. Faulty tools that are not able to be repaired must be tagged "out of service" and removed from site.

45. Manual Handling and Vibration

Any handling or lifting task that can only be done manually must be planned and rehearsed before the task is done. If more than one person is involved in a task a communication procedure must be agreed in advance. Lowering the load must be done in a controlled manner. Dropping a load is dangerous and must be avoided.

As a guideline 25 kg is considered to be the limit of what a person can safely handle. Where there are loads exceeding 25 kg the risk of handling the load must be mitigated to assure minimal potential for any injury. When mechanical lifting aids are provided, they should be used.

Extra care should be taken when lifting awkwardly shaped objects. Correct lifting techniques must be used at all times when lifting a load manually.

The following, but not limited to, should be considered with conducting the Risk Assessment with regards Manual Handling and also take into consideration the task factors, physical demands and tools involved in the task:

- Load weight/frequency;
- Hand distance from lower back;
- Asymmetrical trunk/load;
- Postural constraints;
- Grip on the load;
- Floor surface;
- Environmental factors;
- Carry distance; and
- Obstacles en route.

Team Manual Handling:

- Load weight;
- Hand distance from lower back;
- Vertical lift region;

- Trunk twisting/sideways bending;
- Postural constraints;
- Grip on the load;
- Floor surface;
- Environmental factors; and
- Communication, co-ordination and control.

As far as possible, exposure to vibration must be eliminated. However, if this is not possible, short-term solutions to decrease exposure include:

- Reducing the vibration levels;
- Removing the person from the vibrating equipment / tools;
- Reducing the period of time that the person works with the vibrating equipment / tools (at least 40 minutes break after 20 minutes working with a machine that vibrates excessively).

In order to reduce exposure to vibration:

- Consider buying equipment that operates effectively at lower speeds;
- Buy equipment with built-in damping materials;
- Buy lighter tools if they are available - they require less of a grip;
- Maintain the equipment;
- Make sure equipment is balanced and there are no worn parts;
- Use remote controls when they are available;
- Reduce your grip on the equipment when it is safe. The less time you actually have your hands on the equipment the better. Relax your hands during these brief breaks;
- Take scheduled breaks; and
- Do other tasks that allow you to move away from vibrating tools and equipment.

The workplace must be assessed by a competent person for compliance with good design, layout and practice, to avoid or minimise adverse health consequences due to manual handling and vibration issues.

Quantitative evaluations of vibration produced by specific equipment must include the following measurement parameters: direction of movement, frequency, intensity, and variation with time and duration, as per documented methods.

Employees and contractors must be informed of the results of assessments and instructed in appropriate manual handling techniques, where the risk assessment indicates a need. Workplace vibration sources that could contribute to the exceedance of an Occupational Exposure Limit (hence potential for impact on worker musculo-skeletal fitness) must be identified and adequately characterised.

Manual handling tasks assessed as having the potential to cause a Lost Time Injury (i.e. with potential for impact on worker musculo-skeletal fitness) must be identified and adequately characterised. Workplace manual / materials handling tasks risk rated as “significant” must be assessed and recorded to include biomechanical factors (e.g. posture, bending, twisting, repetitive motions, working overhead, and exerting force away from the body).

46. Personal Protective Equipment

All applicable legislation concerning Personal Protective Equipment (PPE) must be complied with at all times. As a minimum, the following PPE must be worn by all persons (including visitors) at all times whilst on the project site:

- Safety footwear with steel toe protection;
- Safety glasses (individuals who wear prescription spectacles must be provided with either over-spec safety glasses or prescription safety glasses);
- Safety helmet (hard hat); and
- High visibility protective clothing with reflective taping (long trousers and long-sleeved shirts with collars and cuffs).
- Additional PPE requirements must be determined through hazard identification and risk assessment. This hazard-specific PPE (such as hand protection, hearing protection and respiratory protection) must be worn as required (e.g. when in a certain area, when performing a certain task, or when working with a certain substance);
- The correct PPE must always be worn:
 - In accordance with site requirements (as indicated at the entrances to a project site and at the entrances to buildings and / or designated areas on the premises);
 - In zoned areas (e.g. noise zones and respirator zones); or
 - As required by a Safe Work Procedure, a risk assessment, safety information boards or a Material Safety Data Sheet (MSDS).

Each contractor must provide each of his employees with all required PPE (at no cost to the employee). The specific PPE that is provided to a particular employee must be based on the nature of that employee's work and the location in which the work is performed (i.e. must be based on the hazards to which the employee is exposed). PPE requirements for a particular job or for a particular area must be determined through a risk assessment for that job or area.

Any employee who does not have all of the PPE that is required for him to perform his duties safely will not be permitted to work. Each employee must care for his PPE, maintain it in good condition, and inspect it on a daily basis. If an item of PPE has worn out, has become damaged, or is found to be defective in any way, it must be replaced by the contractor.

PPE must be stored in accordance with the manufacturer's requirements and / or recommendations.

Each employee must receive training in the use, maintenance and limitations of the PPE that is provided to him, and must be made aware of why the PPE is necessary as well as the consequences of not wearing it as instructed (i.e. the potential for injury and / or disciplinary action). Training records must be retained.

Any person who refuses to wear PPE as required must be removed from the site. Symbolic signs indicating mandatory PPE requirements must be prominently displayed at the entrances to a project site and at the entrances to buildings and / or designated areas on the premises where additional PPE is required. These signs must comply with the applicable national standard (if one exists).

Contractors must appoint an employee to:

- Control the issuing and replacement of PPE;
- Keep an up-to-date register as proof that items of PPE have been issued to individuals (an employee must sign for the items that he receives);
- Ensure that there is an adequate supply of all required PPE (i.e. maintain PPE stock levels on site); and
- Carry out regular inspections to ensure that PPE is being used correctly, is being maintained in a good, serviceable and hygienic state, and is not being shared between employees.

46.1 Head Protection

A safety helmet (or hard hat) worn correctly will help protect the head in the event of:

- An employee being struck on the head by a falling or flying object;
- An employee striking his head against a fixed or protruding object; or
- Accidental head contact being made with an electrical hazard.

A safety helmet must be worn at all times on a project site, with the following exceptions:

- Vehicle and equipment operators inside enclosed cabs;
- In offices and in office or administration buildings; and
- At designated lunch and break areas (provided that no work is in progress in the immediate break area).

A safety helmet must be worn in accordance with the manufacturer's requirements. A safety helmet must be worn directly on the head. The wearing of a cap or other headgear beneath a safety helmet is prohibited unless the items have been specifically designed to be used in combination (i.e. the arrangement is approved by the safety helmet manufacturer).

The suspension system inside a safety helmet (that acts as a shock absorber) may not be removed. The painting of safety helmets is prohibited. Safety helmets may only be cleaned using a mild detergent and water. No solvents may be used.

46.2 Eye Protection

If an employee is carrying out, assisting with, or working adjacent to any activity where sparks or projectile particles are being generated, where chemical mists or fumes are being generated, where liquids may splash or spray, where harmful electromagnetic radiation (heat or light) is being generated, or where there is a risk of wind-blown particles entering the eyes, then suitable protective eyewear must be worn at all times (i.e. safety glasses, safety goggles, a face shield, a welding helmet, or a combination of these).

Such activities include:

- Working with rotating equipment (e.g. grinders, drills, mills, lathes, and saws);
- Welding and cutting;
- Chipping, chiselling or caulking;
- Using explosive powered tools;

- Abrasive blasting;
- Sanding; and
- Working with chemical substances (e.g. drilling fluids, acids, solvents, paints, pesticides, etc.).

For certain activities, special eye protection is required (e.g. a heat-resistant face shield is required when working near molten metal). Double eye protection is required for activities such as:

- Grinding, cutting, chipping, chasing and reaming (employees must wear both a full face shield and safety glasses or goggles); and
- Arc welding (welders must wear both safety glasses and a welding helmet).

Screens must be erected to protect passers-by, where practical.

Safety glasses must be worn at all times on a project site, with the following exceptions:

- Vehicle and equipment operators inside enclosed cabs with the windows fully closed;
- In offices and in office or administration buildings;
- At designated lunch and break areas (provided that no work is in progress in the immediate break area); and
- When another form of eye protection is required (e.g. safety goggles).

All safety glasses used on site must have suitable permanent side protection.

In strong sunlight, dark safety glasses should be worn to reduce eyestrain and fatigue. However, caution must be exercised when employees are required to frequently move between outdoor and indoor environments. Dark safety glasses may not be worn indoors or in poor daylight conditions. Prescription spectacles with tinted lenses are prohibited inside buildings or other structures with limited illumination unless the lenses are light-sensing and adjust to changing illumination levels.

Employees who wear prescription spectacles (i.e. require corrective lenses) must make use of either:

- Prescription safety glasses (with permanent fixed side shields) that conform to the requirements of a recognised national or international standard (e.g. CSA, ANSI, or equivalent); or
- Over-spec safety glasses or goggles.

The use of contact lenses in certain areas may not be suitable because of increased risk to the eye due to dust or heat.

46.3 Hearing Protection

Local regulations concerning occupational exposure to noise and the use of hearing protection must be complied with as a minimum. “Low noise” tools and machinery must be used wherever possible to reduce noise levels. Where noise cannot be reduced to an acceptable level through engineering and work practice controls, measures must be put in place to minimise the exposure of employees to the noise (i.e. administrative controls and personal hearing protection).

Areas where it is likely that the 95% upper confidence limit of an eight hour L_{eq} mean exceeds 85dB(A), or areas where impulse noise exceeds 140dB(C), must be designated as noise zones. These noise zones must be clearly demarcated and mapped, signs must be posted, and all employees must be made aware of the requirements for working in such an area.

Suitable hearing protection must be worn in all designated noise zones and when carrying out (or working in the vicinity of) any activity where the noise level exceeds 85dB(A).

Where hearing protection is required, a hearing conservation programme (applicable to all personnel and visitors) must be implemented. The programme must include training in the correct use and proper storage of hearing protection devices as well as replacement requirements. Training must be provided when hearing protection is first issued to an employee and refresher training must be carried out at least annually thereafter. Training records must be retained.

At least two types of personal hearing protection must be made available to employees. The hearing protection devices provided must have adequate noise reduction ratings (i.e. must be able to attenuate the noise level to below 85dB(A)).

Personal hearing protection must be issued on an individual basis and must not be shared. In addition to personally issued hearing protection, suitable disposable hearing protection must be made available at the entrances to all noise zones. All Hearing Protection Devices

(except for disposable hearing protection) must be properly inspected and cleaned on a regular basis.

46.4 Respiratory Protection

Designated areas (respirator zones) must be established where:

- It is likely that the 95% upper confidence limit of a Similar Exposure Group's mean exposure concentration exceeds the relevant Occupational Exposure Limit (OEL) for agents resulting in chronic effects, such as total inhalable dust, respirable dust, respirable crystalline silica, PAH, fluorides, lead, mercury, asbestos or non-asbestos fibrous materials; or
- The concentration of an agent (particulate, vapour or gas) with an acute effect exceeds 50% of the relevant OEL.

Note: For a particular hazardous agent, the OEL to be adopted must be either the client's OEL or the OEL specified in local legislation, whichever is the most stringent.

Respirator zones identified must be clearly demarcated and mapped, signs must be posted, and all employees must be made aware of the requirements for working in such an area.

Suitable Respiratory Protection Devices (RPDs) must be worn in all designated respirator zones and when carrying out (or working in the vicinity of) any activity where the risk assessment has identified the need for respiratory protection.

RPD's must be selected based on:

- The type(s) of airborne contaminants that are present (gases, vapours, and particulates and aerosols including dusts, fumes, sprays, mists, and smoke);
- The potential particulate size distribution;
- Substance toxicity; and
- The likely concentrations.

Compatibility with the work tasks and other PPE, comfort (as it affects wear-time), and the ability to communicate adequately, must also be considered.

The risk assessment and method statement for the work to be performed, the information contained in the relevant Material Safety Data Sheets (MSDSs), and the results of any air

monitoring associated with the substances to be worked with or activities to be carried out, must be used to ensure that the most suitable RPD is selected.

Only RPDs certified to a recognised standard and approved by the nominated project management representative may be used.

Where respiratory protection is required, a respiratory protection programme (applicable to all personnel and visitors) must be implemented.

The respiratory protection programme must include:

- Periodic inspection of RPDs, including before each use;
- Periodic evaluation (by competent persons) of cleaning, sanitising, maintenance and storage practices;
- Performance of positive pressure and negative pressure fit checks by RPD wearers before each use to ensure that the respirator is functioning properly; and
- Training at first issue of a RPD and regular refresher training thereafter in accordance with regulatory requirements or at least once every two years (the training must cover fit testing, use, cleaning, maintenance, filter cartridge replacement, and storage). Training records must be retained.

RPDs must be used, maintained, and stored in compliance with the manufacturer's requirements as well as the respiratory protection programme. Suitable facilities must be provided for the cleaning and sanitary storage of RPD's.

As a minimum, qualitative and documented fit testing must be carried out (although quantitative fit testing is preferred) to ensure that the use of negative pressure RPDs (including disposable RPDs) is effective. Fit testing must be performed by a competent person when an RPD is first issued and must be repeated periodically in accordance with legal requirements or every two years as a minimum. A policy must be in place requiring a clean shaven face when using a negative or neutral pressure RPD for routine tasks (otherwise a positive pressure RPD must be used). A medical evaluation including a pulmonary function test may be required to determine whether or not an individual is medically fit to wear a respirator.

For air-supplied RPDs, breathing air must be effectively filtered and / or isolated from plant and instrument air, and isolated from sources of potential contaminants. The

supplied air must be tested to determine if the air quality complies with the requirements of applicable standards for breathing air.

For nuisance dust, dust masks with a protection level of at least FFP2 must be worn.

46.5 Hand and Arm Protection

Gloves must be worn when handling or working with equipment, materials or substances with the potential to cause injury or illness. Suitable gloves must be selected based on the task to be performed and the specific hazard against which the employee requires protection, such as:

- Sharp edges;
- Sharp points and splinters;
- Abrasive surfaces;
- Hazardous chemical substances (toxic, corrosive, sensitising, etc.);
- Extreme temperatures; and
- Viruses, bacteria and parasites.

46.6 Foot Protection

Safety boots must be worn at all times whilst on a project site, with the exception of offices and office or administration buildings in which closed athletic, business or similar shoes may be worn.

Sandals, slaps, slippers, open-toed and high-heeled shoes are not permitted on any project premises.

Safety boots must provide the following protection:

- Steel toe cap to protect against crushing (impact and compression forces);
- Leather uppers that provide resistance against water penetration and water absorption;
- Slip resistant soles;

And where a risk assessment identifies the need:

- Puncture resistant soles (i.e. steel midsoles) for protection against sharp objects;
- Chemical resistant soles for protection against spilt chemical substances (such as solvents, hydrocarbons, acids, and alkalis);
- Heat resistant soles for protection against hot surfaces or molten metal; or
- Electrical shock resistant soles for protection (insulation) against live electrical conductors.
- Gumboots with steel toe caps must be worn when working in water or very wet conditions.

46.7 Clothing

All employees working on a project site must wear high visibility protective clothing with reflective taping. Trousers must be long and shirts must be long-sleeved. Shirts must be buttoned at the neck and wrists.

Protective clothing must preferably be made of natural fibres. Short pants, short-sleeved shirts, sleeveless shirts, and vests are prohibited as outer garments (with the exception of a high visibility vest worn over a long-sleeved shirt).

Loose clothing may not be worn where it may become caught in moving machinery or equipment. For hot work (e.g. welding, cutting, etc.), work in the vicinity of molten metal, and any work carried out in the vicinity of an open flame, the protective clothing worn (shirt and trousers) must be made of a suitable fire retardant fabric. Underwear and socks must be made of natural fibres (preferably wool) or fire retardant fabric.

46.8 Body Protection

Suitable body protection must be provided as required to protect employees against specific hazards. A range of work activities require body protection in one form or another, including but not limited to:

- Working in extremes of temperature, such as fire-fighting, attending to a heating furnace, working with molten metal, working in refrigerated environments, etc.;
- Hot work (e.g. welding, burning, cutting and grinding);
- Working with hazardous chemical substances (e.g. acids, solvents, pesticides, etc.); and
- Clean up and disposal of hazardous materials and wastes (e.g. asbestos, hydrocarbons, etc.).

A wide variety of protective garments are available, such as fire-fighting suits, furnace suits, freezer jackets, leather aprons, leather spats, laboratory coats, chemical resistant aprons, chemical resistant (or hazmat) suits, and disposable coveralls. Suitable items must be selected to provide protection against the specific hazard(s) to which an employee is exposed. Hazards must be carefully identified and characterised to ensure that the correct protection is used.

Body protection must be sized properly to prevent tearing, the parting of seams, tripping, or restriction of movement.

46.9 Electrical Protective Equipment

To reduce the risk of electric shock, electrical insulating equipment appropriate for the voltage that may be encountered must be worn when working on energised electrical installations and when working within two metres of exposed energised conductors.

All rubber electrical insulating equipment (including gloves, sleeves, matting, covers, blankets, and line hoses) must be inspected for damage prior to and after each use, and immediately following any incident that can reasonably be suspected of having caused damage.

Rubber insulating equipment with any of the following defects and / or damage may not be used:

- A cut, rip, tear, hole, or puncture;
- Ozone cutting or ozone checking (i.e. the cutting action of ozone on rubber under mechanical stress causing a series of interlacing cracks);
- An embedded foreign object;
- Chemical deterioration (texture changes) such as swelling, softening, hardening, or becoming sticky or inelastic; or
- Any other defect that damages the insulating properties.

Rubber insulating gloves must be electrically tested before first issue and every 12 months thereafter as a minimum. Insulating gloves must also be given an air test along with the daily inspection. Essentially, this involves filling a glove with air and checking for any holes or leakage.

Insulating equipment that fails an inspection or electrical test may be repaired only as follows:

- Rubber insulating line hose may be used in shorter lengths with the defective portion(s) cut off;
- A rubber insulating blanket may be repaired using a compatible patch that results in the patched area having electrical and physical properties equal to those of the blanket;
- A rubber insulating blanket may be salvaged by cutting the defective area off the undamaged portion of the blanket;
- Rubber insulating gloves and sleeves with minor physical defects, such as small cuts, tears, or punctures, may be repaired by applying compatible patches. The patched areas must have electrical and physical properties equal to those of the surrounding material.

Repairs to gloves are permitted only in the area between the wrist and the reinforced edge of the opening.

Repaired insulating equipment must be retested before it is put back into use. Insulating equipment must be cleaned as required to remove foreign substances (using a mild detergent). Insulating equipment must be stored in such a location and in such a manner so as to protect it from light, temperature extremes, excessive humidity, ozone, and other damaging substances and conditions.

Leather protective gloves must be worn over rubber insulating gloves to provide mechanical protection against cuts, abrasions, and punctures.

Suitable arc flash PPE (e.g. voltage rated gloves, fire retardant clothing, arc rated face shield, arc flash hood, arc flash suit, etc.) must be worn whenever an employee is potentially exposed to an arc flash hazard. The appropriate level of PPE must be worn depending on the task and the potential energy exposure. These PPE requirements must be clearly specified as part of a project-specific arc flash protection programme.

46.10 Jewellery

Necklaces, dangling earrings, and bracelets may not be worn on a project site. No ring or watch may be worn where there is a risk that it may become caught in machinery or equipment. No jewellery or other conductive apparel (such as a key chain or watch) may be worn when carrying out energised electrical work.

46.11 Hair

Scalp hair that is longer than the top of the shoulders must be tied up and restrained within the person's safety helmet or within the collar of his or her overalls, shirt or jacket.

For negative or neutral pressure Respiratory Protection Devices, facial hair must not cause the seal between the respirator and facial skin to be broken (or prevent a seal from being formed in the first place).

46.12 Task-Specific PPE

In addition to the standard PPE required for a project site (including a safety helmet, safety glasses, safety boots, and high visibility protective clothing), the following task-

specific PPE must be used as a minimum by any person carrying out or assisting with such a task:

- Arc Welding – safety glasses and welding helmet (i.e. double eye protection), respiratory protection against the specific airborne contaminants being generated (fumes, gases, dusts, etc.), leather welding gloves, leather apron, leather spats, leather yoke (for work above shoulder height), and knee pads for welders in kneeling positions;
- Gas Welding, Cutting or Brazing – gas cutting or welding goggles with shade 4 filter lenses and full face shield (i.e. double eye protection), respiratory protection against the specific airborne contaminants being generated (fumes, gases, dusts, etc.), leather gloves (long cuff for welding and cutting, short cuff may be used for brazing), leather apron, leather spats, and leather yoke (for work above shoulder height);
- Grinding – safety glasses or goggles and full face shield (i.e. double eye protection), hearing protection, respiratory protection where dust or fumes may be generated, leather gloves, leather apron, and leather spats;
- Abrasive Blasting – respiratory protection (air-supplied hood), hearing protection, leather gloves, and leather apron;
- Spray Painting – respiratory protection (air-supplied hood for confined spaces), safety goggles (if the respirator design does not provide this protection), hearing protection where air compressors are used), chemical resistant gloves, and chemical resistant disposable coveralls.

46.13 Sun Protection

The contractor must ensure that all personnel are protected in sunlight through the use of long sleeve shirts, long trousers, brims to safety helmets and UV factored sunscreen. Shade structures must also be made available to all employees.

The contractor must conduct training and awareness sessions with his employees, advising on the risks associated with working in the heat (including dehydration) and the precautions to be taken (e.g. ensuring adequate fluid intake).

47. Fuel / Flammable Liquid Storage and Refuelling

No fuel (diesel, petrol, paraffin, etc.) or any other flammable liquid (paints, solvents, etc.) may be stored on site unless approved in writing by the nominated project management representative.

If the on-site storage of a fuel or a flammable liquid is approved, the contractor must ensure the following:

- The quantity of fuel / flammable liquid to be stored on site must be kept to the minimum that is required;
- The storage area must be located in a well-ventilated area at least 10 metres away from any building, drain, boundary or any combustible material;
- If more than 200 litres of fuel / flammable liquid is to be stored, the tank must be installed / the containers must be positioned within a bund;
- If the fuel / flammable liquid are to be stored in bulk tanks / vessels, then the minimum capacity of the bund must be 110% of the volume of the largest tank / vessel. If many small containers (e.g. 210 litre drums) are to be stored, the bund must be able to contain 25% of the total volume of the stored products;
- The bund must be impermeable. It must have a solid concrete floor and the walls must be constructed out of brick and must be plastered on the inside;
- The bund must be fitted with a lockable drain valve (for draining away rainwater), which must remain locked in the closed position. The valve may only be opened under supervision and in accordance with a written procedure;
- The fuel / flammable liquid storage area may not be used for the storage of any other materials / equipment, and must be kept completely free of all combustible materials (including rubbish, brush and long grass) at all times;
- Access to the storage area must be controlled (wire mesh fencing and gate);
- Appropriate warning signage (i.e. "Flammable Liquid", "No Smoking" and "No Naked Flames") must be prominently displayed at the storage area. The contents and volume of each tank must be indicated;
- In order to contain spillages, the offloading / refuelling bay at the fuel / flammable liquid storage area must have a solid concrete base surrounded by bund walls, ramps or humps and / or spill trenches (covered with steel grating) that lead into a sump;
- Fuel dispensing pumps must be protected against impact damage;
- All fuel / flammable liquid storage tanks and dispensing equipment must be electrically bonded and properly earthed;
- All electrical installations and fittings must be of an approved intrinsically safe type;
- Two 9kg dry chemical powder fire extinguishers must be mounted in an easily accessible position near the entrance gate to the fuel / flammable liquid storage area. Depending on the size of the storage area, additional fire extinguishers may be

required to ensure that an extinguisher is no further than 15 metres away from any point on the perimeter of the storage area;

- A fire extinguisher must be at hand wherever refuelling is carried out;
- Smoking or open flames within 10 metres of a fuel / flammable liquid storage / refuelling area is strictly prohibited;
- No petrol or diesel powered vehicle or equipment may be refuelled while the engine / motor is running;
- Cellular phones must be switched off in fuel / flammable liquid storage / refuelling areas;
- Spill clean-up kits (containing a suitable absorbent fibre product) must be provided;
- Any spillages must be cleaned up immediately and all contaminated cleaning materials must be disposed of in accordance with the applicable legislation;
- If a flammable liquid is spilt or is leaking from a container / vessel, the area must be cordoned off and appropriate warning signage must be displayed to keep unauthorised personnel away from the affected area. Every effort must be made to contain the spillage. All hot work in the vicinity must be stopped immediately. If the spilt product is volatile and the possibility exists that a vapour cloud may form, or if the leak or spillage cannot be contained or stopped, then appropriate emergency response procedures must be activated, including the evacuation of all persons in the vicinity. Suitable fire fighting equipment must be positioned ready for use should the spilt product ignite;
- The manual decanting of fuel or a flammable liquid from a large container should only be done using a stirrup pump (or similar) or a purpose-made frame which allows the container / drum to tilt for decanting and then return to the upright position;
- Drip trays must be used wherever required;
- All tanks, drums, cans, etc. containing flammable liquids must be tightly closed and properly sealed except for when a container is being filled or when a product is being decanted;
- The transport or storage of corrosive or flammable liquids in open containers is strictly prohibited;
- Daily-use quantities of fuel (up to a maximum of 20 litres) must be handled in an approved safety can with a flash arresting screen, spring closing lid and spout cover that will safely relieve internal pressure if the can is exposed to fire;
- Where safety cans may be impracticable, only approved metal containers with screw caps may be used. Each container must be clearly labelled to indicate its contents;

- Only small quantities of flammable liquids (paints, solvents, etc.) may be stored within a building. Each product must be kept either in its original container or in an approved container which must be properly sealed. Each container must be clearly labelled to indicate its contents. When not in use, all such containers must be stored in a well-ventilated steel cabinet which must be kept locked to prevent unauthorised access;
- Not even small quantities of flammable liquids may be stored or dispensed in buildings or places of public assembly, in general warehouses, or in buildings containing sources of ignition such as space heaters, cooking devices, open electric motors, motor vehicles, or where welding, cutting, or grinding activities are being carried out;
- Safe Work Procedures must be compiled for the transportation (including delivery), offloading, storage, handling and use of any fuel / flammable liquid on site;
- All personnel that will be required to work with or may come into contact with a flammable liquid must be made aware of the hazards associated with the product and must be thoroughly trained in the safe transportation, use, handling and storage thereof.

48. Fire Protection and Prevention

The contractor must compile a Fire Protection and Prevention Plan for the work that will be carried out on site.

The contractor must assess / survey his area of responsibility and identify locations where the risk of fire is high. Cognisance must be taken of the fact that certain locations may need to be designated as high risk due to the presence of large quantities of flammable or combustible materials / substances. For all high risk areas, the contractor must ensure that additional precautions are taken to prevent fires and strict control is exercised over any hot work (i.e. welding, cutting, grinding, etc.) that is carried out.

The contractor must supply and maintain all required fire-fighting equipment. The type, capacity, positioning, and number of fire-fighting appliances must be to the satisfaction of the nominated project management representative and must meet the requirements of the applicable legislation. Fire mains, hydrants and hose reels will rarely be available on site, so use must primarily be made of portable fire extinguishers.

Fire-fighting equipment, fixed and portable, must be strategically located with a view to being able to rapidly deploy the equipment in order to bring potentially dangerous and destructive fires under control while still in their infancy.

All fire extinguishers (and any other fire-fighting equipment) placed on site must be:

- Conspicuously numbered;
- Recorded in a register;
- Visually inspected by a competent person on a monthly basis (the results of each inspection must be recorded in the register and the competent person must sign off on the entries made); and
- Inspected and serviced by an accredited service provider every six months (the nominated project management representative may require that this frequency be increased depending on the environmental conditions (e.g. high dust levels, water, heat, etc.) to which the fire extinguishers are exposed).

Any fire extinguisher that has a broken seal, has depressurised, or shows any sign of damage must be sent to an accredited service provider for repair and / or recharging. Details must be recorded in the register.

Fire-fighting equipment may not be used for any purpose other than fighting fires. Disciplinary action must be taken against any person who misuses or wilfully damages any fire-fighting equipment.

Access to fire-fighting equipment, fixed or portable, must be kept unobstructed at all times. Approved signage must be in place to clearly indicate the location of each permanently mounted fire extinguisher, fire hose reel, etc.

The contractor must ensure that all persons working in / entering his area of responsibility are made aware of where all fire-fighting appliances and alarm points are located. The contractor must ensure that his employees (and those of any appointed sub-contractors) are trained in fire-fighting procedures and the use of fire-fighting equipment.

The contractor must compile an emergency response procedure detailing the actions that must be taken in the event of a fire or a fire / evacuation alarm. All personnel working within the contractor's area of responsibility must be trained, and all visitors must be instructed, on this procedure. Copies of the procedure must be prominently displayed in the workplace in all languages commonly used on the site.

Used fire extinguishers must be replaced by the contractor without delay.

No hot work (i.e. welding, cutting, grinding, etc.) or any other activity that could give rise to a fire may be performed outside of a designated workshop without a Permit to Work having been issued.

Wherever hot work is being carried out, a fire extinguisher must be at hand. Where the risk assessment determines that it is necessary, a fire watch must be stationed. Supervisors must carry out workplace inspections regularly to ensure adherence to fire prevention measures and procedures.

At the end of every working period (i.e. before each tea / lunch break and at the end of every shift / day), the workplace must be thoroughly inspected to ensure that no material is left smouldering and no condition / situation exists that could give rise to a fire.

The contractor must ensure that all supervisors and all employees carrying out or assisting with any hot work or any other activity that could give rise to a fire have been trained in fire-fighting procedures and the use of fire-fighting equipment. The training must be conducted by an accredited training provider.

When using electrical equipment, all cables must be in good condition and the nearest convenient socket must be used. No power socket may be loaded beyond its rated capacity through the use of adaptors, etc. Makeshift electrical connections are not permitted under any circumstances. Water-based fire-fighting equipment must not be used on electrical equipment or burning liquids.

Each vehicle used on site for work purposes and each item of mobile equipment with a diesel or petrol engine must be fitted with a permanently mounted fire extinguisher. Smoking is only permitted in designated smoking areas. Cigarette ends / butts must be properly stubbed out in the ashtrays provided and never thrown into waste bins.

The contractor must ensure that good housekeeping practices are enforced, as this is crucial to the prevention of fires.

All combustible waste materials must be removed from the workplace on a daily basis (at the end of each shift) and placed in waste receptacles located at least 5 metres away from any structure.

The accumulation of waste materials in out-of-the-way places is prohibited. Offices, desks, cabinets, etc. must always be kept tidy and uncluttered. Waste paper bins must be emptied regularly.

The storage of combustible materials under stairways or in attics is prohibited. The storage of any materials against the exterior of a building or any other structure is prohibited. All walkways, passages and stairways must be kept clear (i.e. must be unobstructed) at all times, as they may need to be used as a means of escape.

The areas around and the routes to all exits, fire escape doors, fire hydrants, fire hose reels and fire extinguishers must be kept clear (i.e. must be unobstructed) at all times. "No Smoking" signs must be conspicuously displayed in and around all storage areas / rooms. Waste may not be burned under any circumstances.

No flammable liquid (such as petrol, acetone, alcohol, benzene, etc.) may be used for starting fires or as a solvent for cleaning clothes, tools, equipment, etc. Only solvents approved by the nominated project management representative may be used for cleaning purposes.

Whenever any work is carried out involving the use of a flammable substance / material, the area must be cordoned off and appropriate warning signage (i.e. "No Unauthorised Entry", "No Smoking" and "No Naked Flames") must be displayed.

49. Smoking

The contractor must not permit smoking on site except within designated smoking areas selected in accordance with the applicable legislation. Such an area must be clearly demarcated and the required signage must be displayed.

Any person found smoking or discarding a cigarette butt outside of a designated smoking area may be removed (temporarily or permanently) from site. In all designated smoking areas, adequate non-combustible commercial ashtrays and / or cigarette butt receptacles (butt cans) must be provided.

Ashtrays and other receptacles provided for the disposal of smoking materials must not be emptied into rubbish bins or any other container holding combustible materials. "No Smoking" signs must be strictly observed.

50. Housekeeping

The contractor must maintain all work areas in a tidy state, free of debris and rubbish. Unless directed otherwise, the contractor must dispose of all debris, rubbish, spoil and hazardous waste off site in a designated and authorised area or facility. The contractor must familiarise himself with the waste management plan for the site including collection and disposal arrangements, and must align his waste management activities accordingly.

In cases where an inadequate standard of housekeeping has developed and compromised safety and cleanliness, a nominated project management representative may instruct the contractor to cease work until the area has been tidied up and made safe. Neither additional costs nor contract deadline extensions will be allowed as a result of such a stoppage. Failure to comply will result in a clean-up being arranged through another service provider at the cost of the non-complying contractor.

The contractor must carry out housekeeping inspections on a weekly basis to ensure maintenance of satisfactory standards. The contractor must document the results of each inspection. These records must be maintained and must be made available to the nominated project management representative on request.

The contractor must implement a housekeeping plan for the duration of the contract ensuring that the site housekeeping is maintained. Furthermore, at the end of every shift, the contractor must ensure that all work areas are cleaned, all tools and equipment are properly stored, and construction rubble is removed.

Where the contractor fails to maintain housekeeping standards, the nominated project management representative may instruct the contractor to appoint a dedicated housekeeping team for the duration of the project at the contractor's expense. Littering is prohibited.

51. Waste Management

Waste may not be disposed of unless the disposal of that waste is authorised by law. The contractor must therefore ensure that all waste that is generated is handled, stored, transported and disposed of in accordance with the requirements of the applicable legislation / local authority.

52. Stacking and Storage

All irregular shaped items will be stacked at floor / ground level in designated stacking areas on a level, firm base capable of withstanding the weight of the commodities being stacked and stacked in such a manner that the items do not topple over or change position due to subsidence or weight transfer when being moved.

Where these commodities are stacked on shelves or racks, the shelves or racks must be designed to carry the weight of the commodity being stacked. All racks or shelves where heavy material or commodities are stacked will have a weight carrying limitation clearly marked on the structure and have a safety factor of at least +10% of maximum total carrying capacity.

All materials, commodities or articles, which could be damaged due to inclement weather, must be stored under cover. Waste material that is combustible must not be allowed to accumulate in sufficient quantities to create a hazard.

No commodities or equipment may be stacked or stored within 500mm of rolling stock tracks or where mobile equipment travels. The storage of material, small equipment, tools, files and general items in cupboards and on shelves must be neat and controlled at all times. Incompatible substances must not be stored in or on the same cupboard or shelf.

No equipment, tools, files or documents may be stored or stacked on top of cupboards which are higher than 1.5 metres in height.

53. Demarcation

No demarcation of floors is required inside offices.

Temporary demarcation may be used to demarcate areas where there is, for relatively simple reasons, restricted access. Where hazards exist and entry must be specifically excluded for safety or health reasons, hazard tape in any form must not be used in isolation. A robust and substantial barrier of timber, rope or other material must be used in conjunction with barrier tape, to prevent entry to unauthorised persons.

Outside storage areas where it is impractical to use floor demarcation, demarcation may take the form of creosote poles and wire rope or similar. Spans between uprights should be painted yellow.

54. Facilities

Sanitary conveniences must be provided and maintained at a rate of at least one shower facility for every 20 workers, at least one toilet facility for every 10 workers, separate male and female changing facilities and sheltered eating areas.

Where chemical toilets are provided, one toilet for every 10 employees must be allocated. All toilets must be cleaned daily, disinfected and provided with toilet paper. All employees making use of these facilities have the responsibility to help keep the facilities neat, clean and hygienic.

Washing facilities, including soap and towels, must be made available for use by the contractor's employees.

Drainage from all washing / toilet facilities must be properly designed and constructed to prevent employee exposure to waste water (and the associated biological hazards). Waste water may not accumulate or stand in pools at any location on the project site.

Change rooms must be provided and must be kept clean and free from odours at all times. No chemicals, except those normally used for domestic cleaning of these facilities, may be stored in the facilities.

No equipment or items (other than those normally associated with hygiene facilities) may be stored in the facilities. All entrances must be constructed in a way to afford privacy to users.

Drinking water must be provided from an approved source. A sheltered (covered) area must be set aside on site to be used as a dining facility (eating area). Adequate seating must be provided for the maximum number of employees. The facility must be kept clean and tidy.

A suitably sized, impervious receptacle (bin) must be provided for the disposal of waste food and other refuse generated at the dining facility. This bin must be emptied and cleaned regularly (i.e. promptly after meal times).

Food may only be consumed in authorised sheltered areas. Adequate refrigerated storage must be provided to the contractor's employees for the storage of food and drinks. Fridges must not be overstocked and must maintain sufficiently low temperatures.

55. Occupational Hygiene

The contractor must ensure that the exposure or potential exposure of his employees to any of the following stressors is assessed and measured:

- Noise;
- Thermal stress (heat and cold);
- Particulates (dust);
- Silica (free crystalline silica);
- Asbestos;
- Gases or vapours;
- Lead;
- Chemicals;
- Ionising radiation;
- Non-ionising radiation;
- Vibration (hand / arm vibration and whole body vibration);
- Ergonomics; and
- Illumination.

If it is determined that exposure levels for a particular stressor are unacceptable, then a monitoring and control plan must be implemented to manage any risk of overexposure.

Note: Where chemical substances are to be used as part of the refurbishment process, the contractor must ensure that the chemical composition of each substance is known.

Carcinogenic (cancer-causing) ingredients must be specifically identified with due understanding that no chemical known to cause cancer will be permitted for use on site (an alternative will need to be sourced).

The contractor must conduct an Occupational Health Risk Assessment in respect of their project activities. The contractor will be required to appoint an Approved Inspection Authority (AIA) for Occupational Hygiene to conduct Occupational hygiene Surveys should such a need arise.

55.1 Lighting

For all work areas and access ways, if the natural lighting available is inadequate it must be supplemented by artificial lighting to meet the minimum levels required.

A lighting survey to determine luminance must be conducted for all work areas, at least once prior to work commencing for the first time in any area.

Emergency lighting must be provided in all indoor workplaces that do not have adequate natural lighting or in which persons work at night. The emergency sources of lighting that are provided must be such that, when activated, an illuminance of not less than 0.3 lux is obtained at floor level, to enable employees to evacuate safely.

Where it is necessary to stop machinery or shut down plant or processes before evacuating the workplace, or where dangerous materials are present or dangerous processes are carried out, the illuminance must not be less than 20 lux.

Windows and translucent sheeting must be kept adequately clean and clear of obstructions as far as reasonably practicable. Light fittings, i.e. lenses and reflectors must be kept clean. If a light intensity meter is used, a valid calibration certificate must be available.

Neon lights must not be installed in areas where moving parts of machinery or equipment cannot be fully guarded, i.e. lathes, bench grinders, etc. in order to eliminate the stroboscopic effect. No person may use a portable electrical light where the operating voltage exceeds 50 volts, unless:

- It is fitted with a non-hydroscopic, non-conducting handle;
- All metal parts which may become live are protected against accidental contact;
- The lamp is protected by means of a guard firmly attached to the handle; and
- The cable can withstand rough use.

No person may use a portable electric light in damp or wet conditions or in closely confined spaces, inside metal vessels or when in contact with large masses of metal, unless:

- The lamp is connected to a source incorporating an earth leakage; and
- The operating voltage of the lamp does not exceed 50 volts.

All lighting on site must comply with the requirements of the Environmental Regulations for Work Places GNR2281 of 16 October, 1987.

55.2 Noise

A hearing conservation program must be implemented and protection against the effects of noise exposure must be provided when the noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 decibels measured on the A-weighted scale of a standard sound level meter at slow response.

For the hearing conservation program to be effective it must include as a minimum:

- Monitoring of the workplace to determine the representative exposure of employees to excessive noise levels;
- An audiometric testing program for employees, which must include:
 - A baseline audiogram for all employees exposed to noise levels equal to or in excess of the standard;
 - Audiograms for each overexposed employee at a frequency determined by the OMP;
 - Analysis of audiogram results with retesting and/or referral to an otolaryngologist or qualified physician when a significant threshold shift (STS) occurs; and
 - Written employee notification of the STS.
- A training program for all employees exposed to noise;
- Provision of personal protective equipment to all affected employees when administrative or engineering controls fail to reduce sound levels to within the levels of the standards.

Monitoring of employee exposures to noise shall be conducted by an Approved inspection Authority (AIA).

The monitoring requirement may be met by either area monitoring or personal monitoring that is representative of employee exposures. Personal monitoring is preferred, and may be required based on the type(s) of noise sources.

For purposes of the hearing conservation program, employee noise exposures shall be computed in accordance with local legislation. A person-task specification shall be available for every job category and shall be submitted with an employee for audiometric testing.

Audiometric test results obtained from the pre-employment medical examination for a new employee shall be used as the baseline audiogram. Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise.

Hearing protectors shall not be used as a substitute for the requirement that baseline audiograms be preceded by 14 hours without exposure to workplace noise. Employees shall be notified of the need to avoid high levels of non-occupational noise exposure during this 14-hour period.

Record-keeping for the audiogram shall include, as a minimum:

- Name and job classification of the employee;
- Date of the audiogram;
- The examiner's name;
- Date of the last acoustic or exhaustive calibration of the audiometer;
- Employee's most recent noise exposure assessment.

Audiometric test results shall be maintained in the employee's medical file. To control noise exposure, its three basic elements shall be examined, i.e. source of the sound, travel path, and effect on receiver or listener. Solution of a given noise problem might require alteration or modification of any or all of these three basic elements.

Controlling noise at the noise source can be achieved by the following:

- Select quiet equipment initially. In selecting quiet equipment the following features shall be considered:
 - Low-noise certification;
 - Advertisement of "quiet" operation, evidence of noise control design;
 - Evidence of "lower" and "slower" operating characteristics;
 - Side-by-side noise testing of equipment; and
 - "On-site" or "in operation" inspection of mechanical equipment before purchase.
- Reduce operating noise by considering the following control measures:
 - Reduce impact or impulse noise by reducing weight, size, or height of fall of impacting mass;
 - Reduce speed in machines and flow velocities and pressure in fluid systems;
 - Balance rotating parts – to control machinery noise and vibration of fans, fly wheels, pulleys, cams, etc.
 - Reduce frictional resistance between rotating, sliding or moving parts in mechanical systems: frequent lubrication, proper alignment of moving parts; static

and dynamic balancing of rotating parts; correction of eccentricity or "out-of-roundness" of wheels, gears, rollers, pulley, etc.;

- Reduce resistance in air or fluid systems: use of low flow velocities, smooth boundary surfaces of duct or pipe systems, and long-radius turns and flared actions in pipes, etc., to reduce turbulence noise;
- Isolate vibration elements in machinery; install motors, pumps, etc. on most massive part of machine; use belt or roller drives in place of gear trains; use flexible hoses and wiring instead of rigid piping and stiff wiring, etc.
- Apply vibration damping materials such as liquid mastic; pads of rubber, felt, foam or fibrous blankets; or sheet metal visco-elastic laminates or composites to vibrating machine surfaces; and;
- Reduce noise leakage from the interior of machines such as compressors by sealing or covering all openings or applying acoustical materials to machine interiors.

Controlling noise in the transmission path can be achieved by the following:

- Separate the noise source and receiver as much as possible;
- Use sound-absorbing materials on ceiling, floor or wall surfaces as close to the machine as possible;
- Use sound barriers and deflectors in the noise path;
- Use acoustical lining on inside surfaces of such passageways as ducts, pipe chases, or electrical channels;
- Use mufflers, silencers or snubbers on all gasoline or diesel engines, regardless of size; and particularly on equipment when large quantities of high-pressure, high-velocity gases, liquids, steam or air are discharged into the open air; and
- Use vibration isolators and flexible couplers where the noise transmission path is structure borne in character.

Protection for the receiver – when engineering controls fail to reduce the levels to within the levels specified in local legislation, the following measures shall be implemented:

- Personal protective equipment shall be provided and replaced as necessary at no cost to employees;
- Supervisors shall ensure that hearing protective devices are worn by all employees who are exposed to a time-weighted average of 85 decibels or greater and who have experienced a significant threshold shift;
- Employees shall be given the opportunity to select their hearing protectors from a variety of suitable protectors.

Noise zones shall be indicated by means of signs at every entrance to such zones. When noise levels exceed 100 dB(A), a combination of earplugs and earmuffs may be required to achieve protection of the worker. It is important to note that using double protection will add only 5 to 10 dB of extra attenuation above that of a single Hearing Protection Device. Where an earmuff and earplugs are used together, OSHA recommends using this simple calculation: Take the higher rating of the two devices, and add five. Hearing Protection Devices should be worn for the full noise exposure period.

Where an audiometry programme is required, it must meet the following standards:

- All testing must be by pure tone audiometry in an approved audiometry booth or quiet room, with measured noise levels less than 40 dB(A);
- The initial audiogram must be taken prior (minimum of 24 hours) to exposure to significant noise. Further audiograms must be taken periodically; annually where exposures are over 85 dB(A) Leq or where continued deterioration to hearing is occurring;
- Testing must be performed by trained and competent personnel;
- Audiometers must be calibrated according to the manufacturer's guidelines. As a minimum these will be a weekly biological calibration using an employee unexposed to noise, or a bio-acoustic simulator, and an annual quantitative check. All results must be documented; and
- Audiograms must be read by trained persons who will identify any increasing hearing loss and then determine if this is noise induced. Any employee with a significant downward shift in one or both ears (measured as an average non age-adjusted loss from baseline of 10 dB at 2, 3 or 4 kHz) must be retested following removal from noise for a minimum of 24 hours, usually after a days-off period. If the downward shift persists the employee must be reviewed by a physician and improved hearing protection considered.

55.3 Particulate and Gas / Vapour Exposure

Designated areas must be created where:

- It is likely that the 95 per cent upper confidence limit of a Specific Exposure Group's (SEG) mean exposure concentration for agents resulting in chronic effects (such as total inhalable dust, respirable dust, respirable crystalline silica, PAH, fluorides, lead, mercury, asbestos or non-asbestos fibrous materials) exceeds the relevant OEL; and

- Agents with an acute effect, such as particulate hazards, or gases (e.g. CO, SO₂, NH₃, HF, etc.), or vapours exceed 50 per cent of the relevant OEL.

Designated areas must:

- Be identified and mapped, signposted or otherwise clearly communicated to employees working in the area. Signposting, where necessary, must use appropriate wording or symbols on signs to identify the hazard;
- Have a documented respiratory protection programme based on suitable risk assessment and standards, which is applied to employees, contractors and visitors;
- Have regular monitoring of SEGs working in the area; and
- Have a formal review of the practicality of engineering controls at least every two years, or less where it is a critical control for a significant risk.

Particulate and gas / vapour monitoring must be appropriate to the exposure conditions and toxicants, and based on the use of equipment approved by local regulatory authorities, as per documented methods.

Where risk assessment indicates the possible presence of levels of gas or vapour sufficient to cause health effects in less than one shift (e.g. confined space entry), continuous monitoring is required as long as the potential for harm exists.

Employees and contractors must be covered by a medical surveillance programme when:

- Their Specific Exposure Group TWA mean exposure to respirable crystalline silica, total inhalable dust, respirable dust, lead or asbestos is greater than 50 per cent of the relevant OEL;
- The medical adviser considers that it is advisable; or
- There is a legal requirement for medical monitoring.

Where risk assessment indicates a risk of a respiratory condition, assessment programmes must include chest x-rays and / or lung function tests. The test or tests chosen must enable the earliest detection of adverse effects from the exposure of concern. Where indicated, they must meet the following standards:

- High quality chest x-rays will be taken every five years, unless local legislation requires these to be more frequent;
- All chest x-rays for pneumoconiosis surveillance will be read to International Labour Organisation (ILO) standards by an ILO B reader, wherever possible, and if not, by a competent radiologist using verifiable quality criteria;

- Any progression of more than one step on the ILO extended scheme to a reading above 1/0 will be reviewed by a physician;
- Any reading suggesting active lung disease will be reviewed by a physician; and
- All spirometry will be performed by trained staff following the American Thoracic Society guidelines or equivalent and be offered at a frequency determined by the likely rate of detectable change in lung function.

Controls must be of an adequate standard such that surfaces are adequately cleaned to avoid:

- Dust generation due to material dislodgment (e.g. windblown), where practicable; or
- Fume generation from accumulated dust during welding / heating or cutting operations.

Where risk assessment indicates the need to reduce exposures to toxic substances for employees or their families, good personal hygiene must be enforced. The programme must include:

- No smoking, eating or drinking in designated hazard areas;
- Washing of hands and face prior to drinking, eating or smoking;
- Showering at work post shift or after exposure to 'dirty' conditions; and
- Laundering of contaminated clothing by the contractor.

Abrasive blast cleaning must be conducted so as to protect worker health and minimise dust emissions. Substitutes must be used whenever practicable for abrasives containing crystalline silica. However, if such abrasives are used, workers must be aware of the hazards and exposure monitoring conducted. The hazardous properties of alternative materials must be considered before use.

Where required, training in the recognition of signs and symptoms of hazardous particulate and gas / vapour exposure, emergency procedures and preventative measures must be provided.

55.4 Respiratory Protection Devices

The selection of Respiratory Protection Devices (RPD's) must be based on:

- The potential particulate size distribution, gas / vapour types, substance toxicity and likely concentrations;
- Compatibility with the work tasks and other PPE; and

- Comfort (as it affects wear-time) and allowance for adequate communication.

Only RPD's approved by the nominated project management representative may be used. Suitable facilities must be available for cleaning and sanitary storage of RPD's.

Half-mask and full-face air-purifying respirators must NOT be used where:

- The atmosphere is oxygen deficient (< 19.5 per cent);
- The atmosphere is immediately dangerous to life or health (e.g. in areas where CO concentrations are > 1500 ppm, HF > 30 ppm or NH₄ > 300 ppm);
- Gases and vapours are more than ten times their OEL or greater than 1000 ppm for half-mask respirators, or more than 100 times their OEL for full-face respirators; or
- Particulates are more than five times their OEL for half-mask respirators, or more than 50 times their OEL for full-face respirators.

For atmospheres that are oxygen deficient, or contain unknown hazards, or have concentrations of gases and vapours that are unknown, or could potentially exceed levels that are immediately dangerous to life or health, an air-supplied type respirator must be worn.

For effective use of negative pressure RPD's (including disposable RPD's), fit testing must be qualitative and documented as a minimum, although quantitative fit testing is preferred. Fit testing must be performed by a competent person when RPD's are first issued and must be repeated periodically according to legal requirements or two-yearly as a minimum frequency. There must be a policy requiring a clean shaven face when using a negative or neutral pressure RPD for routine tasks, or the use of a positive pressure RPD will be required. A pulmonary function test and medical evaluation may be required to determine whether or not an individual is medically fit to wear a respirator.

For air-supplied RPD's, breathing air must be effectively filtered and / or isolated from plant and instrument air, and isolated from sources of potential contaminants. The quality of the breathing air must be checked for conformance with applicable standards.

The respiratory protection programme must include:

- Periodic inspection of RPD's, including before each use;
- Periodic evaluation of cleaning, sanitising, maintenance and storage practices by competent persons;

- Performance of positive and negative fit checks before each use by RPD wearers to ensure that the respirator is functioning properly; and
- Training at first issue of a RPD and regular refresher training thereafter in accordance with regulatory requirements or at least once every two years.

55.5 Hazardous Chemical Substances

No chemical substance may be brought onto site unless it has been approved for use by the nominated project management representative. The contractor must develop and maintain a hazardous chemical substance register specifying as a minimum the type and volumes of substances on site.

If the contractor wishes to make use of a chemical substance that does not appear on the register, then the contractor must provide the following minimum information to the nominated project management representative for review PRIOR to bringing the substance onto site:

- A detailed 16-point Material Safety Data Sheet (MSDS) issued by the manufacturer / supplier of the substance;
- The reason for wanting to bring the substance onto site (i.e. the intended use of the substance);
- The proposed method of transportation;
- The proposed arrangements for the safe storage of the substance;
- The quantity to be stored on site;
- The proposed methods for handling / using the substance (including PPE);
- The proposed method of disposal of the waste;
- Proof that the contractor is able to readily provide the necessary first aid measures as specified in the MSDS; and
- A risk assessment covering the transportation, use, handling, storage and disposal of the substance with specific reference to the substance's compatibility with other chemicals.

This information must be provided at least five (5) working days prior to the date on which the contractor intends to bring the substance onto site for use. Any chemical substance brought onto site without adherence to the requirements stipulated above shall be removed from site immediately.

If the nominated project management representative approves the substance for use, the contractor must ensure that all necessary precautions are taken concerning the transportation, use, handling, storage and disposal of the substance, and that all required PPE and first aid materials / equipment (as stipulated in the MSDS) are readily available on site.

The contractor must ensure that a Material Safety Data Sheet (MSDS) is obtained for each chemical substance brought onto site. A file, or files, containing all of the MSDS's must be maintained and must be readily available to all personnel on site (particularly first aiders) as well as other potentially affected parties (e.g. emergency services personnel, persons from the local community, etc.). The MSDS's must be in the language(s) commonly used on site.

The contractor must appoint a trained and competent Hazardous Chemical Substances Coordinator who understands and is able to evaluate the risks associated with a wide variety of substances. This person shall be responsible for:

- Assessing the hazardous properties and risks associated with all chemical substances brought onto site by the contractor and appointed sub-contractors (using the MSDS's);
- Determining precautions and safe practices for transportation, use, handling, storage and disposal (including PPE requirements) (using the MSDS's);
- Determining first aid and emergency response requirements / procedures (using the MSDS's);
- Maintaining the MSDS file;
- Managing and monitoring the consumption of inventory; and
- Providing an "as needed" service to site personnel and suppliers.

The risks associated with the transportation, use, handling, storage and disposal of all hazardous chemical substances brought onto site must be assessed and managed by the contractor through a process that incorporates risk reduction using the hierarchy of controls as described as described by this Specification. Whenever a task-based risk assessment is carried out, consideration must be given to the use of chemical substances (e.g. greases, solvents, etc.).

The contractor must provide Safe Work Procedures for the transportation, use, handling, storage and disposal of all hazardous chemical substances to be used on site.

The contractor must provide his employees with all of the Personal Protective Equipment that is necessary to prevent exposure / injury while handling / using the hazardous chemical substances that they will be required to work with. Appropriate PPE must be selected with consideration given to the potential hazards, permeability, penetration, resistance to damage and compatibility with the work tasks.

The contractor's employees must be trained in the safe transportation, use, handling, storage and disposal of the hazardous chemical substances that they will be required to work with or may come into contact with. The training must specifically address PPE requirements (including the correct selection, fitment and use thereof).

All personnel must be trained to understand the potential health effects associated with exposure to hazardous chemical substances and therefore the importance of Safe Work Procedures and PPE. All personnel must be trained on emergency response procedures and first aid measures. Behaviour-based observations and coaching must include the use / handling of hazardous chemical substances.

An appropriate occupational exposure monitoring and medical surveillance programme must be in place for all personnel potentially exposed to hazardous chemical substances which have the potential to cause immediate or long-term harm.

Emergency showers and eyewash stations must be provided where required by law, or where a risk assessment indicates a need. The emergency showers and eyewash stations must be appropriately located, signposted, and regularly tested and maintained. Employees must receive training on the location and use of the showers / eyewash stations.

An emergency response plan for incidents involving hazardous chemical substances must be in place. Regular and appropriately staged emergency drills (possibly involving external spill response and ambulance support services) must be held and lessons learnt must be incorporated into the emergency response plan.

The contractor must provide appropriate storage facilities for all hazardous chemical substances to be used on site. The storage facilities must be secure and protected from damage. They must also be designed for easy access for firefighting purposes. Where

applicable, the storage facility must protect chemical containers from physical damage due to temperature extremes, moisture, corrosive mists or vapours, and vehicles.

The inventory of hazardous chemical substances stored on site must be kept to a minimum. The quantity of each chemical stored must be justifiable.

Storage and segregation requirements for all hazardous chemical substances to be used on site must be based on:

- The quantities of the substances stored;
- The physical state of the substances (solid, liquid or gas);
- The degree of incompatibility; and
- The known behaviour of the substances.

Access to areas where hazardous chemical substances are stored and handled must be limited and controlled.

Every chemical substance container must be adequately and clearly labelled to identify its contents, to indicate precautionary requirements for the substance, and to indicate the date of expiry (if applicable). Pipes used to transfer / convey / distribute chemical substances must be clearly identified (e.g. colour coding). Directional flow must be indicated where practical.

Before any item, equipment or empty container containing a chemical residue is disposed of as general waste, it must be properly decontaminated (where applicable). Before being disposed of, empty chemical containers must also be rendered unusable for carrying water (by puncturing, cutting or crushing them).

Hazardous chemical substance waste (i.e. redundant / expired hazardous chemical substances, containers containing residues, contaminated items / materials, etc.) must be disposed of in accordance with the applicable legislation.

Maintenance, inspection and testing schedules and procedures must be in place for critical equipment associated with hazardous chemical substances. A system must be in place to ensure that the risks are assessed before any changes are made to equipment and / or processes for the transportation, storage, handling, use or disposal of a hazardous chemical substance.

A programme must be in place to continually investigate possibilities / opportunities for replacing hazardous substances with safer alternatives.

55.6 Thermal Stress

Hot areas or activities where employees have experienced or could experience excessive fatigue, muscle cramp, dehydration, dizziness and other symptoms of heat stress must be identified and described.

Where a risk of thermal stress is determined, a competent person must conduct monitoring surveys on site, in consultation with workers.

For defined extreme thermal conditions and job activities, medical examinations must include information about the operator's physiological and biomedical aspects, and an assessment of fitness for the working conditions.

Cold areas or activities where employees have experienced or could experience pain or loss of feeling in extremities, frostbite, severe shivering, excessive fatigue and other symptoms of cold stress must be identified and described.

Workplace thermal stress levels (temperature, air movement, humidity, etc.), activities (work level, etc.) and conditions (clothing, health, etc.) that have the potential to exacerbate thermal stress effects must be adequately characterised and described. Workplace exposure assessment must be repeated according to regulatory requirements or whenever there is a change in production, work organisation, process or equipment which may impact thermal stress levels.

Detailed heat stress assessment of identified tasks or jobs must be tiered to:

- Commence with the use of a simple heat stress index as a screening tool; then, if necessary;
- Use rational heat stress indices in an iterative manner to determine the 'best' control methods for alleviating potential heat stress; and
- Undertake physiological monitoring when exposure times are calculated to be less than 30 minutes, or where high level PPE that limits heat loss must be worn.

Detailed cold stress assessment of identified tasks or jobs must be conducted according to current appropriate guidelines that incorporate a cold stress index, to determine the 'best' control methods for alleviating potential cold stress.

When a risk of thermal stress is identified, the following exposure controls must be implemented:

- An acclimatisation period for new workers and those returning from extended leave or sickness;
- Training in the recognition of signs and symptoms of heat or cold stress, emergency procedures and preventative measures;
- Protective observation (buddy system or supervision); and
- A requirement for self-paced working.

The following exposure controls must be considered by a competent person:

- Work / rest regimes and job rotation based on measurements conducted;
- Suitable rest areas with a provision of cool drinking water and cool conditions for high temperatures, or provision of warm drinks and warm conditions for cold temperatures;
- Selection of appropriate clothing or other PPE for extreme temperature conditions;
- The use of engineering controls; and
- Undertake hot / cold tasks during a cooler / warmer time of the day.

Where thermal stress is assessed to be a risk, the operation must develop a suitable emergency response plan.

55.7 Fitness for Work

The contractor must develop and implement a programme to manage employee fitness for work. All employees working on site for whom the contractor is responsible (i.e. direct employees of the contractor as well as the employees of any appointed sub-contractors) must be subject to this programme.

All safety critical jobs (i.e. roles where fatigue or other causes of reduced fitness for work could lead to serious injury, illness or death to employees, significant equipment / plant damage, or significant environmental impact) must be identified and the risks associated with reduced fitness for work in these roles must be assessed.

A programme to manage these risks must be implemented, and it must include:

- Mechanisms for managing fatigue, stress and lack of fitness;
- An alcohol and other (including prescription, pharmaceutical or illicit) drugs policy that includes testing;
- An Employee Assistance Programme providing confidential access to resources and counsellors; and
- Training and awareness programmes.

Each employee has an obligation to present himself fit for work at the start of the day / shift, and to remain fit for work throughout the work period. Reporting for work under the influence of alcohol or any other intoxicating substance will not be tolerated. Any transgression concerning the alcohol and other drugs policy applicable to the project may result in the offending employee's access to the project premises being temporarily or permanently withdrawn.

Alcohol and drug testing on the project premises will be carried out randomly (as employees report for duty and during the course of the day / shift), following any incidents (all persons involved), and whenever there is reasonable suspicion. Alcohol and drug testing must also be carried out as part of a Pre-Employment Medical Examination.

Sleep deprivation during shift work or from excessive working hours is a known cause of fatigue. Fatigued employees are at increased risk of accidents. Shift system design must consider:

- The effect on worker fatigue;
- The effects of activities carried out during scheduled and overtime hours;
- The impact on sleep cycles of activities such as commuting to and from site; and
- The monitoring and control of working hours.

The contractor is responsible for the administration of the working hours of his employees as well as the employees of any appointed sub-contractors. The maximum working hours per day and the minimum rest times between shifts must be specified in the contractor's Health and Safety Management Plan and must comply with all applicable legislation.

All employees are required to undergo fitness assessments (medical examinations) which must be carried out prior to the commencement of employment on the project, prior to a change in role, periodically based on an employee's individual risk profile, and on termination of employment on the project:

- Pre-Employment Medical Examination – to assess the physical suitability of the person for the role and environment in which he will work (carried out prior to the commencement of employment on the project and prior to induction). The contractor must take note that employee medicals for this project must include a drug test;

- Periodic (Surveillance) Medical Examination – to assess the ongoing physical condition of an employee to determine if his role is impacting on his health and whether the employee's fitness level is still adequate for the role he holds (these medical examinations are "risk driven" – the specific protocol followed and the frequency of the examinations will depend on the applicable legal requirements and the employee's individual risk profile as determined by his personal fitness, the nature of his role / duties, and the environment in which he works / occupational health hazards to which he is exposed).
- The periodic medical assessment programme must include:
 - ♦ The identification of modifiable risk factors that may impact fitness for work;
 - ♦ Education and support to maintain health or address identified risk factors; and
 - ♦ Education and support to help employees regain their fitness for work.
- Role Change Medical Examination – to assess an employee's physical suitability for a different role and work environment (carried out prior to a change in role / duties);
- Exit (Post-Employment) Medical Examination – to determine the total physical impact of the work the employee performed (carried out on termination of employment on the project).

Note: The results of an Exit Medical Examination from previous employment will not be accepted as a Pre-Employment Medical Examination.

Note: The medical examinations described above may only be carried out by an Occupational Medical Practitioner employed by the Coega Development Corporation (CDC) within the Coega Industrial Development Zone (CIDZ) (i.e. a medical doctor who holds a qualification in occupational medicine).

A detailed job (role) description and an exposure profile (noise, dust, heat, fumes, vapours, etc.) must be provided for each employee or group of employees. The medical examinations that an employee undergoes must be based on (i.e. the employee's fitness must be assessed against) the information contained in these documents as well as the baseline risk assessment for the work. This information must be made available to the occupational medical practitioner performing the medical examination.

For each role, the medical criteria for fitness must be documented and these must be based on an evaluation of the physical and medical requirements for the role. Depending on the circumstances, certain vaccinations may need to be provided to employees.

The medical examinations carried out for all drivers and operators must include testing / assessment for medical conditions that could affect the safe operation of vehicles or equipment.

Specific testing / questioning must be carried out to determine if an individual:

- Suffers from epilepsy or any other medical condition deemed to be a risk by the occupational medical practitioner;
- Makes use of chronic medication that could affect performance;
- Is colour-blind; or
- Has poor day or night vision.

The medical examinations carried out for employees that are required to work at height must include testing / questioning to determine if an individual suffers from epilepsy, hypertension (high blood pressure) or any other medical condition deemed to be a risk (with regard to working at height) by the occupational medical practitioner. Electricians must be tested for colour-blindness.

With regard to the placement of new employees:

- Prospective employees must be referred to a suitable occupational medical practitioner (doctor) for a "Pre-Employment Medical Examination";
- If an individual is found to be medically "unfit for placement", the doctor will indicate which work activities cannot be performed by the person;
- The individual may still be employed on the project if his medical restrictions can be accommodated and provided that no legislation is transgressed.

A process must be established to manage medical restrictions that may be placed on an employee. For every employee with a medical restriction, regular follow up visits with the occupational medical practitioner must be arranged to ensure that each case is proactively managed.

An employee in a safety critical job must report (to his supervisor) any condition that might impair his ability to safely perform the duties associated with his role. A mechanism must be in place for such reports to be referred to an occupational medical practitioner to determine if the employee is fit to continue with his work.

Proof of all medical examinations (i.e. certificates of fitness signed by an occupational medical practitioner) must be kept on site and these records must be readily available for

inspection by the nominated project management representative.

An employee's certificates of fitness must be included in his Personal Profile (dossier). If an Employee Personal Profile (dossier) hasn't already been compiled for a particular employee, then this must be done without delay following the employee's Pre-Employment Medical Examination.

No employee may commence work on site without proof that he has undergone a Pre-Employment Medical Examination.

Occupational medical examinations and data interpretation may only be carried out by medical practitioners that are appropriately qualified and certified to do so. Occupational medical data contained in reports to management must be grouped and summarised to ensure that the confidentiality rights of each individual employee are maintained. All occupational medical data and records must be retained for at least 40 years.

55.8 Legionnaires Disease

All equipment with the potential for generating Legionella (such as cooling towers and associated equipment, air-handling systems, hot water services and showers) must be identified and the risks of contamination and aerosol generation assessed.

Where there is an assessed risk that Legionella could grow in the system and cause harm, a programme must be in place such that:

- All such equipment is identified on a register. The register must contain details of the regular maintenance, cleaning and checking programmes;
- Control measures are in place to minimise aerosol emissions;
- There must be a documented water treatment programme, including procedures for inspection, assessment and maintenance of the controls; and
- New or retrofitted equipment is designed and constructed to minimise the risk of Legionella growth.

Where available, the Legionella plate count test should be used if more effective methods are not available.

Good maintenance procedures must be followed to minimise the risk of significant contamination of equipment with other bacteria and microbial organisms.

Adequate procedures must be available for disinfecting systems if significant concentrations of Legionella bacteria are present. Once disinfected, systems must be retested to confirm effectiveness of treatment.

55.9 HIV / Aids

The contractor must assess the risks posed by HIV. Appropriate mitigation strategies must be implemented as required. Discrimination towards employees on the basis of actual or perceived HIV status is forbidden. All information on the HIV status and condition of employees including that relating to counselling, care and treatment and receipt of benefits, must be maintained in medical confidence.

HIV / AIDS screening may not be a requirement for recruitment or a condition of employment.

55.10 Measuring and Monitoring

The workplace exposure (or potential exposure) of persons to hazardous substances or agents must be measured and monitored to determine the effectiveness of control measures as well as compliance with legal and other requirements, particularly Occupational Exposure Limits. All such measuring and monitoring must be carried out by an Approved Inspection Authority (i.e. a specialist service provider that is appropriately registered with a governing authority).

A plan for measuring and monitoring occupational exposure must be developed and it must include, as a minimum:

- Detail of what must be measured and monitored, based on a risk assessment and / or identified legal or other requirements;
- The frequency of measurement and monitoring;
- A description of the necessary equipment;
- Data quality requirements and controls (including details on the sample size for statistical validation and any rejection criteria);
- The sampling and analysis method(s) including any laboratory certification requirements; and
- The competency requirements for persons carrying out workplace monitoring.

Each instrument and item of equipment used for occupational exposure measurement and / or monitoring must be:

- Properly maintained to ensure compliance with legislative requirements;
- Controlled and safeguarded from unintentional adjustments;
- Suitably stored and protected from damage; and

- Calibrated or verified against a traceable standard at specific intervals (calibration records must be retained).

Each analytical laboratory service that is used must have implemented a credible quality assurance or quality control programme.

All monitoring results obtained must be analysed on a regular basis to:

- Identify trends and potential exceedances of legal or other requirements (such as Occupational Exposure Limits);
- Identify inconsistent or unusual results;
- Evaluate the effectiveness of existing control measures;
- Measure performance against stated objectives; and
- Identify continual improvement opportunities.

Each exceedance of a specified requirement or limit must be recorded, investigated and reported. Appropriate corrective actions must be identified and implemented.

55.11 COVID 19

The Principal Contractor to ensure that the latest and most updated legislated COVID 19 requirements, processes and procedures are complied with by all on site.

56. Emergency Preparedness and Response

The contractor must develop, implement, test and maintain an Emergency Response Plan (incorporating emergency evacuation procedures) that focuses specifically on the contractor's team and work activities. The plan must be risk-based and must detail the procedures that must be followed when responding to all potential emergency scenarios such as a medical emergency (including first aid response), a fire, an explosion, a hazardous substance spill, flooding, rescue from height, rescue from a confined space, etc.

Potential off-site emergency scenarios must be included (e.g. emergency scenarios related to the transport of personnel, the transport of hazardous materials, and personnel performing work in remote locations).

Consideration must be given to surrounding Port users and tenants, and to the availability and capability of local emergency services. Details of any arrangements with external emergency response service providers must be included.

The Emergency Response Plan must satisfy and comply with all applicable legal requirements. The plan must be adequately resourced to ensure effective implementation. These resources must include appropriate personnel, external emergency response service providers, emergency response equipment, and warning devices. All equipment and warning devices must be identified, maintained and tested to ensure availability at all times.

Accountability for the Emergency Response Plan must be clearly defined. An Emergency Response Team (ERT) responsible for the implementation, management and execution of the Emergency Response Plan must be established. The roles and responsibilities of each team member must be clearly defined in the plan. Each team member must receive appropriate training to ensure that each role is performed competently.

The process for managing incident communication, notification, and reporting must be incorporated into the Emergency Response Plan. The responsible person(s) must be clearly identified, and the protocols for communicating with internal and external stakeholders must be defined.

Emergency evacuation procedures must be developed and included in the Emergency Response Plan. A copy of the plan must be provided to the nominated project management representative for approval prior to site establishment. The Emergency Response Plan must be formally reviewed (and amended if necessary) when project needs require, and following any emergency situation, to ensure that it remains appropriate and effective.

At each project work site, as a minimum:

- A suitable evacuation alarm (siren) must be provided. All persons working in an area where an evacuation alarm is sounded must respond to it immediately.
- Suitable fire-fighting equipment must be provided and maintained, and personnel must be trained in fire-fighting procedures and the use of fire-fighting equipment.
- Suitable first aid equipment and supplies must be provided and maintained, and an adequate number of appropriately trained First Aiders must be in place.

- Emergency assembly points positioned in safe locations away from buildings, plant and equipment must be designated (and conspicuously signposted). In the event of an evacuation, all persons (i.e. personnel and visitors) must assemble and be accounted for at these emergency assembly points.
- All personnel must receive awareness training on the applicable emergency response procedures, and all visitors entering the site must be properly instructed in these procedures.
- The emergency response procedures must be displayed on each notice board.
- A diagram (site plan) indicating evacuation routes, emergency assembly point locations, and the positioning of emergency equipment (fire extinguishers, first aid boxes, etc.) must be prominently displayed in all buildings and plants, in all offices, on all notice boards, and in other locations on the site as may be required.
- An up-to-date list of emergency telephone numbers must be compiled and maintained. A copy of this list must be posted at each site entrance, in each office, near each telephone, and on every notice board.
- Emergency response drills must be conducted to test the effectiveness of the emergency procedures and equipment, as well as the knowledge and proficiency of the response personnel. Where appropriate, drills must include liaison with and the involvement of external emergency response service providers. A variety of emergency scenarios must be tested including, but not limited to, medical emergencies, fires, rescues, and hazardous substance spills. A drill must be carried out one month after site establishment and then again six months thereafter.

Each drill must be monitored and the outcomes (highlights and shortcomings) must be documented. Corrective actions must be identified and implemented to address the shortcomings, and the Emergency Response Plan and associated procedures must be amended as required.

Refer to the Transnet Health and Safety Management Site Emergency Managements HAS-P-0001.

56.1 Fire Fighting

The contractor must ensure that Fire Fighting requirements are complied with.

56.2 First Aid

The contractor must ensure that First Aiders are trained and appointed as described in this Specification and in accordance with relevant legislative requirements.

56.3 First Aid Kits

A suitable first aid kit (i.e. appropriate to the level of training) must be readily available to each First Aider. All kits must be provided and maintained by the contractor.

Taking into account the type of injuries that are likely to occur in the workplace, each first aid kit must contain suitable equipment and supplies. First aid equipment and supplies required by applicable legislation must be provided as a minimum.

The contents of each first aid kit must be kept clean and dry. Each kit must be contained in either a portable weather-proof case / bag or a steel box mounted to a fixed structure. Access to first aid equipment / supplies must be limited to train First Aiders only. Access to portable kit bags must be controlled and steel first aid boxes mounted in the workplace must be kept locked. Approved signage must be in place to indicate the locations of the first aid boxes / bags. A record of each treatment administered must be kept in a suitable register.

No tablets or medication not stipulated within table 61-1 are to be stored in the first aid box.

No tablets or medication to be administered by first aiders or other personnel to employees who are not feeling well or have been injured.

The first aid kits must, as a minimum, contain the following equipment and supplies:

Table 61-1 Minimum Requirements to be included when equipping first aid boxes

Item 1:	Wound cleaner/ antiseptic – 100ml;
Item 2:	Swabs for cleaning wounds;
Item 3:	Cotton wool for padding – 100g;
Item 4:	Sterile gauze – minimum quantity 10;
Item 5:	1 x Pair of forceps – for splinters;
Item 6:	1 x Pair of scissors – minimum size 100mm
Item 7:	1 x Set of safety pins;
Item 8:	4 x Triangular bandages;
Item 9:	4 x Roller bandages – 75mm x 5m;
Item 10:	4 x Roller bandages – 100mm x 5m;

Item 11:	1 x Roll of elastic adhesive – 25mm x 3m;
Item 12:	1 x Non-allergenic adhesive strip – 25mm x 3m;
Item 13:	1 x Packet of adhesive dressing strips – minimum quantity 10 assorted sizes;
Item 14:	4 x First aid dressings – 75mm x 100mm;
Item 15:	4 x First aid dressings – 150mm x 200mm;
Item 16:	2 x Straight splints;
Item 17:	2 x Pairs large and 2 x pairs medium disposable latex gloves;
Item 18:	2 x CPR mouth pieces or similar devices.

Additional items / supplies may need to be provided depending on the nature of the workplace (specific hazards) and the level of training of the first aider in position of the kit.

57. Management Review

A review of the contractor's Health and Safety Management System must be undertaken as required within the project timeframe to ensure that the system continues to be effective in managing health and safety performance and meeting project requirements. The review must evaluate if there is any need for change and must identify actions to improve the system.

The review must be led by senior management and the following must be considered:

- The suitability of the policy adopted for the project;
- The impact of changing legislation;
- The management of risk;
- Health and safety objectives and performance indicators;
- Changing expectations and requirements of relevant stakeholders;
- Changes to the contractor's scope, schedule, designs, etc.;
- Changes to the contractor's organisational structure;

- Communication and feedback (particularly from employees, Project representatives, and client representatives);
- The effectiveness of the management of change process;
- Workplace exposure monitoring and medical surveillance;
- The status of corrective actions;
- Performance statistics, including an annual summary of safety statistics, and occupational hygiene monitoring and medical surveillance results;
- Non-conformances (findings) from completed audits;
- Follow up on actions from previous management reviews; and
- Recommendations and opportunities for improving the effectiveness of the management system.

A record of each completed management review must be retained and it must include all decisions and identified actions concerning alterations, modifications or improvements to the management system that demonstrate a commitment to continual improvement.

58. Management of Change

To ensure that proposed changes do not give rise to unacceptable health or safety risk, the contractor must develop and implement a process for identifying and managing change in the workplace (e.g. changes to scope, schedule, procedures, work methods, site conditions, designs, plans, plant and equipment, materials, processes, etc.) that may impact on health or safety performance.

The management of change process must take into consideration that changes may be planned or unplanned, sudden or gradual, temporary or permanent.

The process must aim to ensure that:

- Changes are identified and assessed before they are implemented;
- Careful consideration is given to managing the risks associated with any change;
- Due diligence can be shown to have taken place;
- The number of unsatisfactory or unnecessary changes is minimised;
- The right people are involved in the change process; and
- All statutory requirements are met.

All risks associated with a proposed change must be evaluated and ranked. The risks that are ranked as moderate or higher must be managed to prevent serious injury or illness.

It must not simply be assumed that a change will not result in significant risks. All proposed changes must be formally evaluated. The evaluation or review must include:

- An appropriate level of technical expertise;
- The involvement of the workforce potentially affected by the proposed change; and
- Approval of the change by a person with at least the same level of authority as those who control the existing process or item being changed.

59. Sub-contractor Alignment

Processes must be in place to ensure that the health and safety risks associated with the procurement of materials, equipment, services and labour are identified, evaluated and effectively managed.

A process for evaluating a sub-contractor's (or supplier's) ability to provide materials, equipment, services and labour that meet defined specifications must be in place. A prospective sub-contractor's health and safety management expertise, experience and capability (including previous health and safety performance) must be formally assessed prior to any contract or purchase order being awarded.

Each appointed sub-contractor must develop and implement a detailed Health and Safety Management Plan based on the requirements of the contractor's Health and Safety Management Plan and the Health and Safety Specification for the project. This plan must be reviewed and approved by the contractor prior to the commencement of any work.

The properties of all materials provided to the project must be adequately understood, documented and integrated into operating procedures where exposure to these materials presents a significant health or safety risk.

Procedures, commensurate with the evaluated risk, must be in place for the receiving, storing, dispatching and transporting of all equipment and materials.

Before work commences on any contract, all sub-contractor personnel must receive comprehensive orientation and induction training as required by this Specification. All work carried out by a sub-contractor must be managed (activity supervised) throughout the contract period and performance must be reviewed (audited) on a regular basis.

60. Incident Reporting and Investigation

The contractor must establish a procedure for the management of all health and safety incidents. This procedure must define the responsibilities, methodologies and processes that must be followed for:

- Reporting an incident;
- Investigating an incident;
- Analysing an incident to determine the root cause;
- Identifying and implementing corrective actions to prevent a recurrence; and
- Communicating information concerning an incident to relevant persons and / or groups.

Please Note: Arrangements must be in place to ensure that proper medical care is provided to any contractor (or sub-contractor) employee that suffers an occupational injury or illness. These arrangements must be described briefly in the contractor's Health and Safety Management Plan and in detail in the Incident Management Procedure.

An incident may have multiple impacts. For each impact, the Actual Consequence and the Maximum Reasonable Outcome must be evaluated. Each impact must be evaluated independently, with the most significant classification forming the primary rating of the incident.

A near-miss is an incident. All near-miss incidents must be reported.

Using the defined consequence scales contained in TRANSNET 5x5 qualitative risk matrix, the Actual Consequence of each impact must be categorised as:

- A Near-miss;
- Insignificant (Level 4; as per TRANSNET incident level classification guidance);
- Minor (Level 3; as per TRANSNET incident level classification guidance);
- Moderate (Level 2; as per TRANSNET incident level classification guidance);
- Major (Level 1; as per TRANSNET incident level classification guidance); or
- Catastrophic (Level 1; as per TRANSNET incident level classification guidance).

The Maximum Reasonable Outcome (MRO) is based on a risk evaluation of the maximum reasonable consequence of an impact and the likelihood of the event occurring again given a reasonable failure of existing controls. Using the matrix referred to above, each impact must be evaluated and classified as:

- Low;
- Moderate;
- High; or
- Extreme.

An incident must be reported on the same work day or shift on which it occurs and preliminary details must be recorded and a TRANSNET Incident Flash Report must be completed and submitted within 24 hours to the relevant Project Construction Manager or representative. Depending on the Actual Consequence and Maximum Reasonable Potential Outcome of the impact(s), the relevant internal and external parties must be notified in accordance with specified protocols and timeframes, and legislative requirements.

In the event of a significant incident (i.e. an incident with an Actual Consequence of Moderate, Major or Catastrophic, or a Maximum Reasonable Potential Outcome of High or Extreme), work must cease and must only resume once the necessary actions (including the re-evaluation of any relevant risk assessments) have been taken to eliminate or reduce the risk of recurrence. Work must only be permitted to recommence once formal authorisation has been granted by the Project Construction Manager. In the case of incidents with an Actual Consequence of Major or Catastrophic, work must not be permitted to recommence until authorisation has been granted by the relevant government authorities (i.e. the South African Police, the Department of Labour or the Department of Mineral Resources).

The Project Construction Manager must ensure that an investigation is completed for each incident that occurs, and that appropriately senior personnel participate in, and authorise the outcomes of, each investigation. Incident investigations must be facilitated by competent and experienced persons who have been trained in the appropriate methodology. (e.g TCAM – Transnet Causal Analysis Methodology).

All significant incidents (i.e. incidents with an Actual Consequence of Moderate, Major or Catastrophic, or a Maximum Reasonable Outcome of High or Extreme) must be investigated using the approved Transnet investigation methodology. Such an investigation must be facilitated by a trained project representative within 7 calendar days.

For all other incidents (i.e. incidents with an Actual Consequence of Insignificant or Minor, or a Maximum Reasonable Outcome of Low or Moderate) other methodologies approved by the Project Health and Safety Manager may be used.

Each incident (including near-miss incidents) must be investigated to a level of detail that is appropriate for the Maximum Reasonable Potential Outcome of the incident.

Each incident must be analysed to determine the root cause, and corrective actions must be identified and prioritised for implementation to eliminate or reduce the risk(s) in order to prevent recurrence of the incident.

For each corrective action, a responsible person must be designated and an appropriate timeframe (target date) for completion of the corrective action must be specified. Progress on implementing corrective actions (i.e. closing incidents) must be monitored and reported on. The implementation of corrective actions must be verified during monthly audits by the TRANSNET Project Health and Safety Practitioners but also no later than 30 calendar days after the conclusion of the incident investigation. The contractor must document the results of each investigation and a report must be submitted to the nominated project management representative within a stipulated time frame as determined by the nominated project management representative.

As a minimum, each incident report must include:

- The date, time and location of the incident;
- A detailed description of the incident, including photographs;
- The names of any injured persons;
- Injury details (if applicable);
- A summary of the first aid and / or medical treatment provided (if applicable);
- The current status of any injured persons;
- The root causes of the incident; and
- Detailed corrective actions, including responsible persons and target dates for implementation.

Each significant incident must be summarised for its lessons learnt following the investigation. This information must be reviewed by the contractor's Project Manager to assure completeness, accuracy and relevance before it is shared with (communicated to) all project personnel. Refer to the Transnet Health and Safety Management Occurrence Reporting and Investigation HAS-P-0002.

61. Non-conformance

Non-conformance Reports (NCR) will be issued to Contractors upon the identification of non-compliances to this specification. NCR's will be issued to Contractors for their response and implementation of corrective actions. NCR's must be closed out within a 48hour period depending on the severity of the non-conformance.

The contractor must establish a process for identifying and recording corrective actions arising from:

- Non-compliances;
- Incident investigations;
- Hazard identification and risk assessment;
- Measurement and monitoring;
- Improvement plans and suggestions;
- Managing change;
- Audits and inspections; and
- Safety observations and coaching (safety interactions).

The contractor must establish a procedure for managing actions that addresses:

- Identification, categorisation and prioritisation of actions;
- Formal evaluation and approval of actions (management of change process);
- Assignment of responsibilities, resources and schedules for implementation;
- Implementation of actions;
- Tracking and reporting on implementation status; and
- Monitoring and verifying the effectiveness of the actions.

62. Performance Assessment and Auditing

The contractor must establish and maintain programmes for measuring and monitoring health and safety performance on a regular basis. Metrics must include leading and lagging indicators, and be based on qualitative and quantitative data.

62.1 Reporting on Performance

Reports summarising the contractor's health and safety performance on the project must be compiled on a weekly and a monthly basis.

The contractor must be prepared to discuss the content of these reports at scheduled health and safety meetings.

The reports must contain the following minimum information:

- Number of contractor and sub-contractor employees on site;
- Total hours worked on site by contractor and sub-contractor employees (by company);
- Number of incidents by category (i.e. Near-miss, FAI, MTI and LTI);
- Lost Time Injury Frequency Rate (LTIFR) (project to date and 12-month rolling);
- Details of all new incidents for the reporting period and the corrective actions taken or to be taken;
- Feedback (progress updates) on all open incidents and outstanding corrective actions;
- Status and feedback on any employee that may have been injured and has not yet returned to work;
- Details of all health and safety training carried out during the reporting period;
- Number of SOC's (Safety Observations and Coaching) carried out during the reporting period;
- SOC trends identified and proposed action for the coming week or month to maintain positive trends and / or address negative trends;
- Details of all audits, inspections and site visits carried out during the reporting period, and the corrective actions taken (or to be taken) to address all non-conformances;
- Feedback (progress updates) on all open non-conformances and outstanding corrective actions;
- Number of Toolbox Talks conducted during the reporting period (monthly);
- Number of Planned Task Observations (PTO's) carried out during the reporting period (monthly);
- Details of all active risk assessments and Safe Work Procedures highlighting those that are due for review in the coming month (monthly);
- A look ahead (to the coming week, month or quarter) to ensure that appropriate health and safety planning and preparation is done for upcoming work;
- Challenges faced with regard to health and safety; and
- Any other health and safety related information specific to the project that may be required.

Leading indicators (e.g. audit findings, observations, etc.) must be analysed, and any negative trends identified with regard to unsafe behaviour or conditions must be appropriately addressed to prevent incidents.

Lagging indicators (e.g. injuries, illnesses, near-miss, etc.) must be investigated in detail to determine the root causes. Corrective actions must be identified, implemented and integrated into Safe Work Procedures to prevent recurrences.

63. Audits and Inspections

On a monthly basis, the health and safety management system and workplace activities of the contractor will be audited by a Project Health and Safety Practitioner to assess compliance with the project health and safety requirements. Any deviation from these requirements (i.e. non-conformance) that places the health or safety of any person in immediate danger will result in the specific activity being stopped until the non-conformance is corrected.

For each non-conformance determined during any audit, the contractor must identify and implement appropriate corrective actions.

For each corrective action, a responsible person must be designated and an appropriate timeframe (target date) for completion of the corrective action must be specified. Progress on implementing corrective actions (i.e. closing non-conformances) must be monitored and reported on. The implementation of corrective actions will be verified during the monthly audits.

Should it be determined that the contractor's level of compliance is unsatisfactory, all work being performed by the contractor on the project site may be stopped (at the contractor's expense) until an investigation into the reasons for the poor performance has been carried out, a corrective action plan has been developed, and corrective actions have been implemented.

In addition to the audit carried out by the Project Health and Safety Practitioner, the contractor must carry out an internal audit on a monthly basis to assess compliance with the project health and safety requirements (including the requirements of this specification and the contractor's Health and Safety Management Plan). Furthermore, the contractor must ensure that each appointed sub-contractor is audited and measured to the same standard. Copies of these audit reports must be submitted to the Project Health and Safety Practitioner on a monthly basis.

The contractor must carry out internal health and safety inspections as follows:

- General site health and safety inspections on a daily basis; and
Inspections of plant, tools and equipment prior to establishment or use on site, and at least monthly thereafter.

All audits and inspections must be carried out by competent persons who have been appointed in writing.

A schedule of planned audits and inspections must be compiled and maintained ensuring that:

- All work areas and all activities are covered at regular intervals;
- All applicable legal requirements are complied with; and
- Areas or activities with significant associated hazards or risks receive greater attention.

64. Reference Documents

Table -1: Reference Documents

Document Identification	Document Title
Occupational health and safety act, 85 of 1993 and Regulations	Occupational health and safety act, 85 of 1993 and Regulations



Tel : +27 (0) 11 025 6566
 Fax : +27 (0) 86 632 3980
 Email : info@sankofaib.co.za
 Website : www.sankofaib.co.za

Post : Postnet Suite 221, Private Bag X51, Rivonia, 2128
 1st Floor, Block E, Edenburg Terraces, 348 Rivonia Boulevard, Rivonia, 2128

To Whom It May Concern,

CERTIFICATE OF INSURANCE: TRANSNET (SOC) LIMITED – PRINCIPAL CONTROLLED INSURANCE

In our capacity as Insurance Brokers to the Transnet Group of Companies, we hereby certify that the undermentioned insurances are currently in place:

INSURED: Transnet (SOC) Limited

PERIOD: 1 April 2022 to 31 March 2023 (Both days inclusive)

DIVISION: Transnet Freight Rail, Transnet Engineering, Transnet Properties, Transnet Pipelines, Transnet National Ports Authority and Transnet Port Terminals

THE INSURED'S VAT NO: 4720103177

THE INSURED'S COMPANY REGISTRATION NO: 1990/000900/30

POSTAL ADDRESS (Head Office) P O Box 72501, Parkview, 2122

CONTRACT WORKS INSURANCE

Cover Provided : Contract Works - Physical loss or damage to the Property Insured which being materials, plant and other things for incorporation into the permanent works.

Insurer : Mirabilis (Santam Limited)

Policy Number : MZAR35023-CAR

The Contract Site : Any location within the Territorial Limits upon which The Insured Contract is to be executed or carried out as more fully defined in The Insured Contract documents together with so much of the surrounding area as may be required or designated for the performance of The Insured Contract.

Territorial Limits : The Republic of South Africa.

Additional Co-Insureds:

The Contractor: All Contractors undertaking work in connection with The Insured Contract including the Employer to the extent that the Employer undertakes work in connection with The Insured Contract;

Sub-Contractors: All Sub-Contractors employed by the Contractor and all other Sub- Contractors (whether nominated or otherwise) engaged in fulfilment of The Insured Contract; and to the extent required by any contract or agreement;

transporters and persons providing a storage facility, plant owners and/or operators in respect of liability loss or damage arising out of The Insured Contract; project managers, architects, land surveyors, quantity surveyors, engineers and other advisors or consultants or sub-consultants appointed in the performance of the Insured Contract activities arising at the Contract Site provided always that any such person shall not be insured hereunder in respect of liability loss or damage arising out of such person's error or omission in the performance of the professional services for which he was appointed;

Provincial & Government: any Local Provincial or Government Department with which the Insured enters into any contract or agreement for the performance of The Insured Contract; all for their respective rights and interests.

Insured Contracts : All Contracts (including any undertaking awarded or commenced prior to Inception of the Period of Insurance) involving design, construction, Performance Testing and Commissioning in respect of the Works and shall Include capital expenditure, upgrade, modification, maintenance or overhaul, refurbishment, renovation, retrofitting or alterations and additions to existing facilities undertaken by the Insured or other Insured Parties acting on their behalf but **excluding**;

- a) contracts which at award stage have a value in excess of R 1,000,000,000;
- b) contracts with an estimated construction period exceeding 48 months but increasing to 60 months in respect of rail maintenance contracts and Transnet Freight and Rail contracts for logistical support for inline inspections and identification of defects over a 5 year period in respect of Transnet's pipeline assets (excluding Defects Liability/Maintenance period);
- c) contracts involving construction or erection of petrochemical manufacturing plant(s) but this exclusion shall not apply to pipelines and other associated works undertaken by or on behalf of the Insured;
- d) contracts in or on any aircraft;
- e) Off-shore contracts;
- f) Wet Risk Contracts which at award exceeds R500,000,000;
- g) Dam Contracts
- h) Tunnel contracts which at award exceeds R50,000,000;
- i) Tunnel contracts using tunnel boring machines;
- j) Underground Mining Contracts;
- k) Horizontal Directional Drilling Contracts which at award exceeds R50,000,000;
- l) Horizontal Directional Drilling Contracts where total drilling exceeds 1 km;
- m) Horizontal Directional Drilling Contracts for pipe diameters greater than 76 cm.

Definitions

1. "Off-shore contracts" means all works and installations in the sea or on the seabed including dredging which are accessible only by ship boat barge or helicopter and do not constitute normal wet works like harbours moles bridges wharves or sewage or cooling water intake or outlet facilities. "OffShore Contracts" shall include oilrigs and oil platforms (but not including oil platforms when connected to the land on completion). The term shall not apply to pre-fabrication works on land associated with an Off-Shore Contract.

- 2 *"Wet Risk Contracts" shall mean any Contract and/or Works where more than thirty-five (35) percentile of its value is in a permanent body of water or is below the high water mark of any tidal body of water. The term shall include contracts for the construction of wharves, piers, marinas, causeways, breakwaters, jetties, dry docks and offshore pipelines when connected directly to on-shore facilities and canal developments. Wet Risks shall exclude Off- Shore Contracts;*
- 3 *"Dam Contracts", which term shall include weirs and hydroelectric projects involving the construction of dams or weirs;*
- 4 *"Horizontal Directional Drilling Contracts", means micro-tunnelling work for the construction of tunnels utilising surface based horizontal directional drilling equipment.*
- 5 *Tunnels" means Tunnels (Including declines) involving all of the following;*
 - (a) Works below ground level; and
 - (b) Tunnelling machinery below ground level; and
 - (c) A tunnelling crew operating the machinery below ground level;
 - (d) But shall not include Horizontal Directional Drilling Contracts
- 6 *"Horizontal Directional Drilling Contracts", means micro-tunnelling work for the construction of tunnels utilising surface based horizontal directional drilling equipment.*
- 7 *"Underground Mining Contracts", which shall mean any contract involving underground mining.*

Testing Period: 120 Days not consecutive.

Maintenance Period : 12 Months

Main Policy Extensions :

- Costs & Expenses - Limited to maximum of R50,000,000.
- Expediting Measures – Limited to a maximum of R50,000,000.
- Professional Fees In Reinstatement Of Property Insured - Limited to a maximum of R50,000,000.
- Surrounding Property in care custody or control of the contractor – Limited to a maximum of R55,000,000.
- Fire Brigade & Public Authorities - Limited to a maximum of R10,000,000.
- Public Authority Reinstatement Costs - Limited to a maximum of R20,000,000
- Public Relationship Costs - Limited to a maximum of R1,000,000.
- Records - Limited to a maximum of R2,000,000.
- Removal to Gain Access - Limited to a maximum of R20,000,000
- Road Reserve and Servitude Extensions - Limited to a maximum of R10,000,000

- Search & Locate Costs - Limited to a maximum of R20,000,000.
- Borrowing Of Plant For Commissioning Purposes - Limited to a maximum of R10,000,000
- Escalation during Construction – 30%
- Marine Contribution Clause
- Claim Preparation Costs – Limited to a maximum of R10,000,000

Main Policy Exclusions :

- War
- Nuclear Energy Risks
- Terrorism
- Computer Loss General Exception
- DE4 (All types of Works) for defective material workmanship design plan or specification.
- LEG 3 (Mechanical or Electrical Engineering Works only) for defective material workmanship design plan or specification. Limited to maximum of 15% of the total estimated contract value.
- Loss or damage arising during air transit or any ocean voyage or whilst in storage thereafter.
- Occurring during any defects/maintenance period unless cause occurred prior to such defects/maintenance period
- Disappearance or by shortage revealed during routine inventory or periodic stocktaking.
- Consequential loss of whatsoever nature.
- Normal wear and tear, normal atmospheric conditions, rust, erosion, corrosion or oxidation.
- Due to its own explosion breakdown or derangement occurring after the Testing Period which has operated under load conditions.
- Second hand property due to its own electrical or mechanical breakdown or explosion.
- Communicable diseases

Deductibles:

In respect of loss or damage:

Major Perils shall mean damage caused by storm, rain, tempest, wind, flood, theft, malicious damage, subsidence, collapse, earthquake, testing or commissioning and the consequences of defective design, specification, materials or workmanship (DE4).

Minor Perils shall mean damage caused by a peril no defined as Major Perils defined above.

Contracts with a contract value :	Major perils	Minor perils
0 to R100,000,000	R25,000	R 15,000
R100,000,001 to R250,000,000	R50,000	R15,000
R250,000,001 to R500,000,000	R100,000	R25,000

R500,000,001 to R1,000,000,000 R150,000 R25,000

Minimum wet risk deductible of R100,000 per occurrence to apply.

LEG 3 Deductible (Only in respect of Mechanical and Electrical contracts);

Contracts with a contract value	Deductible
0 to R500,000,000	R1,000,000 per occurrence
R500,000,001 to R1,000,000,000	R1,500,000 per occurrence

PUBLIC LIABILITY

Cover Provided : Contract Works Public Liability – cover the Insured's legal liability in respect of loss or damage or injury to third parties arising out of work performed in respect of the Insured Contracts.

Insurer : Stalker Hutchinson (Santam Limited)

Policy Number: 6000/132335

Territorial Limits : The Republic of South Africa.

Insured Contracts: All projects (including any undertaking awarded or commenced prior to inception of the period of Insurance) involving design, construction, performance testing and commissioning in respect of the works and shall include capital expenditure, upgrade, modification, maintenance or overhaul, refurbishment, renovation, retrofitting or alterations and additions to existing facilities undertaken by the Insured or other Insured Parties acting on their behalf but **Excluding project works;**

- a) which at award stage have a value in excess of R 1,000,000,000.
- b) Contracts with an estimated construction period at award exceeding 48 months but 60 months in respect of contracts awarded prior to 1 April 2020 for rail maintenance contracts For Transnet Freight & Rail and for Transnet Pipeline's logistical support for inline inspections and identification of defects in respect of Transnet's pipeline assets (all excluding Defects Liability/Maintenance period).
- c) Contracts with a Contractual Defects Liability Maintenance Period exceeding 24 months.
- d) involving construction or erection of petrochemical manufacturing plant(s) but this exclusion shall not apply to pipelines and other associated works undertaken by or on behalf of the Insured.
- e) in or on any aircraft; and
- f) being Off-shore contracts

"Off-shore contracts" means all works and installations in the sea or on the seabed and do not constitute normal Wet Risk Contracts like harbours, moles, bridges, wharves or sewage or cooling water intake or outlet facilities, piers, marinas, causeways, breakwaters, jetties, dry docks and offshore pipelines when connected

directly to onshore facilities and canal developments. "Off-Shore contracts" shall include oilrigs and oil platforms.

Policy Limits:

Contractors Public Liability	R100,000,000 any one occurrence / unlimited during the Period of Insurance
Contractors Negligent Removal or weakening of Support	R100 000 000 any one occurrence and R100,000,000 per site in the aggregate during the Period of Insurance.
Statutory Legal Defence Costs	*R5 000 000 in the aggregate during the Period of Insurance.
Arrest / Assault / Defamation	*R5 000 000 in the aggregate during the Period of Insurance.
Emergency Medical Expenses	R5 000 000 any one occurrence
Prevention of Access	*R5 000 000 in the aggregate during the Period of Insurance.
Trespass / Nuisance	*R5 000 000 in the aggregate during the Period of Insurance.
Claims Preparation Costs	R5 000 000 any one occurrence

*Where the limits are noted as in the aggregate during the policy period of insurance, that such aggregated limit is applicable to all Transnet Insured Contracts collectively and in total and does not apply to each contract separately.

Deductible(s) : R50,000 per occurrence but increased to R5,000,000 in respect of Spread of Fire and/or Hot Works and R250,000 in respect of Sudden and Accidental Pollution and/or Goods on the Hook and R150 000 Removal of Support.

Main Policy Exclusions :

The policy does not cover:

- deliberate, conscious and intentional disregard to take reasonable precautions.
- fines, penalties, punitive and exemplary damages.
- Pollution unless caused by a sudden, unintended and unexpected occurrence.
- cost of removing, nullifying or cleaning up the effects of pollution unless caused by a sudden, unintended and unexpected occurrence.
- the hazardous nature of asbestos.
- War And Terrorism Risks.
- Nuclear Risks.
- Actual or alleged unlawful competition, unfair practices, abuse of monopoly power, cartel activities
- Compulsory Insurance
- Loss or damage and any consequence therefrom to any Data. •
- Sanctions Exclusion
- Excluding unfair dismissal
- Data exclusion
- COVID Exclusion

PROFESSIONAL INDEMNITY

Professional Indemnity

- a) In respect of damages which the Insured shall become legally liable to pay in consequence of neglect, error or omission by or on behalf of the Insured in the conduct or execution of their Professional Activities and Duties as defined.
- b) Prior To Handover/Rectification - against loss arising out of any defect in the works discovered prior to the issue of any practical completion or take-over certificate provided that any such defects are caused by a negligent breach of a Professional Activity or Duty by the Insured in consequence of neglect, error or omission by or on behalf of the Insured.

Insurer : Stalker Hutchinson (Santam Limited)

Policy Number: 6000/132337

Jurisdiction : Worldwide excluding North America

Insured Contracts: All projects (including any undertaking awarded or commenced prior to inception of the period of Insurance) involving design, construction, performance testing and commissioning in respect of the works and shall include capital expenditure, upgrade, modification, maintenance or overhaul, refurbishment, renovation, retrofitting or alterations and additions to existing facilities undertaken by the Insured or other Insured Parties acting on their behalf but **Excluding project works:**

- a) Contracts which at award stage have a value in excess of R 1,000,000,000.
- b) Contracts with an estimated construction period at award exceeding 48 months (excluding Defects Liability/Maintenance period).
- c) Contracts with a Contractual Defects Liability Maintenance Period exceeding 24 months.
- d) involving construction or erection of petrochemical manufacturing plant(s) but this exclusion shall not apply to pipelines and other associated works undertaken by or on behalf of the Insured.
- e) in or on any aircraft.
- f) Being Off-shore contracts

"Off-shore contracts" means all works and installations in the sea or on the seabed and do not constitute normal Wet Risk Contracts like harbours, moles, bridges, wharves or sewage or cooling water intake or outlet facilities, piers, marinas, causeways, breakwaters, jetties, dry docks and offshore pipelines when connected directly to onshore facilities and canal developments. "Off-Shore contracts" shall include oilrigs and oil platforms.

Limit Of Indemnity: Professional Indemnity - *R100,000,000 in the aggregate during the policy period of insurance.

*Where the limit is noted as in the aggregate during the policy period of insurance, that such aggregated limit is applicable to all Transnet Insured Contracts collectively and in total and does not apply to each contract separately.

**Policy Extension
Limits Of Indemnity:**

Claims Preparation Costs -	*R7,500,000 in the aggregate during the policy period of insurance.
Loss of Documents -	*R2,000,000 in the aggregate during the policy period of insurance.
Statutory Defence Costs -	*R5,000,000 in the aggregate during the policy period of insurance.
Defamation -	*R5,000,000 in the aggregate during the policy period of insurance.
Infringement of Copyright -	*R5,000,000 in the aggregate during the policy period of insurance.

*Where the limits are noted as in the aggregate during the policy period of insurance, that such aggregated limit is applicable to all Transnet Insured Contracts collectively and in total and does not apply to each contract separately.

Deductibles:

R5,000,000 each and every but R10,000 in respect of Claims Preparation Costs, Loss of Documents, Statutory Defence Costs, Defamation and Infringement Of Copyright.

Policy Special Conditions :

Condition precedent to liability that the Insured is fully qualified and registered with the relevant Industry Body/Association in terms of legislation as applicable.

Prior to hand over/rectification – the insured must give prior written notice to the Insurers of the intention to take remedial action to rectify such defect and obtain the Insurers' written agreement to such action being taken and the costs and expenses expected to be expended.

Policy Main Exclusions:

- Excludes all consequential loss other than cost of re-design, rectification and replacement as a consequence of the defect.
- Excludes Supervision.
- Excludes liability arising out of environmental impairment / pollution
- Excludes the cost of removing, nullifying or cleaning-up the effects of environmental impairment/ pollution.
- Excludes war, invasion, acts of foreign enemies, hostilities or warlike operations (whether war be declared or not), civil war, rebellion, revolution, insurrection, civil commotion assuming the proportions of or amounting to an uprising, military or usurped power, any act of terrorism and nuclear risks.
- Excludes fines, penalties, punitive and exemplary damages, multiplication of compensatory damages and/or any other noncompensating damages of any kind.
- Excludes liability from the hazardous nature of asbestos.
- Excludes medical malpractice.
- Excludes failure to meet contractual requirements relating to efficiency, output or durability.
- Excludes failure to meet completion dates
- Excludes the estimation of probable costs other than cost advice and cost planning services normally provided by a Quantity Surveyor or Project manager.
- Excludes incorrect authorisation of payment.



- Excludes breach of any statutory regulation.
- Excludes liability from the insolvency, liquidation or judicial management of the Insured.
- Excludes the certification of value of work executed by any contractor where the Insured has an equity interest in such contractor;
- Excludes liability due to unlawful competition, unfair practices, abuse of monopoly power, cartel activities or breach of a competitions ac
- Sanctions Exclusion
- Data exclusion
- State Capture exclusion
- COVID exclusion
- Directors & Officers Exclusion

This certificate of the insurance cover arranged is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policies issued by Insurers.

Dennis Govender

Chief Broking Officer



Transnet

**Principal Controlled Insurance Manual
(PCI)**

Contract Works

Contractors Public Liability

Professional Indemnity

To be used for construction related projects with a value of less than R1 billion.

For use by the Insured parties

Updated 2022 2023

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1 Introduction

Transnet SOC Limited insures all Projects / Contracts on a Principal Controlled Insurance Programme basis (including the Assembly and/or Erection of Plant and Machinery) in respect of Contract Works, Contractor's Public Liability and Contract Professional Indemnity and cover extends to Contractors and/or Consultants to the extent that Transnet contractually undertakes to arrange such insurance for their benefit.

The program is designed to effectively manage insurable construction risks.

Please note that this manual serves as a reference only, and does not in any way override, derogate or supersede the conditions of contracts or other agreements entered into, or the terms and conditions of the policies of insurance, which have been arranged by or on behalf of Transnet SOC. This manual must not be regarded as a substitute for the policy documents nor be construed as a legal interpretation of the protection afforded.

1.1 Benefits of the PCI Insurance Program

- 1.1.1 Transnet and its Operating Divisions wish to control the risk exposures in the case of Construction Insurance.
- 1.1.2 Transnet, as a large organization, bulk-buys insurance resulting in preferential rates and comprehensive cover.
- 1.1.3 Eliminates potential problems, which usually occur when individual Contractors are responsible to arrange separate insurance.
- 1.1.4 Includes the Contractor/s and/or Subcontractor/s and/or Consultant/s as insured parties where Transnet contractually undertake to arrange cover on their behalf.

1.2 Administrative Arrangements

1.2.1 Projects falling outside the scope of PCI

- a) The Operating Divisions must declare projects, which are excluded from the PCI programme, prior to the commencement of such contract.
- b) This declaration must be made to Group Insurance and the Transnet broker.

- c) To declare the value of a contract for contracts involving assembly or erection of plant and machinery or repairs maintenance or overhaul thereto, THE FULL NEW REPLACEMENT VALUE OF THE PLANT/MACHINERY involved must be declared AND NOT ONLY THE CONTRACT VALUE, for example:
 - Cranes (repairs or final assembly)
 - Machinery being moved
 - Maintenance or new works on existing Transnet National Port Authority Vessels whilst moored or in dry dock.
- d) Contract value must include the replacement value of any Free Issue Material provided.

1.2.2 Tender Stage of Contracts

- a) It is important that Tender documents and finalised contract documents reflect the fact that Transnet as the Principal/Employer arranges certain covers which incorporates cover on behalf of Contractors and / or Subcontractors and/or Consultants.
- b) The arrangement of PCI Insurance by Transnet does not relieve the contracting parties of their contractual obligations such as care of the works and liabilities to third parties.
- c) The cover provided, including limits of insurance purchased, should be clearly spelt out in the Tender documents and finalised. Contract documentation including the deductible(s) that are applicable and the fact that Contractor and/or Subcontractor and/or Consultants are responsible for the payment of such deductible(s).

1.2.3 Contracting outside the Territorial Limits

- a) If Contracts are to take place in any territories outside of South Africa, the broker needs to be advised of the same at feasibility stage.
- b) Due to the more stringent legislation regarding insurance in African countries, that the majority of territories within Africa make it compulsory to insure in country with an admitted insurer, in such territory as approved by the local insurance commissioner.

1.2.4 Additional Insurances that can be included in the PCI CW policy if needed (Optional)

Marine Transit Cover	Covering imports until delivered and checked on site
Removal of Lateral Support	Covering legal liability incurred as result removal of, weakening of, or interference with support to land or property or buildings adjacent to, on or in the vicinity of the Contract site.

1.2.5 Information to be shared with all Insured parties

a) **Warranties** (refer to relevant section in this manual)

It is essential that the Warranties be brought to the attention of the contractor and their sub-contractors as well as any other party involved in the contract/project being undertaken.

Where the special conditions concerning the warranties are not practical, specific arrangements for cover can be made with underwriters. It will require detailed underwriting information and an additional premium may be charged.

If any insured party does not conform to any of the insurers Warranties, then cover provided by the policy will be forfeited.

b) **Deductibles** (refer to relevant section in this manual)

The deductible is payable by the contractor as per the contract between Transnet and the Contractor.

The deductibles may change from time to time and it is the contractor's responsibility to obtain the latest deductible structure.

c) **Claims Management** (refer to relevant section in this manual)

Incidents that might lead to an insurance claim must be reported as soon as possible.

Claims must be notified within 30 Days after incident.

Claims must be notified to the Projects Manager, OD Insurance office and broker.

2 PCI Insurances Arranged by Transnet

2.1 Insurance Cover Applicable to All Contracts other than Excluded Contracts

2.1.1	Contract Works Cover	Covering physical loss or damage to the works, temporary works and materials for incorporation into the works whilst in transit, temporary storage and whilst in the course of erection at the contract site within the Republic of South Africa.
2.1.2	Contractors Public Liability Cover	Covering legal liability for damage to third party property and/or injury to or death of third party persons arising out of or in connection with the performance of the works on the contract site or sites designated for purposes of the performance of the contract.
2.1.3	Professional Indemnity	Covering legal liability as a result of neglect, error or omission of the insured in the execution of their professional activities.
2.1.4	Riot / Strike/ Terrorism Cover (Contract Works)	Provided by SASRIA (South African Special Risks Insurance Association) in respect of risks within the Republic of South Africa.

3 Claims Administration

All incidents that could give rise to claim under the Principal Controlled Insurances have to be reported to the Broker / Insurer within a **30 (Thirty) day** period. Failing this, claims will not be entertained.

3.1 Engagement of Nominated Loss Adjusters for Contract Works Claims

The broker is authorised to appoint a Nominated Loss Adjuster to investigate and quantify losses that are potentially indemnifiable under the Policy.

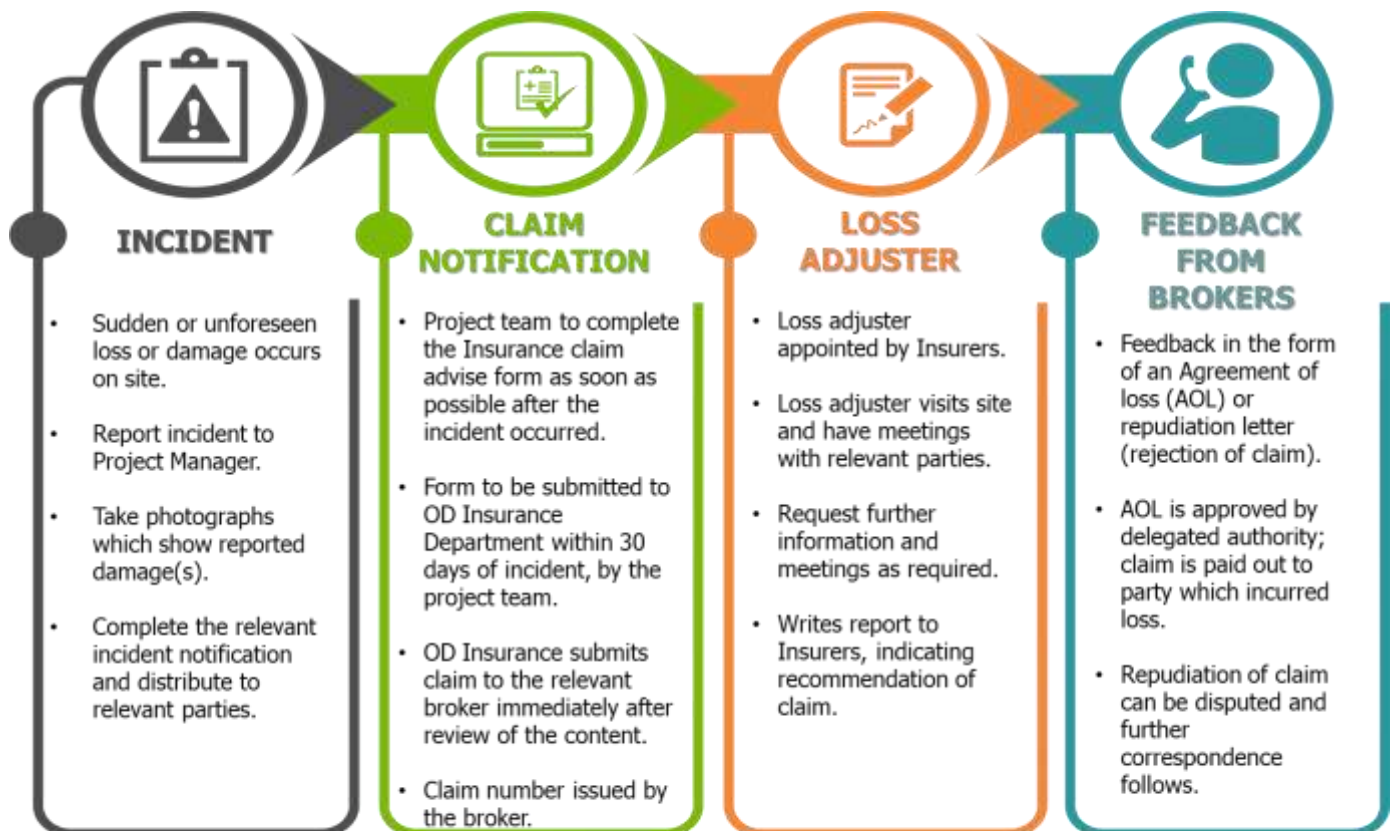
3.2 Insurance Claims Principals

- 3.2.1 Losses involving theft or malicious damage must be reported to the police and a police case number obtained and recorded.
- 3.2.2 The Employer, Contactor(s) or Sub-Contractor(s) shall allow free access for Insurers' Loss Adjuster(s) and / or Employer's Insurance Broker for the purpose of investigation and assessing the loss or damage.
- 3.2.3 The Employer, Contractor(s) or subcontractors shall not deal directly with the Insurers other than by co-operating with their Loss Adjuster(s) and / or the Employers Insurance Broker's request.
- 3.2.4 The Employer, Contractor or Sub-Contractor shall make no Admission of Liability in the event of damage, loss or injury to third party property or persons.
- 3.2.5 Letters of demand or summonses from claimants should be forwarded to the Transnet Broker through the Group Insurance office immediately upon receipt.
- 3.2.6 In the event of immediate repairs being necessary in the interest of safety, the Contractors may with the Employer's permission proceed with such repairs.
- 3.2.7 Other than, in the circumstances described above the Contractor shall not proceed with the making good of any loss without the prior authorization of the Employer who shall advise the Insurer's appointed Loss Adjuster(s) and the Transnet brokers.
- 3.2.8 Upon commencement of the making good of any loss, the Contractor shall keep separate records of the costs involved in making good such loss and these records must be authenticated by the Employer for submission to the Insurer's or their Loss Adjuster(s). Such records shall include, inter alia, the entire cost of labor, materials, transport and equipment.
- 3.2.9 Upon the amount of the loss or damage being agreed upon by the Loss Adjuster(s) and

Transnet / the Contractor, the Contractor and Transnet will sign an "Agreement of Loss" (AOL) form.

- 3.2.10 The amount agreed upon by the Insurers, the Insurers shall pay the Contractor and the Employer to the Employer net of the deductible, who will arrange for the payment to be made to the Contractor as appropriate after deduction of the first amount payable.

3.3 Insurance Claims Process



4 Summary of Contract Works Insurance

4.1 Scope of Cover: Contract Works

Physical loss or damage to the Property Insured which being materials, plant and other things for incorporation into the permanent works and as may be more fully described in the Policy.

4.2 The Insured Party (ies)

4.2.1 As Employer and Named Insured:

Transnet (SOC) Limited, and their subsidiary and associated companies and/or Joint Venture Partners as required and for whom they have instructions to insure or they have or assume a responsibility to insure whether contractually or otherwise as their respective rights and interests may appear;

4.2.2 The Contractor:

- a) All Contractors undertaking work in connection with The Insured Contract
- b) The Employer to the extent that the Employer undertakes work in connection with The Insured Contract;

4.2.3 Sub-Contractors:

- a) All Sub-Contractors employed by the Contractor and all other Sub-Contractors (whether nominated or otherwise) engaged in fulfilment of The Insured Contract); and

4.2.4 To the extent required by any contract or agreement;

- a) transporters, suppliers, manufacturers, vendors, other persons, persons providing storage facilities, plant owners and/or operators in respect of liability loss or damage arising out of The Insured Contract;
- b) project managers, architects, land surveyors, quantity surveyors, engineers and other advisors or consultants or sub-consultants appointed in the performance of the Insured Contract activities arising at the Contract Site provided always that any such person shall not be insured in respect of liability loss or damage arising out of such person's error or omission in the performance of the professional services for which he was appointed;
- c) any Local Provincial or Government Department with which the Insured enters into any contract or agreement for the performance of The Insured Contract;
- d) all for their respective rights and interests

4.3 The Contract Site

Any location within the Territorial Limits upon which The Insured Contract is to be executed or carried out as more fully defined in The Insured Contract documents together with so much of the surrounding area as may be required or designated for the performance of The Insured Contract.

4.4 Territorial Limits

The Republic of South Africa.

4.5 Insured Contracts

All Contracts (including any undertaking awarded or commenced prior to Inception of the Period of Insurance) involving design, construction, Performance Testing and Commissioning in respect of the Works and shall Include capital expenditure, upgrade, modification, maintenance or overhaul, refurbishment, renovation, retrofitting or alterations and additions to existing facilities undertaken by the Insured or other Insured Parties acting on their behalf but

Excluding:

- a) contracts which at award stage have a value in excess of R 1,000,000,000;
- b) contracts with an estimated construction period exceeding 48 months but increasing to 60 months in respect of rail maintenance contracts and Transnet Freight and Rail contracts for logistical support for inline inspections and identification of defects over a 5 year period in respect of Transnet's pipeline assets (excluding Defects Liability/Maintenance period);
- c) contracts involving construction or erection of petrochemical manufacturing plant(s) but this exclusion shall not apply to pipelines and other associated works undertaken by or on behalf of the Insured;
- d) contracts in or on any aircraft;
- e) Off-shore contracts;
- f) Wet Risk Contracts which at award exceeds R500,000,000;
- g) Dam Contracts
- h) Tunnel contracts which at award exceeds R50,000,000;
- i) Tunnel contracts using tunnel boring machines;
- j) Underground Mining Contracts;
- k) Horizontal Directional Drilling Contracts which at award exceeds R500,000;
- l) Horizontal Directional Drilling Contracts where total drilling exceeds 1 km;
- m) Horizontal Directional Drilling Contracts for pipe diameters greater than 76 cm.

4.6 Definitions

- 4.6.1 **"Off-shore contracts"** means all works and installations in the sea or on the seabed including dredging which are accessible only by ship boat barge or helicopter and do not constitute normal wet works like harbours moles bridges wharves or sewage or cooling water intake or outlet facilities. "Off-Shore Contracts" shall include oilrigs and oil platforms (but not including oil platforms when connected to the land on completion). The term shall not apply to pre- fabrication works on land associated with an Off-Shore Contract.
- 4.6.2 **"Wet Risk Contracts"** shall mean any Contract and/or Works where more than thirty-five (35) percentile of its value is in a permanent body of water or is below the high water mark of any tidal body of water. The term shall include contracts for the construction of wharves, piers, marinas, causeways, breakwaters, jetties, dry docks and offshore pipelines when connected directly to on-shore facilities and canal developments. Wet Risks shall exclude Off-Shore Contracts;
- 4.6.3 **"Dam Contracts"**, which term shall include weirs and hydroelectric projects involving the construction of dams or weirs;
- 4.6.4 **"Horizontal Directional Drilling Contracts"**, means micro-tunneling work for the construction of tunnels utilising surface based horizontal directional drilling equipment.
- 4.6.5 **"Tunnels"** means Tunnels (Including declines) involving all of the following;
- a) Works below ground level; and
 - b) tunneling machinery below ground level; and
 - c) a tunneling crew operating the machinery below ground level;
 - d) But shall not include Horizontal Directional Drilling Contracts.
- 4.6.6 **"Horizontal Directional Drilling Contracts"**, means micro-tunneling work for the construction of tunnels utilising surface based horizontal directional drilling equipment.
- 4.6.7 **"Underground Mining Contracts"**, which shall mean any contract involving underground mining.
- 4.6.8 **"normal action of the sea"**, Normal action of the sea means the state of the sea, which manifests itself up to No. 8 on the Beaufort scale, or the state of the tides, current and wave action of the sea, which must be statistically expected to occur once during a 10 year period, whichever is the more onerous.
- 4.6.9 **Major Perils** shall mean damage caused by storm, rain, tempest, wind, flood, theft, malicious

damage, subsidence, collapse, earthquake, testing or commissioning and the consequences of defective design, specification, materials or workmanship (DE4).

- 4.6.10 **Minor Perils** shall mean damage caused by a peril no defined as Major Perils defined above.
- 4.6.11 The Deductible (excess) is the amount, which the Contractor and/or Sub-Contractor and/or Professional (i.e. Consulting Engineer, Architects and Other Professionals) are responsible, this obligation must be reflected in the Tender and/or Contract Documents, and the responsibility for same made clear.

4.7 Testing Period

Limited to 120 Days (not necessarily consecutive).

4.8 Maintenance/Defects Liability Period

Limited to a maximum of 24 Months

4.9 Main Policy Extensions

- a) Costs & Expenses - Limited to maximum of R50,000,000.
- b) Expediting Measures – Limited to a maximum of R50,000,000.
- c) Professional Fees In Reinstatement Of Property Insured - Limited to a maximum of R50,000,000.
- d) Costs & Expenses For Removal Of Debris No Damage - Limited to a maximum of R50,000,000.
- e) Surrounding Property in care custody or control of the contractor – Limited to a maximum of R55,000,000.
- f) Fire Brigade & Public Authorities - Limited to a maximum of R10,000,000.
- g) Public Authority Reinstatement Costs - Limited to a maximum of R20,000,000.
- h) Public Relationship Costs - Limited to a maximum of R1,000,000.
- i) Records - Limited to a maximum of R2,000,000.
- j) Removal to Gain Access - Limited to a maximum of R20,000,000
- k) Road Reserve and Servitude Extensions - Limited to a maximum of R10,000,000
- l) Search & Locate Costs - Limited to a maximum of R20,000,000.
- m) Borrowing Of Plant For Commissioning Purposes - Limited to a maximum of R10,000,000
- n) Escalation during Construction – 30%
- o) Marine Contribution Clause
- p) Claim Preparation Costs – Limited to a maximum of R10,000,000

4.10 Special Conditions/Warranties

4.10.1 Open Trench Limitation

Open trench is defined as any trench and / or material therein until compacted to top of trench level.

Open Trench limitation - loss or damage to open trench work is limited to the cost of the equivalent of 5,000 meters of such open trench. If the length of such open trench exceeds the above limitation of 5,000 meters then the Insurer shall only be liable to indemnify the Insured for a maximum of 5,000 meters.

In addition to the above, the following additional deductibles will apply over and above the deductibles stated in The Schedule in respect of the cost of that portion of any claim relative to open trench.

- a) Exposed length exceeding 1,000 meters but not exceeding 3,000 meters – an additional amount of 20% of loss subject to minimum of R50, 000.
- b) Exposed length exceeding 1,000 meters but up to a maximum of 5,000 meters –an additional amount of 20% of the loss subject to a minimum of R100,000,

As demonstrated below:

Up to 1,000 meters	deductible as stated in The Schedule.
Up to 3,000 meters	deductible as stated in The Schedule plus in excess of 1,000 meters up to a maximum of 3,000 meters an additional 20% of loss minimum R50,000
Up to 5,000 meters	deductible as stated in The Schedule plus in excess of 1,000 meters up to a maximum of 5,000 meters an additional 20% of loss minimum R100,000.

- 4.10.2 **Unsealed/ Un-Primed Base Course Limitation** -loss or damage to unsealed or unprimed base course is limited to the cost of the equivalent of 5,000 meters of such unsealed or unprimed base course. If the length of such unsealed or unprimed base course exceeds the above limitation of 5,000 meters then the Insurer shall only be liable to indemnify the Insured for a maximum of 5,000 meters.

In addition to the above, the following additional deductibles will apply over and above the deductibles stated in The Schedule in respect of the cost of that portion of any claim relative to unsealed or unprimed base course.

- a) Exposed length exceeding 1,000 meters but not exceeding 3,000 meters – an additional amount of 20% of loss subject to minimum of R50,000.
- b) Exposed length exceeding 1,000 meters but up to a maximum of 5,000 meters – an additional amount of 20% of the loss subject to a minimum of R100,000

4.11 Main Policy Exclusions

The Policy Excludes:

- a) War
- b) Nuclear Energy Risks
- c) Terrorism
- d) Computer Loss General Exception
- e) DE4 (All types of Works) for defective material workmanship design plan or specification.
- f) LEG 3 (Mechanical or Electrical Engineering Works only) for defective material workmanship design plan or specification. Limited to maximum of 15% of the total estimated contract value.
- g) Loss or damage arising during air transit or any ocean voyage or whilst in storage thereafter.
- h) occurring during any defects/maintenance period unless cause occurred prior to such defects/maintenance period
- i) Disappearance or by shortage revealed during routine inventory or periodic stocktaking.
- j) Consequential loss of whatsoever nature.
- k) Normal wear and tear, normal atmospheric conditions, rust, erosion, corrosion or oxidisation.
- l) Due to its own explosion breakdown or derangement occurring after the Testing Period, which has operated under load conditions.
- m) Second hand property due to its own electrical or mechanical breakdown or explosion.
- n) Covid 19 and infectious diseases.

4.12 Deductibles

The following Deductibles apply per occurrence. In respect of loss or damage:

Contracts with a contract value:	Major perils	Minor perils
0 to R100,000,000	R25,000	R 15,000
R100,000,001 to R250,000,000	R50,000	R15,000
R250,000,001 to R500,000,000	R100,000	R25,000
R500,000,001 to R1,000,000,000	R150,000	R25,000

4.12.1 Minimum wet risk deductible of R100,000 per occurrence to apply.

4.12.2 LEG 3 Deductible (Only in respect of Mechanical and Electrical contracts);

Contracts with a contract value	Deductible
0 to R500,000,000	R1,000,000 per occurrence
R500,000,001 to R1,000,000,000	R1,500,000 per occurrence

4.13 Synopsis of Contract Works Cover

The insurers will indemnify the Insured against physical loss of or damage to any part of the Property Insured:

- a) during dismantling of property in connection with the Insured Contract;
- b) during transit including loading, unloading and temporary storage;
- c) during preparation of the Contract Site and while the Property Insured is on the Contract Site until completion of and transfer of risk in the whole of the permanent works under the Insured Contract to the Employer.
- Where testing and commissioning of the Property Insured is conducted by the Employer "completion" for purposes of this insurance shall be deemed to occur only after successful completion of all testing and commissioning of the whole of the permanent works under the Insured Contract.
- To the extent that the permanent property insurances arranged by the Employer indemnify the Insured for completed portions of the Property Insured prior to completion of the whole of the permanent works under the Insured Contract, this

insurance in respect of such completed portions of the Property Insured shall cease except as provided below.

- Work uncompleted or outstanding in terms of any certificate of completion, certificate of handover or similar document shall continue to be insured until its completion and the inception of the maintenance or defects liability period (as may be described in the Insured Contract) for such uncompleted or outstanding work where after the provisions of 4 below shall apply in respect of such work;
- d) during the maintenance or defects liability period (as may be described in the Insured Contract) pertaining to any part of the permanent works but only in respect of loss or damage:
- arising from a cause occurring prior to commencement of such period of maintenance or defects liability period; or
 - arising from any act or omission of the Insured their servants agents suppliers or sub-contractors in pursuance of the Insureds obligations; or
 - For which the Insured Contractor is responsible under the Insured Contract.
- This limitation of cover shall only apply to the particular contractor who has handed over any part of the permanent works.
- e) Where any of the Property Insured is replaced or renewed during any maintenance or defects liability period the maintenance or defects liability Period of Insurance in respect of such replaced or renewed Property Insured shall be deemed to be extended to include any extended period for which the Insured is responsible.
- f) Where the Insured Contract does not set out specific maintenance provisions, the Employer shall be deemed for purposes of this Section to be indemnified for loss or damage:
- having its cause prior to the commencement of the deemed maintenance or defects liability period, or
 - Occurring in the course of or in connection with repair reinstatement or replacement of property during such period or any act or omission of the Insured in the course of work carried out in pursuance of any obligations under the Insured Contract.

Provided that such deemed period does not exceed 24 months.

4.14 Cover Limitations/ Warranties/ Special Conditions under the Contract Works Policy

4.14.1 Laid Pipes Warranty

- a) Pipes with a diameter not exceeding 500mm are to be end capped on the termination of each day's work to avoid ingress of mud, silt, water, debris, detritus and the like.
- b) Pipes with a diameter exceeding 500mm are to be capped on the termination of each day's work with steel mesh to allow ingress of water to avoid floatation but avoiding ingress of large debris or detritus.

4.14.2 Rail Track Re-Profiling Warranty

- a) The maximum speed of any grinding unit shall not exceed 11.00km per hour.
- b) All Guards, Curtains, Spark Deflectors are to be in place and correctly positioned prior to the commencement of each grind.
- c) Maximum grinding distance in any one execution shall not exceed 10,000 meters.
- d) Any changes in prevailing weather conditions must be recorded and appropriate remedial action taken.
- e) The Insured Parties are to comply with all Fire Fighting requirements as set out in the Project Specification for Track Maintenance with an on Track Grinding / Profiling Machine and any amendments / deviations to this Project Specification are to be advised to the Insurer prior to work being undertaken.

4.15 Used Plant – Basis of Loss Settlement

In respect of Property Insured which has operated under service conditions prior to attachment of indemnity hereunder being lost or damaged the basis upon which the loss shall be settled shall be the cost of repair reinstatement or replacement of the Property Insured except that in respect of such property exceeding five years of age the basis of loss settlement shall not exceed the Agreed Value of such property which shall be calculated on the basis that for each year of life (or part thereof) the present day New Replacement Value of an identical machine or structure is reduced proportionately over a period of 20 (twenty) years subject to a residual indemnification of 20% (twenty percent).

4.16 Special Conditions Concerning the Construction of "Wet Risks"

Insurers shall not indemnify the Insured in respect of the expenses incurred for the following:

- 4.16.1 Loss or damage to berths, wharves, jetties and the like caused by their subsidence or sinking. However, this exclusion shall apply only to those works, which have been incorrectly executed. The burden of proof to show that said works have been correctly executed shall be on the Insured;
- 4.16.2 normal action of the river / *sea;
- 4.16.3 loss of or damage to more than 400m of uncompleted or unprotected seawall, quay or other marine structure;
- 4.16.4 loss damage or liability due to soil erosion, dredging or re-dredging unless necessary to reinstate indemnifiable loss or damage;
- 4.16.5 lost or damaged fill material;
- 4.16.6 replacing or rectifying piles or retaining wall elements;
 - a) which have become misplaced or misaligned or jammed during their construction;
 - b) which are lost or abandoned or damaged during driving or extraction;
 - c) which have become obstructed by jammed or damaged piling equipment or casings.
- 4.16.7 rectifying disconnected or de-clutched sheet piles;
- 4.16.8 any leakage or infiltration of material of any kind;
- 4.16.9 as a result of piles or foundation elements having failed to pass a load bearing test or otherwise not having reached their designed load bearing capacity;
- 4.16.10 for reinstating profiles or dimensions unless necessary to reinstate indemnifiable loss or damage;
- 4.16.11 loss or damage to any floating and other equipment such as caissons, barges and the like and liabilities therefrom;
- 4.16.12 any mobilisation / demobilisation and / or other costs which arise for standby / waiting on weather or offshore construction equipment, except costs exceeding R2,500,000 which arise following physical loss or damage to insured works;
- 4.16.13 loss or damage to pulling wires, anchors, chains and buoys;

- 4.16.14 loss or damage due to impact of shipping unless the Insured cannot obtain an admission of liability from the insurer of the ship owners or identify the responsible vessel, in which case this policy will be obligated to indemnify the Insured;
- 4.16.15 Marine liability.

4.17 Warranties relating to the Construction of "Wet Risks"

The insured shall where practical:

- 4.17.1 receive daily weather updates from the local meteorological office during the period of insurance and make continuous contact to the local meteorological office within 12 hours' notice of an imminent storm; and
- 4.17.2 Make navigation distance for public traffic to work site minimum 200m.

4.18 Special Conditions Concerning Piling Works

The Insurers shall not indemnify the Insured in respect of expenses incurred:

- 4.18.1 for replacing or rectifying piles or retaining wall elements
- which have become misplaced or misaligned or jammed during their construction,
 - which are lost or abandoned or damaged during driving or extraction, or
 - which have become obstructed by jammed or damaged piling equipment or casings,
- 4.18.2 for rectifying disconnected or declutched sheet piles,
- 4.18.3 for rectifying any leakage or infiltration of material of any kind,
- 4.18.4 for filling voids or for replacing lost bentonite,
- 4.18.5 as a result of any piles or foundation elements having failed to pass a load bearing test or otherwise not having reached their designed load bearing capacity,
- 4.18.6 for reinstating profiles or dimensions unless necessary to reinstate indemnifiable loss or damage

The above shall not apply to loss or damage caused by natural hazards.

4.19 Serial Losses in respect of Locomotives and Rolling Stock

If the development of a defect in any electrical or mechanical plant manufactured by or for the Insured for Locomotives or Rolling Stock shall indicate or suggest that a similar defect exists in any other item of such plant insured under this policy the Insurers reserve the right to suspend the insurance in respect of loss or damage due to or arising out of the said defect unless the Insured shall forthwith investigate and if necessary rectify as soon as is reasonably practical the defect in such property at his own expense.

4.20 Cessation of Work

If from any cause work ceases on the site of the Contract for a continuous period in excess of 90 (Ninety) days immediate notice in writing must be given to the Insurer(s) with the details of completed and outstanding work and the Insurer(s) on the receipt of such notice may at its discretion agree continuation of this insurance at special terms to be agreed.

5 Contract Works SASRIA Summary

5.1 Indemnity

The Contract Works SASRIA cover is subject to the Underlying Contract Works policy being current and valid at the effective date as stated in the Schedule Sasria will by payment or at its option by reinstatement or repair indemnify the insured during the period of insurance up to an amount not exceeding the total sum insured or R500 000 000 (five hundred million Rand) (Including VAT) in the aggregate whichever is less against loss of or damage to the property insured directly related to or caused by :

- i. any act calculated or directed to overthrow or influence any State or government, or any provincial, local or tribal authority with force, or by means of fear, terrorism or violence;
- ii. any act which is calculated or directed to bring about loss or damage in order to further any political aim, objective or cause, or to bring about any social or economic change, or in protest against any State or government, or any provincial, local or tribal authority, or for the purpose of inspiring fear in the public, or any section thereof;
- iii. any riot, strike or public disorder, or any act or activity which is calculated or directed to bring about a riot, strike or public disorder;
- iv. any attempt to perform any act referred to in clause (i), (ii) or (iii) above;
- v. the act of any lawfully established authority in controlling, preventing, suppressing or in any way dealing with any occurrence referred to in clause (i), (ii), (iii) or (iv) above.

5.2 Policy Exceptions

The policy does not cover:

- 5.2.1 consequential or indirect loss or damage of any kind or description whatsoever, other than loss of rent if specifically insured, which shall be limited to a period not exceeding that required to render the building tenantable;
- 5.2.2 loss or damage resulting from total or partial cessation of work, or the retardation or interruption of cessation of any process or operation;
- 5.2.3 loss or damage occasioned by permanent or temporary dispossession resulting from confiscation, commandeering or requisitioning by any lawfully constituted authority;
- 5.2.4 In respect of the Contract Works and Materials:
The first amount payable by the Insured, arrived at by calculating 0,100% of the Contract Value of the specific contract for which a claim is made with a maximum first amount payable of R25,000 and will apply to each and every theft loss.
- 5.2.5 Nuclear/Chemical/Biological Terrorism Exclusion where the policy does not cover loss (es) in

any way caused or contributed to by an act of terrorism involving the use or release or the threat thereof of any nuclear weapon or device or chemical or biological agent.

5.3 Special Conditions

All the terms, conditions, exclusions, exceptions and warranties applicable to the Underlying Policy, other than:

- a) Exception A(ii), A(iii)(b), A(iv), A(v) and A(vii) to the extent that A(vii) refers to A(i); A(iii))b), A(iv), A(v) and A(vi); and
- b) The Burden of Proof Clause set out in Exception A to the extent that such Clause refers to the
- c) The Sasria Coupon incorporates the Terms, Conditions, Exceptions, Exclusions and Warranties of the underlying Policy to which it attaches. It does not automatically incorporate the Extensions.

The following extensions and limits will apply to the SASRIA cover noting that these limits are not in addition to the maximum limit of indemnity of R500 million in the aggregate during the policy period:

Costs & Expenses	R 50,000,000
Surrounding Property	R 55,000,000
Surrounding Property - Worked Upon	R 55,000,000
Professional Fees	R 50,000,000
Expediting Expenses	R 50,000,000
Surrounding Property - Watercraft	R 55,000,000
Fire Brigade/Public Authorities	R 20,000,000
Public Authorities Reinstatement	R 10,000,000
Road Reserve & Servitude Extension	R 10,000,000
Documentation	R 2,000,000
Claims Preparation Costs	R 10,000,000
Public Relations Expenses	R 1,000,000
Security/Protection Costs	R 8,695,652

5.4 Additional Contract Works Excess of Loss Cover

In addition to the R500 million (VAT Inclusive) limit of indemnity provided by the above primary Contract Works SASRIA cover, Transnet have purchased an additional Excess Of Loss coupon from SASRIA for a limit of indemnity of R1 billion (VAT Inclusive) in the aggregate in excess of the primary R500 million (VAT Inclusive) limit of indemnity.

6 Contractors Public Liability Insurance Summary

6.1 Cover Provided

Legal Liability to pay as compensation for and in consequence of:

- a) Death of, injury to, illness, or disease contracted by any person.
- b) Loss of / or physical damage to tangible property.

Occurring during the period of insurance and arising out of or in connection with the performance of the Insured Contracts.

6.2 The Insured

6.2.1 As Employer and Named Insured:

Transnet (SOC) Limited, and their subsidiary and associated companies and/or Joint Venture Partners as required and for whom they have instructions to insure or they have or assume a responsibility to insure whether contractually or otherwise as their respective rights and interests may appear;

6.2.2 The Contractor:

- a) All Contractors undertaking work in connection with The Insured Contract
- b) The Employer to the extent that the Employer undertakes work in connection with The Insured Contract;

6.2.3 Sub-Contractors:

- a) All Sub-Contractors employed by the Contractor and all other Sub-Contractors (whether nominated or otherwise) engaged in fulfilment of The Insured Contract); and

6.2.4 to the extent required by any contract or agreement;

- a) transporters, suppliers, manufacturers, vendors, other persons, persons providing storage facilities, plant owners and/or operators in respect of liability loss or damage arising out of The Insured Contract;
- b) project managers, architects, land surveyors, quantity surveyors, engineers and other advisors or consultants or sub-consultants appointed in the performance of the Insured Contract activities;

all for their respective rights and interests.

6.3 Territorial Limits

The Republic of South Africa.

6.4 Insured Contracts

All contracts (including any undertaking awarded or commenced prior to inception of the period of Insurance) involving design, construction, performance testing and commissioning in respect of the works and shall include capital expenditure, upgrade, modification, maintenance or overhaul, refurbishment, renovation, retrofitting or alterations and additions to existing facilities undertaken by the Insured or other Insured Parties acting on their behalf but

Excluding:

- a) Contracts, which at award stage have a value in excess of R 1,000,000,000.
- b) Contracts with an estimated construction period at award exceeding 48 months but 60 months in respect of contracts awarded prior to 1 April 2020 for rail maintenance contracts For Transnet Freight & Rail and for Transnet Pipeline's logistical support for inline inspections and identification of defects in respect of Transnet's pipeline assets (all excluding Defects Liability/Maintenance period).
- c) Contracts with a Contractual Defects Liability Maintenance Period exceeding 24 months.
- d) Contracts involving construction or erection of petrochemical manufacturing plant(s) but this exclusion shall not apply to pipelines and other associated works undertaken by or on behalf of the Insured.
- e) Contracts in or on any aircraft.
- f) Off-shore contracts - "Off-shore contracts" means all works and installations in the sea or on the seabed and do not constitute normal Wet Risk Contracts like harbours, moles, bridges, wharves or sewage or cooling water intake or outlet facilities, piers, marinas, causeways, breakwaters, jetties, dry docks and offshore pipelines when connected directly to onshore facilities and canal developments. "Off-Shore contracts" shall include oilrigs and oil platforms.

6.5 Policy Limits

Contractors Public Liability	R100,000,000 any one occurrence / unlimited during the Period of Insurance
Contractors Negligent Removal or weakening of Support	R100 000 000 any one occurrence and R100,000,000 per site in the aggregate during the Period of Insurance.

Statutory Legal Defense Costs	*R5 000 000 in the aggregate during the Period of Insurance.
Arrest / Assault / Defamation	*R5 000 000 in the aggregate during the Period of Insurance.
Emergency Medical Expenses	R5 000 000 any one occurrence
Prevention of Access	*R5 000 000 in the aggregate during the Period of Insurance.
Trespass / Nuisance	*R5 000 000 in the aggregate during the Period of Insurance.
Claims Preparation Costs	R5 000 000 any one occurrence

*Where the limits are noted as in the aggregate during the policy period of insurance, that such aggregated limit is applicable to all Transnet Insured Contracts collectively and in total and does not apply to each contract separately.

6.6 Deductible(s)

R50,000 per occurrence but increased to R5,000,000 in respect of Spread of Fire and/or Hot Works and R250,000 in respect of Sudden and Accidental Pollution and/or Goods on the Hook.

6.7 Main Policy Exceptions

- 6.7.1 The amount of the policy deductible;
- 6.7.2 Death or injury to own employees;
- 6.7.3 Motor vehicle liabilities under legislation or as defined in Multi-lateral Motor Vehicles Accident Fund No. 93 of 1989 as amended;
- 6.7.4 Arising out of the ownership, hire leasing or operation of any airport, airstrip or helicopter pad;
- 6.7.5 Property belonging to the Insured or in his care custody and control;
- 6.7.6 Property forming part of Contract Works;
- 6.7.7 Fines, penalties, punitive and exemplary damages;
- 6.7.8 Rectification of the works arising out of design, formula, specification, supervision, treatment or advice given for a fee;
- 6.7.9 Gradual pollution and contamination;
- 6.7.10 Ownership hiring or leasing of any aircraft, watercraft or hovercraft;
- 6.7.11 War, terrorism, asbestos and nuclear risks; and
- 6.7.12 Professional Indemnity.
- 6.7.13 Covid 19 and infectious diseases.

7 Project Professional Indemnity Insurance Summary

7.1 Cover Provided

Professional Indemnity

- a) In respect of damages, which the Insured shall become legally liable, to pay in consequence of neglect, error or omission by or on behalf of the Insured in the conduct or execution of their Professional Activities and Duties as defined.
- b) Prior To Handover/Rectification - against loss arising out of any defect in the works discovered prior to the issue of any practical completion or take-over certificate provided that any such defects are caused by a negligent breach of a Professional Activity or Duty by the Insured in consequence of neglect, error or omission by or on behalf of the Insured.

7.2 The Insured

7.2.1 As Employer and Named Insured:

Transnet (SOC) Limited and their subsidiary and associated companies and/or Joint Venture Partners as required and for whom they have instructions to insure or they have or assume a responsibility to insure whether contractually or otherwise as their respective rights and interests may appear;

7.2.2 The Contractor:

- a) All Contractors undertaking work in connection with The Insured Contract
- b) The Employer to the extent that the Employer undertakes work in connection with The Insured Contract;

7.2.3 Sub-Contractors:

All Sub-Contractors employed by the Contractor and all other Sub-Contractors (whether nominated or otherwise) engaged in fulfilment of The Insured Contract); and

7.2.4 to the extent required by any contract or agreement;

All project managers; architects; land surveyors; quantity surveyors; engineers and other advisors or consultants or sub-consultants appointed in the performance of the Insured Contract activities

all for their respective rights and interests

7.3 Jurisdiction

Worldwide excluding North America

7.4 Insured Contracts

All contracts (including any undertaking awarded or commenced prior to inception of the period of Insurance) involving design, construction, performance testing and commissioning in respect of the works and shall include capital expenditure, upgrade, modification, maintenance or overhaul, refurbishment, renovation, retrofitting or alterations and additions to existing facilities undertaken by the Insured or other Insured Parties acting on their behalf but Excluding:

- a) Contracts, which at award stage have a value in excess of R 1,000,000,000.
- b) Contracts with an estimated construction period at award exceeding 48 months but 60 months in respect of contracts awarded prior to 1 April 2020 for rail maintenance contracts For Transnet Freight & Rail and for Transnet Pipeline's logistical support for inline inspections and identification of defects in respect of Transnet's pipeline assets (all excluding Defects Liability/Maintenance period).
- c) Contracts with a Contractual Defects Liability Maintenance Period exceeding 24 months.
- d) Contracts involving construction or erection of petrochemical manufacturing plant(s) but this exclusion shall not apply to pipelines and other associated works undertaken by or on behalf of the Insured.
- e) Contracts in or on any aircraft.
- f) Off-shore contracts - "Off-shore contracts" means all works and installations in the sea or on the seabed and do not constitute normal Wet Risk Contracts like harbours, moles, bridges, wharves or sewage or cooling water intake or outlet facilities, piers, marinas, causeways, breakwaters, jetties, dry docks and offshore pipelines when connected directly to onshore facilities and canal developments. "Off-Shore contracts" shall include oilrigs and oil platforms.

7.5 Policy Retroactive Dates

- 1 July 1995 Transnet Limited
- 16 January 2006 HMG Joint Venture
- 1 April 2008 Limit of Indemnity R200 000 000 per occurrence but R400 000 000 in the aggregate
- 1 April 2010 Deductible R1 000 000 (R300 000 prior to 1 April 2010)
- 1 April 2014 Deductible R2 000 000

7.6 Limit of Indemnity

Professional Indemnity - *R100,000,000 in the aggregate during the policy period of insurance.

*Where the limit is noted as in the aggregate during the policy period of insurance, that such aggregated limit is applicable to all Transnet Insured Contracts collectively and in total and does not apply to each contract separately.

7.7 Policy Extension

Limits of Indemnity

Claims Preparation Costs	*R7,500,000 in the aggregate during the policy period of insurance
Loss of Documents	*R2,000,000 in the aggregate during the policy period of insurance
Statutory Defence Costs	*R5,000,000 in the aggregate during the policy period of insurance
Defamation	*R5,000,000 in the aggregate during the policy period of insurance
Infringement of Copyright	*R5,000,000 in the aggregate during the policy period of insurance

*Where the limits are noted as in the aggregate during the policy period of insurance, that such aggregated limit is applicable to all Transnet Insured Contracts collectively and in total and does not apply to each contract separately.

7.8 Deductibles

7.8.1 The deductibles are noted as follows:

R5,000,000 each and every claim but R10,000 in respect of Claims Preparation Costs, Loss of Documents, Statutory Defense Costs, Defamation and Infringement of Copyright.

7.9 Policy Special Conditions

Condition precedent to liability that the Insured is fully qualified and registered with the relevant Industry Body/Association in terms of legislation as applicable.

Prior to hand over/rectification – the insured must give prior written notice to the Insurers of the intention to take remedial action to rectify such defect and obtain the Insurers' written agreement to such action being taken and the costs and expenses expected to be expended.

7.10 Policy Main Exclusions

- 7.10.1 Excludes all consequential loss other than cost of re-design, rectification and replacement as a consequence of the defect.
- 7.10.2 Excludes Supervision.
- 7.10.3 Excludes liability arising out of environmental impairment / pollution
- 7.10.4 Excludes the cost of removing, nullifying or cleaning-up the effects of environmental impairment/ pollution.
- 7.10.5 Excludes war, invasion, acts of foreign enemies, hostilities or warlike operations (whether war be declared or not), civil war, rebellion, revolution, insurrection, civil commotion assuming the proportions of or amounting to an uprising, military or usurped power, any act of terrorism and nuclear risks
- 7.10.6 Excludes fines, penalties, punitive and exemplary damages, multiplication of compensatory damages and/or any other non-compensating damages of any kind.
- 7.10.7 Excludes liability from the hazardous nature of asbestos.
- 7.10.8 Excludes medical malpractice.
- 7.10.9 Excludes failure to meet contractual requirements relating to efficiency, output or durability.
- 7.10.10 Excludes failure to meet completion dates
- 7.10.11 Excludes the estimation of probable costs other than cost advice and cost planning services normally provided by a Quantity Surveyor or Project manager.
- 7.10.12 Excludes incorrect authorisation of payment.
- 7.10.13 Excludes breach of any statutory regulation.
- 7.10.14 Excludes liability from the insolvency, liquidation or judicial management of the Insured.
- 7.10.15 Excludes the certification of value of work executed by any contractor where the Insured has an equity interest in such contractor;
- 7.10.16 Excludes liability due to unlawful competition, unfair practices, abuse of monopoly power, cartel activities or breach of a competitions act
- 7.10.17 Sanctions Exclusion
- 7.10.18 Covid 19 and infectious diseases.

Annexure 1 – Incident Advice Form

All incidents have to be reported within 10 days of occurrence

SEND A COPY OF THIS DOCUMENT TO THE INSURANCE DEPARTMENT WITHIN YOUR OD/ SPECIALIST UNIT.

Insurance claim advice form

Principled Controlled Insurance 2022-2023

DETAILS OF PROJECT / CONTRACT

Project number: _____

Project Name: _____

Site Physical Address: _____

Name and contact details of Project Manager: _____

Name and contact details of person who can be contacted in regards to this claim:

Main Contractor or Sub-Contractor: _____

Value of the Project / Contract at time of award: _____

Free issue material value (if not included in the value above): _____

Project / Contract Start Date: _____

Estimated End Date: _____

LOSS / DAMAGE OF PROPERTY CLAIMS (CONSTRUCTION WORK)

Date of Incident: _____

Description of loss or damage: _____

Possible cause of the loss / Party responsible for the loss: _____

Estimated value of the loss: _____

In the event of theft – Police case number and name of Police Station incident was reported to:

PUBLIC LIABILITY CLAIM (I.E. 3RD PARTY INVOLVED IN THE INCIDENT)

Describe the incident, which might lead to a public liability claim:

Estimated value of the claim: _____

Details of third party (list all possible details of third party i.e. name, contact details, company name etc.)

Attach the Following to this claim submission:

- 1 Cost breakdown of the estimated claim amount (even if it is only a guestimate at reporting time)
- 2 Documentation supporting the claim e.g. photos, reports etc.

I/We warrant that the foregoing information provided is true and correct and that no information has been withheld in respect of the incident. I/We undertake to advise the Insurance office in writing in the event of any changes to supplied information and in the event of recovery of any part of the property forming the subject of this claim.

Signature _____ Name _____

Capacity: _____ Date _____

Claim form to be submitted to the Insurance Office of the relevant Operating Division or Specialist Unit.

Note:

Claim must be notified within 30 days of the incident. Attach additional pages if space provided is not sufficient.

Supply as much detailed information as possible during notification. If information is not available indicate such on the form.

INSURANCE ADMINISTRATION

Unique Claim Number: _____

TOMS: _____

Broker Claim Number: _____

Date Received from Project: _____

Date Submitted to Broker: _____

Loss Adjuster: _____

Agreement of Loss Date and Value: _____

"HOW TO" GUIDE FOR BIDDERS

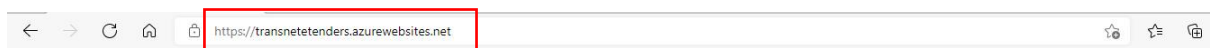
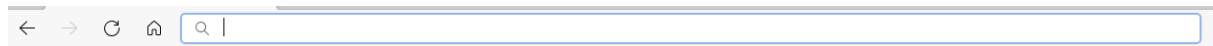
REGISTER ON ETENDER PORTAL

ACCESS TENDERS


NB: Do not wait for the last minute to register or to bid for a tender. Ensure you complete your process at least 1 day (24hours) before the closing date

Go to Google Chrome 

In the address bar type: <https://transnetetenders.azurewebsites.net>



https://transnetetender.b2clogin.com/transnetetender.onmicrosoft.com/b2c_1_signupsignin/oauth2/v2.0/authorize?client



Sign in with your email address

Email Address

Password

[Forgot your password?](#)


Sign in

Don't have an account? [Sign up now](#)

If not already registered, click on Sign up now.


Ensure that the email you use to sign in is the same as the email that you received from the tender invite on the email, otherwise you will not see the tender

[Cancel](#)



[Send verification code](#)

Country/Region



[Create](#)

Complete all fields, before selecting “Send verification code” and confirm that all information is correct.


VERY IMPORTANT: Each field needs to be completed and not to be left blank

If you do not have a central Supplier Database number, enter the same company registration number in that field.

Send verification code

After completing all fields, select "Send verification code". The code will be sent to your email.

< Cancel



Verification code has been sent to your inbox. Please copy it to the input box below.

abc@gmail.com

Verification Code

Copy the code as received on the email and paste it in the Verification code field
Then click on Verify code

Verify code

Send new code

Forgot your password?

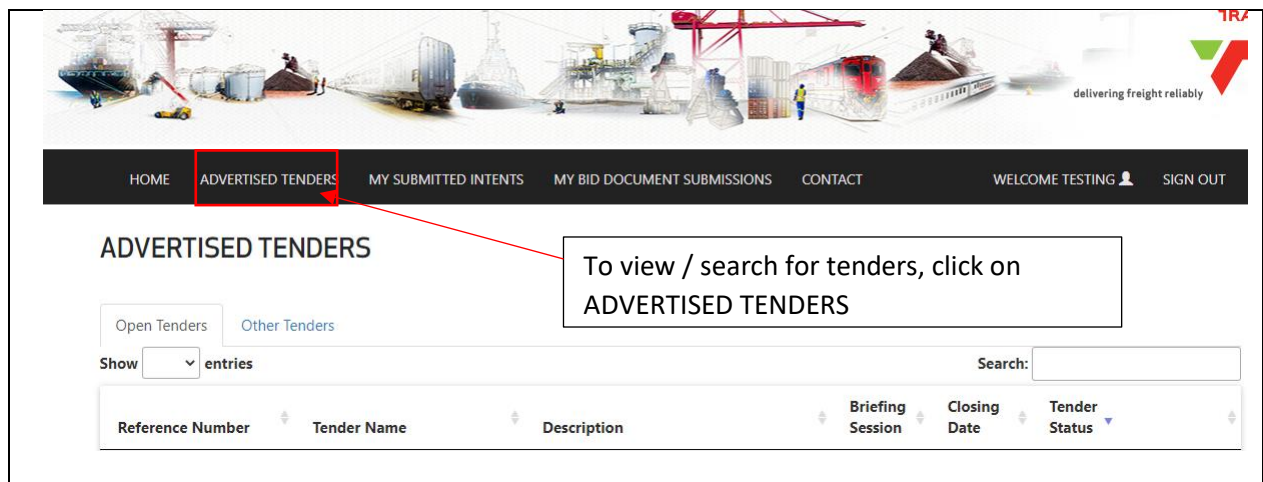
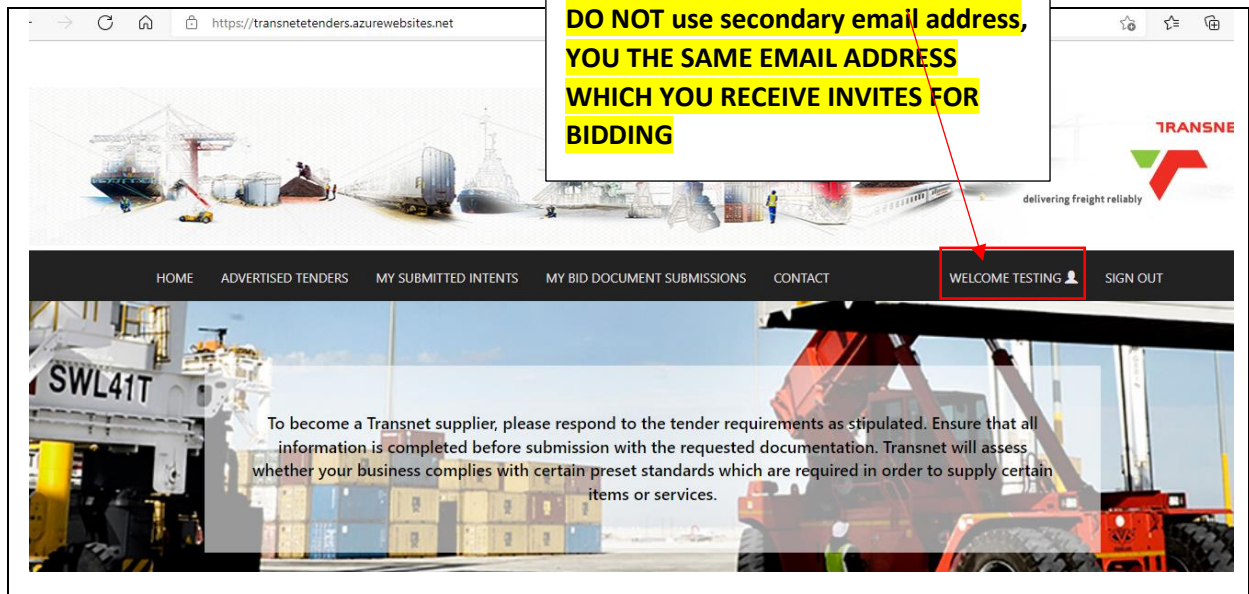
Sign in

Don't have an account? [Sign up now](#)

Then click on Sign in

Once registered and signed in, the home screen will have “WELCOME (Registered user)”

DO NOT use secondary email address, YOU THE SAME EMAIL ADDRESS WHICH YOU RECEIVE INVITES FOR BIDDING



To view / search for tenders, click on ADVERTISED TENDERS

Tender Invitation For Tender Ref # TE/2022/04/0697/RFQ - Message (HTML)

File Message Help Tell me what you want to do

Delete Archive Reply Reply All Forward Share to Teams ATM signed To Manager Team Email Move Tags Editing Read Aloud Translate Zoom Send to OneNote Viva Insights

Tender Invitation For Tender Ref # TE/2022/04/0697/RFQ

SRV-TCC-Etender
To noreply@transnet.net

This message was sent with Low importance.

Dear Suppliers,
You have been invited to bid and respond to the following tender:

Name Of Tender : TE22-SRX-1FG-02068
Description : STOP; TOP BUNK, OD 19.5 X HT 6.5 MM
Tender Number : TE/2022/04/0697/RFQ

Access to this tender will be granted by using this email when you sign up/sign in. To access the tender information

Kind Regards,
Transnet eTenders

When a bidder receives an email to quote, the bidder needs to register with the email address of the recipient that received the email. If already registered, sign in.

NOTE: The details on this email is intended for guidance only and not to be used on the live system

HOME ADVERTISED TENDERS MY SUBMITTED INTENTS MY BID DOCUMENT SUBMISSIONS CONTACT WELCOME TESTING SIGN OUT

ADVERTISED TENDERS

Open Tenders Other Tenders

Show entries Search:

Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TCC/2021/11/0031/RFQ	For the supply and installation of an air compressor	For the supply and installation of an air compressor for indoor shooting range that operates the laser system and supply air to air guns utilised during training and conduct maintenance on air supply system and hoses.		12/10/2021 12:00:00 PM	Closed	View Details
TFR/2021/12/0014/RFQ	ELECTRICAL MATERIAL (CABLES)	SUPPLY AND DELIVERY OF ELECTRICAL MATERIAL (CABLES) FOR A ONCE OFF PERIOD		12/13/2021 4:00:00 PM	Closed	View Details
TFR/2021/12/0017/RFQ	CRAC_JHB_36509.	FOR THE SUPPLY AND DELIVERY OF HIGH BACK CHAIRS FOR CTC OFFICES IN CENTRAL, EASTERN AND WESTERN REGIONS, FOR A ONCE OFF PERIOD.		12/14/2021 10:00:00 AM	Closed	View Details
TFR/2021/12/0015/RFQ	CRAC-JHB-36313	FOR THE SUPPLY AND DELIVERY OF VARIOUS CLAMPS, TERMINAL LUGS, DROPPER CLIPS AND		1/13/2022 12:00:00	Closed	View Details

When signed in, select "ADVERTISED TENDERS".

To manually search and change the view from Closed to Open, click twice on arrow next to "Tender Status". The arrow pointing down will change to blue and open tenders will be displayed.


HOME
ADVERTISED TENDERS
MY SUBMITTED INTENTS
MY BID DOCUMENT SUBMISSIONS
CONTACT
WELCOME TESTING
SIGN OUT

ADVERTISED TENDERS

Open Tenders
Other Tenders

Show
▼
entries
Search:

Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TE/2022/04/0450/RFQ	VALVE:L-1 LOAD DET,WAGONS AIRBRAKE	VALVE:L-1 LOAD DET,WAGONS AIRBRAKE-062101802 VALVE; TYPE: L-1 LOAD DETECTOR, MEDIA FOR WHICH DESIGNED: WAGONS AIRBRAKE, CONNECTION TYPE: FLANGE, SPECIAL FEATURES: BLUE, WITHOUT PIPE BRACKET; SIMILAR ITEM: 062004338		4/8/2022 10:00:00 AM	Open	View Details
TE/2022/04/0494/RFQ	GEAR OIL	OIL, GEAR TYPE SYNTHETIC BRAND NAME MOBILGEAR SHC SERIES GRADE SCH 6800 VISCOSITY RATING 220 TO 320 FLASH POINT 234 DEG C COLOR ORANGE CONTAINER TYPE SACHET 250 G CONTAINER CAPACITY 14 KG FOR USE ON: 39-200 GM, 15E AND 19E LOCOMOTIVES		4/8/2022 10:00:00 AM	Open	View Details
TE/2022/04/0495/RFQ	SUPPLY OF CORROSION (NALCOOL) - APPROVED	ITEM NUMBER - 077807563 INHIBITOR, CORROSION; TYPE: COOL-C18, COLOR: RED,		4/8/2022 10:00:00	Open	View Details



HOME
ADVERTISED TENDERS
MY SUBMITTED INTENTS
MY BID DOCUMENT SUBMISSIONS
CONTACT
WELCOME TESTING
SIGN OUT

ADVERTISED TENDERS

Open Tenders
Other Tenders

Show
▼
entries
Search: TE/2022/04/0697/RFQ

Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM		4/13/2022 10:00:00 AM	Open	View Details

To search for a specific tender, the tender number, tender name or description can be used for searching.

ADVERTISED TENDERS

Open Tenders
Other Tenders

Show
▼
entries
Search: TE22-SRX-1FG-02068

Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM		4/13/2022 10:00:00	Open	View Details

When the tender has been identified, click on "View Details"

When the “View Details” has been selected, the following screen will be displayed where the attachments can be viewed or downloaded.

HOME ADVERTISED TENDERS MY SUBMITTED INTENTS MY BID DOCUMENT SUBMISSIONS CONTACT WELCOME TESTING SIGN OUT

TENDER DETAILS

Tender Details

Tender Reference Number	TE/2022/04/0697/RFQ
Name Of Tender	TE22-SRX-1FG-02068
Description	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM
Tender Type	RFQ
Contact Person	Charl du Preez Transnet Engineering SLR
Contact Person Email Address	Charl.duPreez@transnet.net
Date Published	4/7/2022 3:51:47 PM
Closing Date	4/13/2022 10:00:00 AM
Briefing Date And Time	
Briefing Details	
Location Of Service	Coaches, Salt River

Briefing Session
Closing Date
4/13/2022 10:00:00 AM
Attachments

2.14 Standard Terms and Conditions of Contract f

2.18 Supplier Integrity Pact_April 2020_v1.pdf

2.19 Non Disclosure Agreement_April 2020_v1.pdf

2.9 Request for Quotations TE22-SRX-1FG-02068,

Log An Intent To Bid
☐

If interested to bid, on the same page there's an option to select: **Log an Intent to Bid**. Once selected, an option will appear to “**Submit Intent**” or “**Cancel**”. Click on **Submit Intent**

Tender Details

Tender Reference Number	TE/2022/04/0697/RFQ
Name Of Tender	TE22-SRX-1FG-02068
Description	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM
Tender Type	RFQ
Contact Person	Charl du Preez Transnet Engineering SLR
Contact Person Email Address	Charl.duPreez@transnet.net
Date Published	4/7/2022 3:51:47 PM
Closing Date	4/13/2022 10:00:00 AM
Briefing Date And Time	
Briefing Details	
Location Of Service	Coaches, Salt River
Name Of Institution	TE
Tender Category	Goods
Tender Status	Open

Briefing Session
Closing Date
4/13/2022 10:00:00 AM
Attachments

2.14 Standard Terms and Conditions of Contract f

2.18 Supplier Integrity Pact_April 2020_v1.pdf

2.19 Non Disclosure Agreement_April 2020_v1.pdf

2.9 Request for Quotations TE22-SRX-1FG-02068,

Log An Intent To Bid
☒

Tender Details

Tender Reference Number

Name Of Tender

Description

Tender Type RFQ

Contact Person Charl du Preez Transnet Engineering SLR

Contact Person Email Address Charl.duPreez@transnet.net

Date Published 4/7/2022 3:51:47 PM

Closing Date 4/13/2022 10:00:00 AM

Briefing Date And Time

Briefing Details

Location Of Service

Name Of Institution

Tender Category

Tender Status

Intent to Bid

Your request to log an intent to bid has been successfully submitted.

Close

When the "Submit Intent" is selected, a message will appear to indicate that the request was successfully submitted. Click on close and wait for the next screen.

Briefing Session

Closing Date 4/13/2022 10:00:00 AM


Attachments

- 2.14 Standard Terms and Conditions of Contract for
- 2.18 Supplier Integrity Pact_April 2020_v1.pdf
- 2.19 Non Disclosure Agreement_April 2020_v1.pdf
- 2.9 Request for Quotations TE22-SRX-1FG-02068.pdf

Log An Intent To Bid

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HOME
ADVERTISED TENDERS
MY SUBMITTED INTENTS
MY BID DOCUMENT SUBMISSIONS
CONTACT
WELCOME TESTING
SIGN OUT

MY SUBMISSION INTENTS

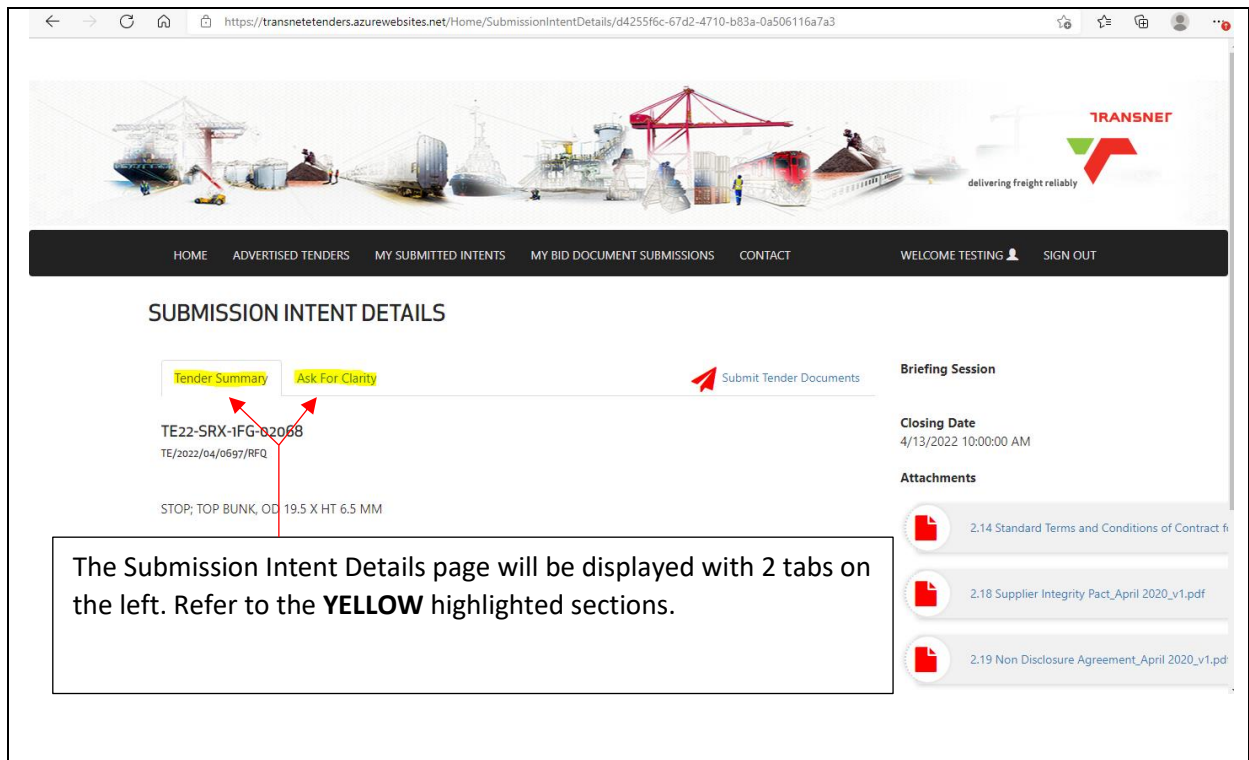
Show 10 entries

Tender Reference Number	Name	Description Of Tender	Briefing Session Date	Closing Date	View Details
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM		4/13/2022 10:00:00 AM	View Details

Showing 1 to 1 of 1 entries

Previous 1 Next

The screen should be updated and load the "MY SUBMITTED INTENTS". To proceed to capturing your bid documents, click on "View Details"



https://transnettenders.azurewebsites.net/Home/SubmissionIntentDetails/d4255f6c-67d2-4710-b83a-0a506116a7a3

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SUBMISSION INTENT DETAILS

Tender Summary **Ask For Clarity** [Submit Tender Documents](#)

TE22-SRX-1FG-02068
TE/2022/04/0697/RFQ

STOP, TOP BUNK, OD 19.5 X HT 6.5 MM

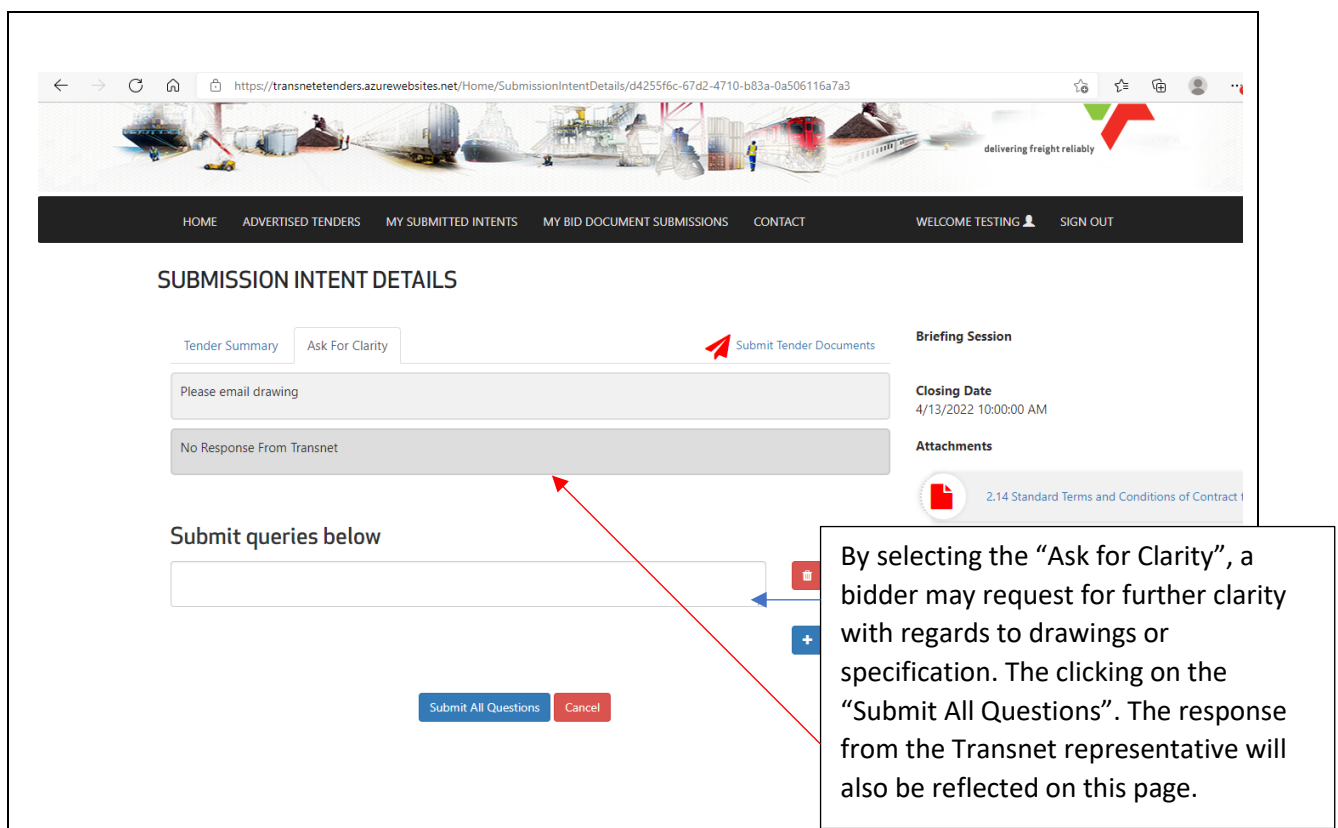
Briefing Session

Closing Date
4/13/2022 10:00:00 AM

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- 2.19 Non Disclosure Agreement_April 2020_v1.pdf

The Submission Intent Details page will be displayed with 2 tabs on the left. Refer to the **YELLOW** highlighted sections.



https://transnettenders.azurewebsites.net/Home/SubmissionIntentDetails/d4255f6c-67d2-4710-b83a-0a506116a7a3

HOME ADVERTISED TENDERS MY SUBMITTED INTENTS MY BID DOCUMENT SUBMISSIONS CONTACT WELCOME TESTING SIGN OUT

SUBMISSION INTENT DETAILS

Tender Summary **Ask For Clarity** [Submit Tender Documents](#)

Please email drawing

No Response From Transnet

Submit queries below

[Submit All Questions](#) [Cancel](#)

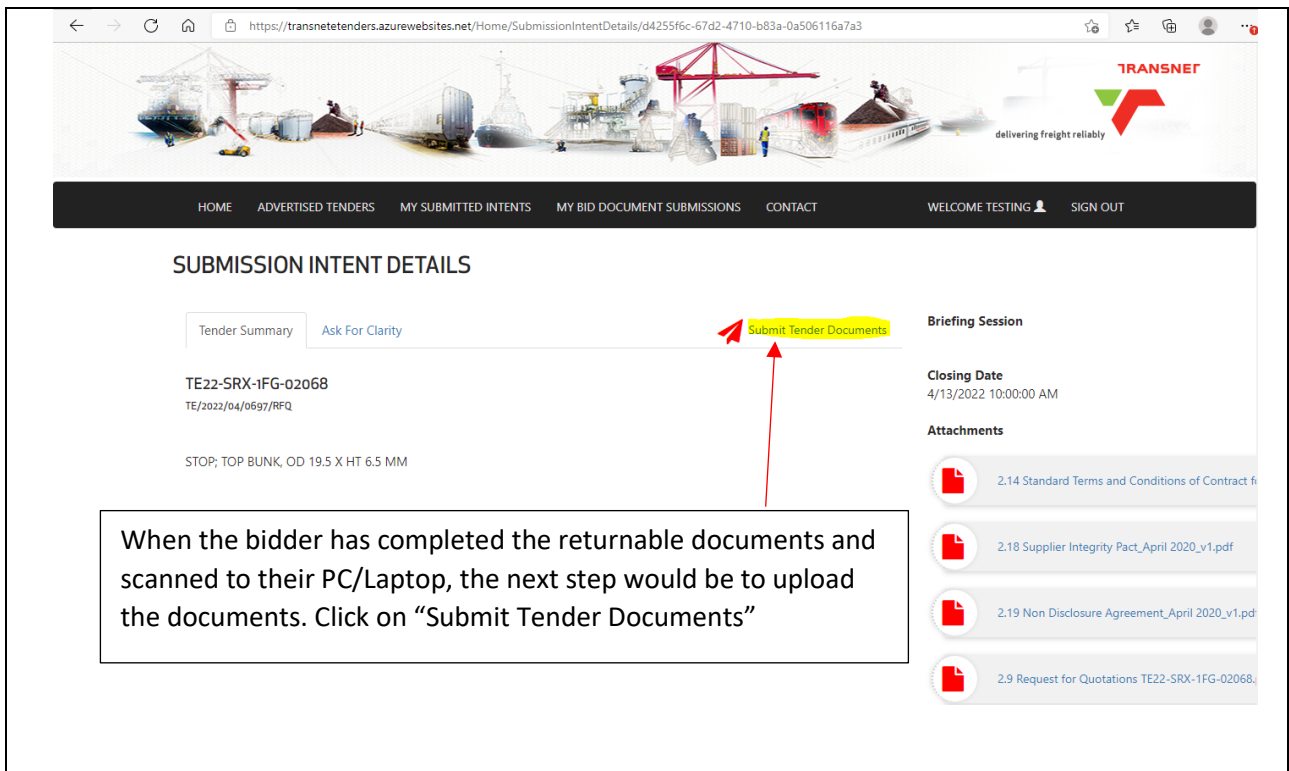
Briefing Session

Closing Date
4/13/2022 10:00:00 AM

Attachments

- 2.14 Standard Terms and Conditions of Contract 1

By selecting the "Ask for Clarity", a bidder may request for further clarity with regards to drawings or specification. The clicking on the "Submit All Questions". The response from the Transnet representative will also be reflected on this page.



Submission Intent Details

Tender Summary Ask For Clarity **Submit Tender Documents**

TE22-SRX-1FG-02068
TE/2022/04/0697/RFQ

STOP; TOP BUNK, OD 19.5 X HT 6.5 MM

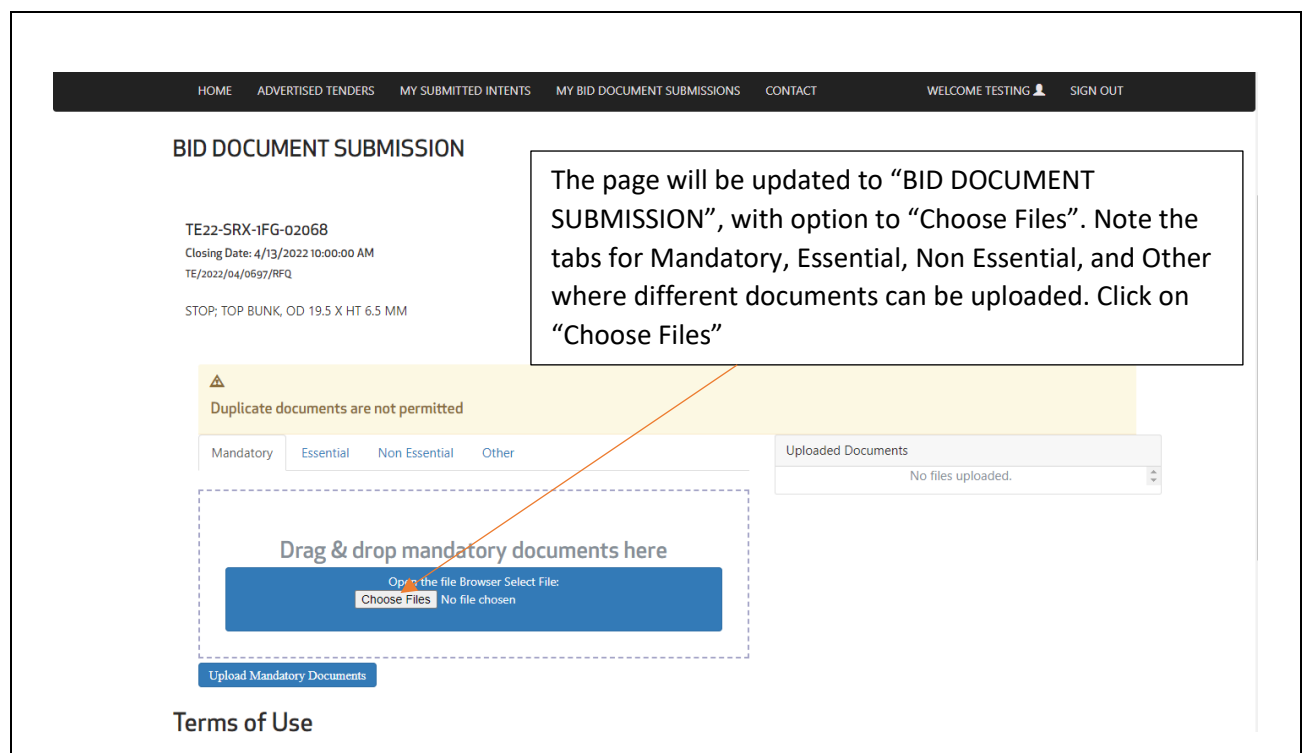
When the bidder has completed the returnable documents and scanned to their PC/Laptop, the next step would be to upload the documents. Click on “Submit Tender Documents”

Briefing Session

Closing Date
4/13/2022 10:00:00 AM

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BID DOCUMENT SUBMISSION

TE22-SRX-1FG-02068
Closing Date: 4/13/2022 10:00:00 AM
TE/2022/04/0697/RFQ

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The page will be updated to “BID DOCUMENT SUBMISSION”, with option to “Choose Files”. Note the tabs for Mandatory, Essential, Non Essential, and Other where different documents can be uploaded. Click on “Choose Files”

Duplicate documents are not permitted

Mandatory Essential Non Essential Other

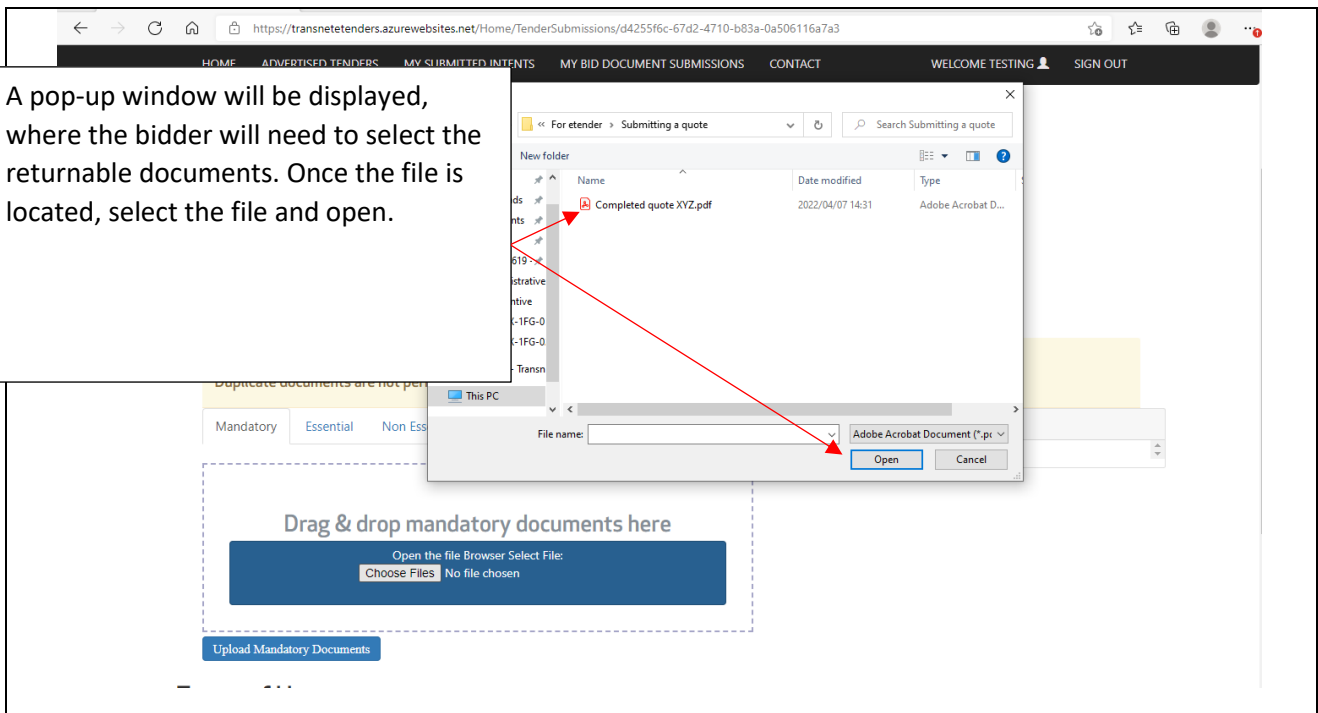
Uploaded Documents
No files uploaded.

Drag & drop mandatory documents here

Open the file Browser Select File:
Choose Files No file chosen

Upload Mandatory Documents

Terms of Use



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BID DOCUMENT SUBMISSION

TE22-SRX-IFG-02068

Closing Date: 4/13/2022 10:00:00 AM

TE/2022/04/0697/Rfq

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Duplicate documents are not permitted

Mandatory

Essential

Non Essential

Other

Drag & drop mandatory documents here

Open the file Browser Select File:

Choose Files

Completed ...ote XYZ.pdf

Upload Mandatory Documents

Uploaded Documents

No files uploaded.

When the file has been successfully transferred, select “Upload Mandatory [or tab name] Documents. The system allows you to upload 30MB per file, you can upload multiple files. Ensure that your internet connection and speed is stable.

The "Uploaded Documents" section will be updated to confirm that the document was uploaded, then click on "Submit Bid"

TE/2022/04/0697/RFQ

STOP; TOP BUNK, OD 19.5 X HT 6.5 MM

⚠ Duplicate documents are not permitted

Mandatory Essential Non Essential Other

Drag & drop mandatory documents here

Open the file Browser Select File:
Choose Files No file chosen

Upload Mandatory Documents

Uploaded Documents

Completed quote XYZ.pdf - Document Type: Mandatory Documents


Delete

Terms of Use

Information provided by the bidder through this portal constitute a binding bid submission/response and a commitment to deliver Transnet requirements. Kindly note that the system automatically ranks the outcome of the evaluation of price and BBBEE scoring based on the information provided. Pricing and BBBEE information provided is the responsibility of the bidder to ensure correctness and Transnet will only consider your latest submission made before the closing date.

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MY BID DOCUMENT SUBMISSIONS

Show 10 entries Search:

Tender Reference Number	Name	Date Submitted	Company Name	View Details
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	4/8/2022 8:59:06 AM	Transnet Engineering	View Details

Showing 1 to 1 of 1 entries

Previous 1 Next

The screen will progress to "MY BID DOCUMENT SUBMISSION", where the "View Details" can be selected to confirm that all required information is submitted correctly.

RFP LIST OF ANNEXURES

ANNEXURE 1:	SITE LAYOUT PLAN
ANNEXURE 2:	CAD STANDARD (ENG-STD-0001)
ANNEXURE 3:	CONTRACTOR DOCUMENTATION SUBMISSION REQUIREMENT
ANNEXURE A:	TRANSNET GENERAL QUALITY REQUIREMENTS FOR CONTRACTORS AND SUPPLIERS QAL-STD-0001
ANNEXURE B:	CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROGRAMME
ANNEXURE C:	HEALTH AND SAFETY QUESTIONNAIRE
ANNEXURE D:	SHE SPECIFICATION
ANNEXURE E:	TRANSNET (SOC) LIMITED – PRINCIPAL CONTROLLED INSURANCE
ANNEXURE F:	GUIDE ON HOW TO ACCESS AND SUBMIT TENDERS