

	<p style="text-align: center;"><b>Scope of work</b></p>	<p style="text-align: center;"><b>Majuba Power Station</b></p>
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**Title: Scope of Work for the Supply and delivery of microbiology equipment's at Majuba Power Station**

**Document Identifier: 5 5 9 - 2 9 1 2 2 9 5 4 8**

Alternative Reference Number: **N/A**

Area of Applicability: **Majuba Power Station**

Functional Area: **Chemical Services**

Revision: **1**

Total Pages: **10**

Next Review Date: **N/A**

Disclosure Classification: **Controlled Disclosure**

<b>Compiled by</b>	<b>Supported by</b>	<b>Authorized by</b>
		
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<p>Date: 03/02/2026</p>	<p>Date: 03/02/2026</p>	<p>Date: 03/02/2026</p>

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## **1. Introduction**

This document describes the scope of work for the supply and delivery of the microbiology equipments including technical specifications

## **2. Supporting Clauses**

### **2.1 Scope**

This document provides details on the scope of work for the supply and delivery of microbiology equipments to Majuba Power Station

#### **2.1.1 Purpose**

The purpose is to describe all requirements and specifications for the supply and delivery of microbiology equipments at Majuba Power Station

#### **2.1.2 Applicability**

This document is applicable to Majuba Power Station only.

#### **2.1.3 Effective date**

Effective date will be from the authorisation date.

### **2.2 Normative/Informative References**

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

#### **2.2.1 Normative**

- [1] ISO 17025 standard
- [2] ISO 9001 Quality Management
- [3] ISO 14001 Environmental Management

#### **2.2.2 Informative**

- [1] ISO 22971 Accuracy and precision of measurement methods and results

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### 2.3 Definitions

N/A

### 2.4 Abbreviations

Abbreviation	Explanation
SANS	South African National Standard
ISO	International organization for standardization

### 2.5 Roles and Responsibilities

#### Majuba Chemical Services

- a) Compiles the scope of work.
- b) Coordinates execution of the scope on site
- c) Reviews technical submission provided by the contractor.
- d) Contracts Manager for the supply and delivery of the scope of work as stipulated.

### 2.6 Process for Monitoring

- a) Scope of work technical evaluation criteria
- b) Quality control check upon delivery
- c) Technical data sheet with all the required equipment specifications

### 2.7 Related/Supporting Documents

N/A

## 3. Scope of Work for the Supply and delivery of microbiology equipments at Majuba Power Station

- a) The supply and delivery of Microbiology Laboratory equipments to Majuba Power Station as stipulated in **Table 1** below.
- b) Only goods delivered according to the prescribed specifications will be accepted.

Material	Description	Specification
1. Automatic colony counter:	Automatic colony counter is a high-throughput digital imaging system used in microbiology to	1. Scan 1200 Automatic colony counter with minimum size detected colony 0.05mm

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<p>One (1x) Automatic colony counter</p>	<p>rapidly and accurately count bacterial or fungal colonies on agar plates in under a second. utilize high-resolution cameras to eliminate human error, offering Type text here</p>	<ol style="list-style-type: none"> <li>2. Camera 1.2 mega pixels -zoom x 28, Counting on 55-90mm round petri dishes, counting on pour plate, surface, spiral,</li> <li>3. Counting on chromogenic agar,petrifilm MC-media pads TM, Compact dry TM, filtration membranes.</li> <li>4. Delivered with 1x Scan soft ware with <b>NO SOFTWARE RENEWALS</b></li> <li>5. <b>1X USB CABLE, 3 VALIDATION PLATES, USER MANUAL, CONFORMITY CERTIFICATE OR WARRANTY CARD</b></li> <li>6. <b>INCLUDE DELIVERY AND INSTALLATION</b></li> </ol>
<p>2. Ultra-pure water purification system One (1x) Ultra pure water purification system for Microbiology Laboratory</p>	<p>Ultrapure water purification system that is suitable to purify tap (potable) water contains only H2O and chlorine, with a resistivity of 18.2 MΩ.cm, TOC &lt; 10 ppb and bacterial count &lt;10 CFU/ml. Suitable for use in Microbiology Laboratory</p>	<ol style="list-style-type: none"> <li>1. With a Flow rate 15L/h @ 7-35 °C, Resistivity &gt;5MΩ.cm at 25°C Typically 5-15MΩ.cm, with TOC &lt;30ppb,</li> <li>2. Bacteria levels &lt;10 cfu/ml, feed water pressure0.5-6 bar,100 L reservoir tank, Automatic self-maintenance</li> <li>3. Suitable with tap water (feed water), Automated sanitation module, with regular exposure to bacterial 254 nm UV Lamp</li> <li>4. Include delivery and installation accessories, and labour</li> <li>5. <b>INCLUDE DELIVERY AND INSTALLATION</b></li> </ol>
<p>3. Double Door sample Fridge Two (2x) Double door Laboratory sample Fridge</p>	<p>A laboratory sample refrigerator is a specialized, high-performance cooling unit designed for the secure storage of temperature-sensitive microbiological samples, reagents, and chemicals. Operating typically between 0°C and 8°C</p>	<ol style="list-style-type: none"> <li>1. TYPE: FRIDGE/FREEZER; CAPACITY: 964 L; POTENTIAL: 220 V; CURRENT: 15 A; POWER: 230 W; LABORATORY DOUBLE DOOR FRIDGE WITH CONTROLLER INST / COMM – W/, Magnetic door gasket, adjustable shelves plastic coated, Double tempered glass, Automatic defrost, Alarm, manual thermostat preset 3.5 degrees Celsius, soft closing doors. Iso 9001 and 14001 certified</li> </ol>

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		2. INCLUDING DELIVERY AND INSTALLATION
4. Membrane filtration Assembly six places	A membrane filter assembly is a laboratory device used to separate particles or microorganisms from liquids by creating a vacuum, pulling the sample through a porous filter membrane.	MANIFOLD FILTRATION ASSEMBLY 6 PLACES. Including the membrane filtration 250ml filter cups that are fitting and suitable to be autoclaved @121 degrees Celsius ABLE TO CONNECT SIX FILTER HOLDERS TO ONE VACCUM SOURCE. AUTOCLAVABLE @121 INCLUDING DELIVERY AND INSTALLATION
5. Membrane filtration assembly vacuum pump (1xVaccume pump)	A membrane filter assembly vacuum pump is laboratory device used to accelerate liquid filtration by creating a pressure difference, pulling samples through filter membranes	Membrane Filtration vacuum pump SUITABLE FOR MANIFOLD FILTRATION ASSEMBLY 6 PLACES.  INCLUDE DELIVERY AND INSTALLATION
6. Ph Meter  Two (2x Ph meter analyzers)	Instrument used to measure the hydrogen-ion activity (acidity or alkalinity) of liquids, providing readings on a scale from 0 to 14.	<ol style="list-style-type: none"> <li>1. SUPPLY , DELIVERY AND INSTALLATION OF pH analyzer resilient to corrosive fluid, compliant with ISO 10523, measuring range 0.00 to 14.00 pH</li> <li>2. Transmitter Backlit LCD/LED Display</li> <li>3. Displays Process Values, Operating Status, Sample flow, Temperature Alarms.</li> <li>4. Displays and User manuals in English</li> <li>5. Parameter Programming on Keyboard</li> <li>6. Must include Complete system with Transmitter, Sample Chambers, pH Sensors, Control Equipment, Electric Cabling, Sample Tubing, etc</li> <li>7. Cleaning facility of sample sensor</li> <li>8. Automatic temperature compensation</li> <li>9. Data Logger on Transmitter.</li> <li>10. Signal out put: Two (2) Programmable Signal Outputs 4-20mA Analog</li> <li>11. Two (2) Potential Free Relay Outputs 1A, 240 VAC</li> <li>12. include delivery and installation</li> </ol>

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<p>7. Conductivity meter Portable  Two (2x) Portable conductivity meters</p>	<p>Instrument used to measure the electrical conductivity of a solution, indicating its ion concentration, salinity, and purity</p>	<p>Portable Conductivity meter-30-130 degrees Celsius temperature, Conductivity calibration standards 1413uS/cm and 12.88 uS/cm Waterproof protection, measurement range 0.01us/cm-10000mS/cm <b>INCLUDE DELIVERY AND INSTALLATION</b></p>
<p>8. Trolley /mobile laboratory bench  Six (6x) mobile portable lab benches</p>	<p>Portable lab benches provide flexible, mobile, and space-saving solutions for, research</p>	<ol style="list-style-type: none"> <li>1. Portable or mobile laboratory bench (Portable Laboratory Consumables Storage), 150cm wide and 90cm height dimensions 150 X 75 X 90 CM.</li> <li>2. The trolley or bench must be mobile, must have the sink and with lockable guard wheels.</li> <li>3. The mobile bench must have high resistance to acid solvents &amp; other chemicals, also scratch, dry heat and impact resistance. Each unit must be fully assembled or ready to be used. Data Sheet must be provided.</li> <li>4. <b>INCLUDE DELIVERY AND INSTALLATION</b></li> </ol>

### 3.1 Supply and delivery Requirements

- a) Delivery is expected within 1 to 2 weeks after receipt of Eskom official order.
- b) Supply and delivery of Microbiology Laboratory equipments must be as per specifications provides.
- c) All deliveries are to be made to Majuba Power Station Stores for Quality Control Check
- d) No delivery will be accepted without an official Purchase Order number
- e) Supply to quote Purchase order on invoices
- f) Supplier Delivery Note must indicate partial delivery if partial delivery is made.
- g) Each delivery to be recorded on receiving register and each delivery note must have unique number.

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### **3.2 Work to be done by the Delivery Date**

- a) Contractor to quote the Eskom official purchase order in all delivery notes and invoices.
- b) Goods must be well packaged and safely transported.
- c) Eskom to acknowledge receipt of goods by stamping and signing the delivery note of the supplier upon delivery, rejected items to be communicated after the official quality inspection is done on site by the end- user.
- d) If the product is rejected, goods must be collected and the correct goods supplied within 3 days.
- e) Only goods as specified will be accepted. Any goods which do not meet the specifications will be rejected.

### **3.3 Documentation control**

- a) All goods being delivered to Majuba Main Stores must have the following: : Unique delivery note number per delivery.
- b) Delivery note – must have unique number, date of delivery, items that were delivered (material number, material short description, serial number and quantity delivered)
- c) Delivery note must come in duplicates so that one copy is kept at Main Stores and other goes with the supplier for invoicing purposes and as a proof of delivery.
- d) Both copies of delivery notes to be stamped with receiving stamp of Majuba Power Station and must have the signature of the receiver as well as the receiving personnel full

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### **3.4 Obligation of the contractor**

- a) The contractor shall provide transportation that is road worthy for the delivery of all the goods to Majuba Power Station
- b) The contractor shall provide own driver with valid South African driver's licence for the supply and delivery of all goods as and when it is required.

### **3.5 SUPPLIER QUALITY MANAGEMENT SYSTEM AND REQUIREMENTS**

The supplier should provide the following for all equipment supplied

1. Equipment technical data sheets, operation, maintenance and troubleshooting manuals.
2. Estimated lead-time for the supply and delivery of the equipment to be included in the tender returnable.
3. Supplier to install and commissioning the following equipment's to be supplied:
  - a. **Ultra-pure purification system**
  - b. **Ph Meter**
  - c. **Double door Fridges**
  - d. **Automatic colony counter**
4. Supplier to include Set-up and validation of methods where applicable
5. The Contractor to provide training on the equipment's and systems included as part of the works to the Employer's technical staff
6. Training provided by the Contractor should be directly applicable to the actual equipment supplied for the works. Generalised training based on similar **equipment is not acceptable.**

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#### 4. Acceptance

This document has been seen and accepted by:

Full Name and Surname	Designation
Jeanette Makhanya	Snr Chemist
Sindi Mahlaba	Snr Supervisor Tech

#### 5. Revisions

Date	Rev.	Compiler	Remarks
February 2025	1	Nontobeko Nxumalo	New Issue

#### 6. Development Team

Nontobeko Nxumalo

#### 7. Acknowledgements (if applicable)

N/A

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