



**Environmental Monitoring Service, at the
Bulk Terminal RO Plant, Port of Saldanha on
a monthly basis for a period of thirty six (36)
months**

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Site:
Bulk Terminal Saldanha
Multi-Purpose Terminals

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1. DEFINITIONS

1.1.Contract

- 1.1.1. An agreement with specific terms between two or more parties or entities based on mutual consent, which has legal effects and involves transfer of consideration – usually financial or some other type of benefit.

1.2.Environmental Impact Assessment

- 1.2.1. Environmental assessment is the assessment of the environmental consequences of a plan, policy, program, or actual projects prior to the decision to move forward with the proposed action.

1.3.Coastal Waters Discharge Permit

- 1.3.1. means a permit contemplated in section 69(1) of the National Environmental Management : Integrated Coastal Management Act , 2008 (Act No.24 of 2008)

1.4.Risk Assessment

- 1.4.1. A risk assessment in this procedure means the process where all risks associated with the contract and its execution identified, mitigated and managed.

1.5.Specification

- 1.5.1. An act of identifying something precisely or of stating a precise requirement.

2. ABBREVIATIONS

- | | | |
|--------------|-----------|---|
| 2.1. | CWDP: | Coastal Waters Discharge Permit |
| 2.2. | RO: | Reverse osmosis |
| 2.3. | SHERQ: | Safety, Health, Environmental, Risk and Quality |
| 2.4. | TPT: | Transnet Port Terminals |
| 2.5. | RFQ: | Request For Quotation |
| 2.6. | OHSAS: | Occupational Health and Safety Act of South Africa |
| 2.7. | BTS: | Bulk Terminal Saldanha |
| 2.8. | MPT: | Multipurpose Terminal |
| 2.9. | TIMS: | Transnet Integrated Management System |
| 2.10. | NEM:ICMA: | National Environmental Management: Integrated Coastal |

Management Act 39 of 2004

2.11.	DFFE:	Department of Forestry, Fisheries and the Environment.
2.12.	TOC:	Total Organic Carbon
2.13.	TSS:	Total Suspended Solids
2.14.	pH:	Potential Hydrogen
2.15.	Fe:	Iron
2.16.	As:	Arsenic
2.17.	Cd:	Cadmium
2.18.	Cu:	Copper
2.19.	Cr:	Chromium
2.20.	Mn:	Manganese
2.21.	Hg:	Mercury
2.22.	Ni:	Nickel
2.23.	Pd:	Palladium
2.24.	Zn:	Zinc
2.25.	EAP:	Environmental Assessment Practitioner
2.26.	Mg/I:	Milligram per liter
2.27.	PSU:	Practical Salinity Unit
2.28.	°C:	Degrees Celsius
2.29.	YSI:	Yellow Springs Instrument

3. BACKGROUND

3.1. TPT Bulk Terminal Saldanha (BTS) has been issued with a Coastal Waters Discharge Permit (CWDP) by the Department of Environmental Affairs for a Reverse Osmosis Desalination Plant that discharges concentrated brine effluent from diffusers situated either side of Caisson 3 of the Iron-Ore Terminal at approximately -5 m MSL (Permit Reference Number 2012/003/WC/TRANSNET). Previously mentioned permit prescribes certain monitoring that has to be performed to determine the impact the RO plant has on the environment.

3.2. TPT Multi-Purpose terminal has been issued with a CWDP (2019/003/WC/Port of Saldanha) to Upgrade the stormwater management system at the Port of Saldanha with the view to prevent uncontrolled discharge into the marine environment. The stormwater master plan identified that the overflow from loading activities of metal

oxides including zinc, lead and copper flows uncontrolled into the sea. To mitigate the contaminated discharge, an *Eco-storm plus 1000* filter system is installed heavy metals. The stormwater and runoff will flow into stilling basins and then through the Eco-storm plus 1000 filter system for the removal of heavy metals before it is discharged into the coastal waters via six (6) stormwater outlets. Although this project for the protraction of the contaminated discharge is not yet commissioned it is planned to be commissioned in this period and hence the requirement for the monitoring is included in this tender.

3.3. Transnet Port Terminals (TPT) Saldanha Terminals thus requires a service provider that will perform laboratory tests and analysis of the RO plant brine water and sedimentation, as well at the six effluent discharge points at the Multi-purpose terminal. These tests and analysis are required in order to ascertain whether the RO plants activities impact on the surrounding environment and to ensure compliance with coastal waters discharge permit (CWDP).

4. SCOPE OF REQUIREMENTS

4.1. The service provider will be responsible to conduct the following monitoring and compilation of the reports in line with the requirements as set out in the scope of work and the Legal requirement for a period of 36 Months since award of the contract.

4.2. SCOPE REQUIREMENTS APPLICABLE TO THE BTS CWDP (2012/003/WC/TRANSNET)

4.2.1. Effluent quality monitoring at BTS

- 4.2.1.1. Measurement of pH, temperature, salinity, dissolved oxygen concentration and saturation as well as saturation, in the brine basin of the RO Plant at weekly intervals.
- 4.2.1.2. Collection and analysis of a composite brine samples for analysis of trace metals (Cr, Ni, Fe, Mn), and Total Suspended Solids (TSS), salinity, pH and toxicity (using a test such as the sea urchin fertilisation test) at monthly intervals in the brine basin and effluent drain leading to municipal drainage system.

4.2.2. Environmental monitoring at BTS

- 4.2.2.1. Continuous monitoring of temperature, salinity, pH, dissolved oxygen concentration and saturation to be conducted at two points either side of the iron ore terminal 50 m from the discharge point, in the direction

corresponding with the mostly like path taken the effluent as indicated by available bathymetry data (Figure 3) and at an appropriate control station (e.g. North Buoy in Small Bay).

- 4.2.2.2. Collection of water samples from the middle and bottom of the water column at three stations situated 50 m from each point of discharge and analysis for salinity, pH, total suspended solids, metals (Fe, As, Cd, Cu, Cr, Hg, Mn, Ni, Pb, Zn), and toxicity (using a test such as the sea urchin fertilisation test) every 3 months. (Figure 3)
- 4.2.2.3. Collection and analysis of sediment from 20 sampling stations for grain size composition, total organic content, and the concentrations of 13 metals (*Al, Fe, As, Cd, Co, Cu, Cr, Mn, Hg, Ni, Pb, V, Zn*) on an annual basis using the same methods obtainable in South African National Accreditation System, in terms of the Standards Act, 1982 (Act No. 30 of 1982), unless another comparable method has been approved of, in writing, by the (DFFE) Department of Forestry, Fisheries and the Environment. (Figure 2)
- 4.2.2.4. Collection and analysis of benthic macro fauna samples from 6 sampling stations adjacent to each point of discharge on an annual basis. (Figure 2)

4.2.3. Reporting for BTS

- 4.2.3.1. Prepare reports for TPT to be submitted on a monthly basis. It is important to note that only the reports must be submitted on a monthly basis the monitoring must still be done in accordance with scope of requirements as stated previously.
- 4.2.3.2. The date, time and monitoring point, name of person who took the sample, in respect of each sample taken must be recorded together with results should be indicated on the report. The laboratory results should be included in the report as an annexure as well as the actual outcome of the sample indicating whether it is in spec or exceeds the specified threshold as set out in the CWDP.
- 4.2.3.3. It is important to note that the reports should be submitted separately, one report for the BTS CWDP and a second report for the MPT CWDP.
- 4.2.3.4. Prepare presentations summarising results from the monitoring programme for delivery at the Public Advisory Forum (PAF) – in line with the CWDP Requirements, on a quarterly basis.

4.2.4. General for BTS

- 4.2.4.1. Service provider to retrieve 2 x CTD/Sonde from the ocean and conduct maintenance check *quarterly* on device and calibrate device bi-annually to ensure devices are in good working order. CTD/Sonde refers to

- Conductivity, Temperature, and Depth, and refers to a package of electronic instruments that measure these properties.
- 4.2.4.2. Service Provider to use CTD Sonde to conduct monitoring as stated above. Any Maintenance done quarterly and Calibration done bi-annually of Sonde to be conducted by Service Provider, as required by the Manufacturer specifications for the duration of the contract. The calibration certificate is to be supplied as an annexure to the report when these calibrations renewed.
 - 4.2.4.3. Service Provider to appoint a suitably qualified auditor to Audit compliance to the CWDP; Compliance to the monitoring and reporting requirements of the CWDP as well as compliance to section 3.3.3 of the Coastal Water Discharge Permit, annually and submit a written report to TPT.
 - 4.2.4.4. Service Provider to ensure all vessels and crew (divers) used should be suitably qualified and that proper arrangements should be made with the Port Authorities for vessel use and port access. It is important to note that service provider would be responsible to appoint divers and vessel crew to conduct ocean monitoring in line with the TIMS SHEQ Contractor Specification Guidelines.
 - 4.2.4.5. All data analysis must be carried out in accordance with methods prescribed by and obtainable from the South African National Accreditation System in terms of the Standards Act , 1982 (Act No.30 of 1982) , unless another comparable method has been approved of , in writing , by the (DFFE) Department of Forestry, Fisheries and the Environment
 - 4.2.4.6. The various sample results must be compared to the specifications as set out in TPT Saldanha Coastal Waters Discharge Permit (CWDP) and DWAF (Department of Water Affairs and Forestry) (1995) South Africa Water Quality Guidelines for Coastal Marine Waters. Volume 2 : Recreational Use.

4.3.SCOPE REQUIREMENTS IN LINE WITH THE MPT CWDP (2019/003/WC/Port of Saldanha)

4.3.1. Effluent quality monitoring at MPT

- 4.3.1.1. Measurements of pH, Cadmium, Chemical Oxygen Demand, Chromium, Copper, Iron, Lead, Suspended Solids and Zinc at quarterly intervals by utilizing a water quality measuring probe at six points as indicated in Figure 4

4.3.2. Environmental monitoring at MPT

- 4.3.2.1. Quarterly monitoring of pH, Cadmium, Chemical Oxygen Demand, Chromium, Copper, Iron, Lead, Suspended Solids and Zinc to be conducted at six points as indicated in Figure 4 using grab samples prior to discharging into the marine environment.

4.3.3. Reporting for MPT

- 4.3.3.1. Prepare reports for TPT to be submitted on a Quarterly basis. It is important to note that only the reports must be submitted on a quarterly basis the monitoring must still be done in accordance with scope of requirements as stated previously.
- 4.3.3.2. The date , time and monitoring point , name of person who took the sample , in respect of each sample taken must be recorded together with results should be indicated on the report.
- 4.3.3.3. It is important to note that the reports should be submitted separately, one report for the BTS CWDP and a second report for the MPT CWDP.
- 4.3.3.4. Deliver a detailed quarterly presentation listing the following:
 - 4.3.3.4.1. The extract volume discharge, showing daily, weekly and monthly discharge volumes;
 - 4.3.3.4.2. Incidents that have occurred during emergency, malfunction or upset conditions;
 - 4.3.3.4.3. The result/ findings or the monitoring requirements in terms of the permit and where further monitoring is required.
- 4.3.3.5. Deliver a detailed annual presentation listing the following:
 - 4.3.3.5.1. A report on the monitoring of trends and incidents as well as the result of the marine impact assessment, as soon as it becomes available, but no later than two months after being surveyed.

4.3.4. General for MPT

- 4.3.4.1. Service Provider to appoint a suitably qualified auditor to Audit compliance to the CWDP; Compliance to the monitoring and reporting requirements of the CWDP as well as compliance to section 3.3.3 of the Coastal Water Discharge Permit, annually and submit a written report to TPT.
- 4.3.4.2. All data analysis must be carried out in accordance with methods prescribed by and obtainable from the South African National Accreditation System, In term of the Standards Act, 1982 (Act No.30 of 1982), unless another comparable method has been approved of, in writing, by the Department
- 4.3.4.3. The various sample results must be compared to the specifications as set out in TPT Saldanha Coastal Waters Discharge Permit (CWDP) and DWAF (Department of Water Affairs and Forestry) (1995) South Africa Water Quality Guidelines for Coastal Marine Waters. Volume 2: Recreational Use.

5. QUALITY AND SERVICE

5.1. Human Capital

- 5.1.1. The Service Provider shall deploy suitably qualified environmental practitioners to undertake the scope of the services and who do not have less than 3 years' experience within sector.
- 5.1.2. A detailed track record of consultants (showing experience in work of a similar nature) who will be deployed to work on the Project for TPT will need to be provided, which track record will be checked and verified by TPT.
- 5.1.3. The service provider shall be entitled to solicit the services of an expert to assist it in delivering the Scope of Services to TPT where required subject to the consent of TPT.
- 5.1.4. The service provider shall ensure that human resources deployed on the project not have criminal records, be of sober habits, and are medically fit with a sound references of previous experiences in the field.
- 5.1.5. The Service Provider shall be fully responsible to Transnet Port Terminals (TPT) for the acts and omissions of its employees, permitted sub-contractors and agents. Furthermore, the service provider shall be solely liable for any damage caused to Transnet Port Terminals (TPT) property or injury caused to Transnet Port Terminals (TPT) Employees due to the negligence of its employees, permitted sub-contractors and agents while at or on TPT sites

5.2. Communication

- 5.2.1. The Service Provider(s) will be required to inform Transnet Port Terminals (TPT) in writing of all the challenges they are faced with Transnet Port Terminals (TPT) staff during the execution of the services.
- 5.2.2. The service provider(s) will further be required to attend a monthly Service Level Agreement (SLA) meeting whereby all issues for the previous month will be addressed to ensure that a resolution is obtained.
- 5.2.3. The drivers must at all times have a means of communication with Environmental Department (e.g. cell phone).
- 5.2.4. The service provider should provide TPT with a business continuity plan post award.

6. GENERAL SAFETY AND COMPLIANCE SPECIFICATIONS

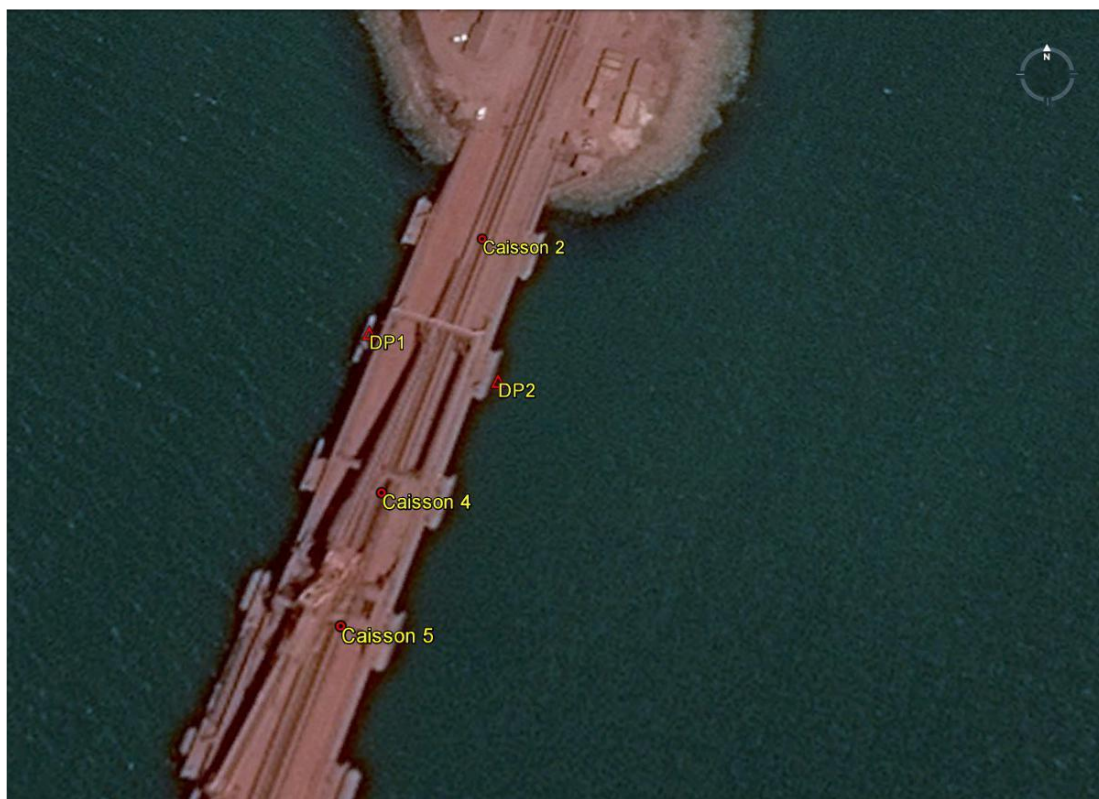
- 6.1 Contractor must submit **TRN-IMS-GRP-TMP 014.3 Employee Personal Profile Dossier** to contractor Manager for approval before induction training confirmed. Approved Employee Profile Dossiers includes certified copies of medicals, identity documents, competencies etc. submitted via email correspondence to **TPTSLD-Induction-booking@transnet.net**.
- 6.2 Contractor Compliance SHE File within accordance with File Contractor Compliance File **Approval Checklist TRN-IMS-GRP-TMP-014.2** and in line with relevant applicable specifications as per respective **TRN-IMS-GRP-GDL 014.2 Contractor Specification Guidelines**.
- 6.3 Principle contractor approve **Mandatory Agreement** in terms of **section 37(2) TRN-IMS-GRP-TMP-014.1** of the Occupational Health and Safety Act (OHS Act) and submit to Contractor Manager to agree.
- 6.4 The Principle Contractor must **submit written request** to the Contractor Manager for permission for sub-contract to provide any work or services to TPT and ensure that all **37.2 Agreement between Principle contractor and Sub Contractor** submitted to Contractor Manager.
- 6.5 Contractor must **submit** completed **SHE File** to Contractor Manager for approval.
- 6.6 Service provider shall implement and maintain applicable Health, Safety, Quality and Environmental regulations and other relevant standards and regulation, example: applicable SANS codes; OHS Act of 1993 , other legislation, ISO 9001, ISO 14001 and ISO 45001, etc.
- 6.7 Service provider to ensure that all employees involved in activity is informed of the Hazards and risk they exposed to and all other relevant applicable Safety Work Procedures, Environmental Plans, Emergency Plans and any other relevant procedures, etc. proof to be submitted as part of the SHE File.
- 6.8 Service Provider will ensure that On the Job HIRAS is completed prior to start of activity to ensure that any additional Risks been identified.
- 6.9 Service provider must ensure that when required to off-load or load any heavy equipment and machinery on the plant that they comply with that equipment or

machinery will not be physically operated by an employee when required to off-loaded or load from any flatbed or low bed.

6.10 Principle Contractor will be responsible to ensure that Sub Contractor SHE File compiled within conjunction with TPT Requirements and Approved prior to submission to Contractor Manager.

7. ANNEXURE

7.1. Annexure 1 (Positions where in situ measurements of water quality will be made from the side of the Iron Ore Terminal)



8.2 Annexure 2 (positions for the collection of sediment and benthic macrofauna)



8.2 Annexure 3 (positions for water quality monitoring stations in the Saldanha Bay receiving environment)



8.3 TPT-IMS-SLDT-CL-014-001.1 Contractor COVID 19 SHE File Assessment Checklist

8.4 TPT-IMS-SLDT-GDL-014-001.2 Guide -Contractor COVID 19 Work Plan

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