
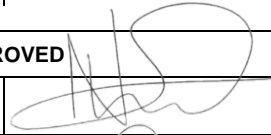

	Metsimaholo and North Dam Pumping System Scope of Work	Doc. no. F/290/007
		Rev. 1
		Total pages 1 of 4
Matimba Power Station		Reference Document: PS/290/003



Designation	Compiled by		Date
LPS System Engineer	Sizwe Buthelezi		2023/09/18
	APPROVED		Date
Auxiliary Engineering Manager	Gift Nkuna		2023/09/18
Engineering Manager	Jacky Mathobela		2024/11/20

1. Introduction

The current irrigation system consists of 5 centrifugal multi-stage pumps taking suction at the irrigation pond and supply water to the whole of ash dump for sprinklers connected to do dust suppression when and where required. The bowser filling system is tapping off from the main supply of the irrigation pipeline. Better understanding of the system can be seen on the following figures 1&2 below with the new proposed pumping system layout.

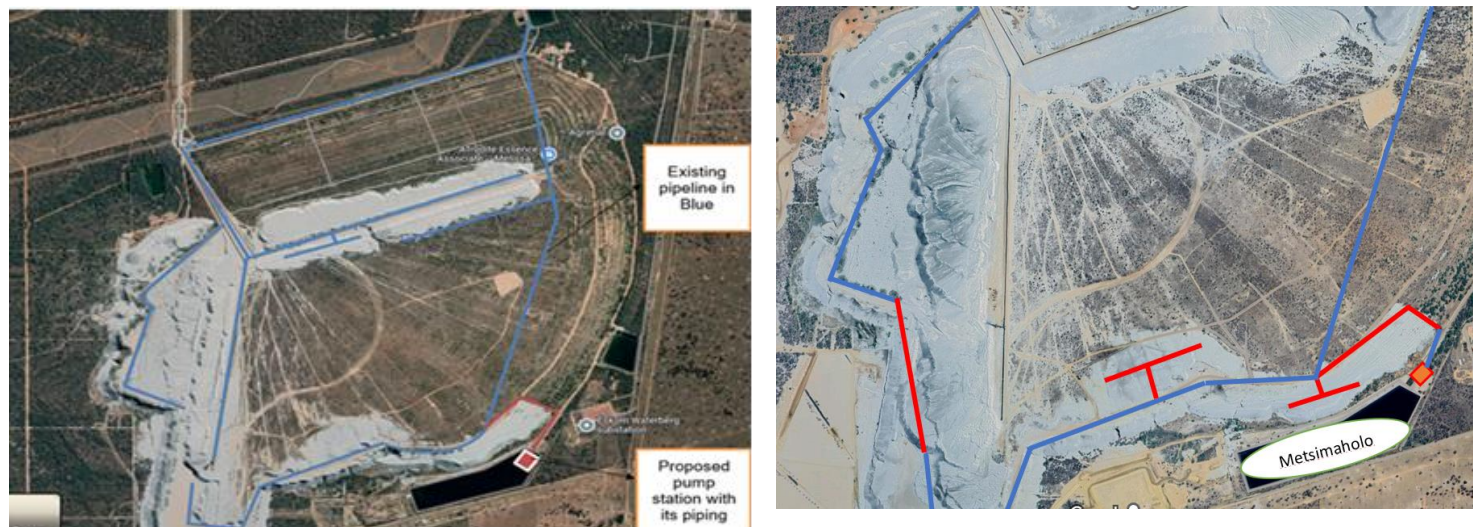


Figure 1: Existing irrigation system with the new proposed Metsimaholo pumping station layout.



Figure 2: Irrigation system with Bowser filling system and the proposed pumping system layout.

2. Purpose

The purpose of this document is to provide the scope of work required Design, Supply, deliver, install, and commission the pumping systems for Metsimaholo and North Dam.

3. Scope of work

The scope of the works is mainly to Design, Supply, deliver, install, and commission the pumping systems for Metsimaholo and North Dam.

3.1. Mechanical Scope

- Prepare a scaled design of the proposed pumping and piping irrigation system which meets the Matimba Ash Dump needs which requires:
 - Minimum head of 90m.
 - Flow Rate of 228 l/s.
- Supply and installation of 250NB Class 16 HDPE dust suppression pipeline .
- Supply and install flow meter at the main discharge line for the pumps for water accounting.
- Supply and install pressure gauges before and after each pump.
- Supply and installation of 25mm Stainless ball valves with handles to isolate the draglines.
- Supply and installation of new vyrsa 86 sprinklers with 4.4 mm nozzle.
- Supply and installation of saddles with 50 mm – 25mm outlet in the interval of 12m.
- Supply and installation of new 30 m dragline in the interval of 12m, Draglines to be fitted with the necessary clamps.
- Supply and installation of 25 mm stainless steel ball valve with handles to isolate the draglines.
- Supply and installation of new Isolation Valves every 300m from the new pump station to the end irrigation line (where the new system is connecting to next to the ash conveyor extendable).
- Supply and installation of new non-return valves at the lowest and highest point of new pump and piping system.
- Test, Commission, Handover plant and the project data books to the client.

3.2. Electrical Scope

3.2.1. Cabling

- Design, supply, route, install, secure, terminate, test and commissioning of PVC SWA cables inclusive of all required cable accessories, racking, from the transformer panel/junction box.
- All cabling shall be in accordance with 240-56227443 – Requirements for Control and Power Cables for Power stations Standard.
- Cable numbering shall be installed on all cables. Cable schedules shall be developed or updated (xls format) to include the new circuit descriptions, cable sizes and lengths, cable numbers etc. as per Electrical Cable Schedule template 240-56176097

3.2.2. Earthing

- The motor and all supporting steel work and structures shall be bonded with the existing earth mat and shall be tested according to 240-56356396 – Earthing and Lightning Protection Standard.

3.2.3. Motors

- All motors shall be in accordance with 240-57617975 - New Low Voltage Motors Procurement Standard and 240-56361435 - Transport of Power Station Electric Motors Standard.

3.2.4. LV distribution panel construction and functional requirements

- The DB shall be in accordance with SANS 1973-3
- The design and manufacturing of control panels shall comply with 240-56227516- LV Switchgear and Control Gear Assemblies and Associated Equipment for Voltage up to and Including 1000V AC and 1500V DC Standard.

4. Additional Requirements:

- The appointed Contractor shall be responsible to supply all PPE required to do the work.
- Prior to beginning the installation, the contractor should verify the site-specific design information, including water pressure and flow.
- The contractor to provide a detail method statement and quality control plan.
- The contractor to submit execution plan and project programme.
- The Contractor shall conduct leak tests on each pipeline section up to the isolation valve or blank flange. This includes leak tests of all sprinklers. Each pipe section must be isolated and pressurized to the pipe design pressure. All welds, flanges and connections must be inspected for leaks. The test pressure must be sustained for 30 minutes and there should be no leaks for a successful test.
- The Contractor shall be responsible for the implementation of the entire SOW.

5. Revision

Date	Revision	Compiler	Remarks
September 2023	1.0	SM Buthelezi	New Document

6. Development Team

The following people were involved in the development of this document:

- Sizwe Buthelezi
- Wandile Mjuqu

7. Acknowledgements

N/A