Annexure C3.2 Scope of Work

CONTRACT NO: RW10404061/23

TENDER FOR THE UPGRADE OF MEYERTON WASTEWATER TREATMENT WORKS BY 15 ML/DAY AT MEYERTON

Annexure C3.2 Scope of Work

Contents

C3.2.1 Employer's Objectives

The aim of the Section 63 intervention is to create bulk sanitation capacity in the Sedibeng region, deliver effective solutions to prevent pollution of water resources and unlock development projects that require sanitation services. The Study Area consists of the entire Emfuleni and Midvaal local municipal areas. It includes the Sebokeng, Vanderbijlpark, Vereeniging and Meyerton sewerage catchments which are serviced by the Sebokeng, Rietspruit, Leeuwkuil and Meyerton wastewater treatment works (WWTW) respectively. The upgrade to Meyerton Wastewater Treatment Works is therefore a key component to providing sanitation services to existing and future planned developments with the Midvaal local municipality.

It is therefore the Employer's objective is to appoint a qualified Civil Contractor for the construction and commissioning of Meyerton Wastewater Treatment Works.

C3.2.2 Overview of Works

The Construction of this upgrade of the works was started in 2014 but was never completed. The outstanding work was measured and this document was compiled to procure a Civil Contractor to complete this work together with a nominated Mechanical Contractor and a nominated Electrical Contractor. The purpose of this contract is to complete the construction of all the Civil Structures and associated works as stipulated in C3.1.3 below. Following this extent of works, the Mechanical and Electrical (M&E) Contractors will Supply, Install and Commission the M&E works according to the joint multidisciplinary programme that will be agreed upon by all four parties (Employer, Civil contractor, Nominated Mechanical contractor and Nominated Electrical Contractor).

This contract thus includes but is not limited to all the outstanding Civil Works for the upgrade of the Meyerton WwTW by 15ML/d:

1) Cleaning up the whole Wastewater Treatment Works site.
2) Completing the following water retaining Structures:
    i. Head of Works (HOW)
    ii. Raw sewage water Pump Station
    iii. Biological Nutrient Reactor (BNR)
    iv. Secondary Settling Tank (SST)
    v. Irrigation Pump Station
    vi. WAS Pump Station
    vii. Alterations to the existing RAS pump station
    viii. Final outflow channel to the Chlorine Contact Tank

ix. Chlorine Contact Channels refurbishment

3) The following Pipelines:
   i. Medium Pressure pipelines
   ii. Irrigation Rising main
   iii. Water Reticulation
   iv. Sewer reticulation
   v. Subsurface drains
   vi. Irrigation overflow
4) Completion of the following buildings:
   i. MCC at the HOW
   ii. Guard House
   iii. Administration Building
   iv. Workshop
   v. Blower building
   vi. WAS building
   vii. FeCl Dosing Building
5) Road Works

C3.2.3 Extent of the Works

1. The extent of the Civil and Building works includes the following;

a) Complete bulk earthworks around structures, mainly comprising of backfilling against existing structures.
b) Supply, lay, bed and commissioning of pipelines, which includes the following:
   - The completion of a 1m diameter HDPE pipeline from the Head of Works to the Raw Water Pump Station.
   - The completion of a 600mm diameter pipeline from the Raw Water pump station to the Biological reactor.
   - The construction of 500mm diameter pipeline from the Existing Sludge Return Pump Station to the Biological reactor.
   - The construction of 1200mm diameter pipeline from the Biological Reactor to the existing Splitter.
   - The completion of sewer reticulation for all buildings including the construction of a septic tank.
   - The completion of sub-surface drains from the Biological Reactor and Secondary Sedimentation Tank.
   - The construction of over flow pipe for the Irrigation pump station.
   - Construction of pipework from the Biological Reactor to the Sludge drying beds.
   - The construction of a return pipeline from the Irrigation pump station to the Biological reactor unit.
   - Completion of water reticulation on site.
c) Complete the new Inlet works (Head of Works), including pipework to inlet works, unfinished walls, water tightness testing, backfilling and repair work to existing concrete structure.

d) Complete the Raw Water pump station, including the completion of brick walls, plastering, ring beams, roof structure, backfilling and grouting in of pipes, and repair to existing work.
e) Construction of irrigation pump station at Sludge Dry Beds.
f) Construction of WAS pump station at Biological Reactor.
g) An addition to the existing RAS Pump Station adding telescopic valve pipe work to control the RAS draw off from the SST's
h) Complete the Biological Reactor unit which includes backfilling, completing the construction work to outlet structure, completion of joints, water tightness testing, and repair work to existing concrete structure.
i) Complete the Construction of the Secondary Sedimentation tank which include floor slabs, walls, pipework, water tightness testing, sub-soil drainage etc.
j) Complete the Sludge Drying beds which include the installation of manholes and gravity sewer discharging into the Irrigation pump station, backfilling, and access ramps.
k) Complete roadworks which includes the construction of the bellmouth and entrance section (about 30m), a section at chainage zero also about (30m), sidewalks, signage, complete the parking area at Admin building and various paving areas (Admin Building, Guard House, Workshop Building, MCC Building and Blower Building.
l) Complete all building works, including finishings, ceilings (may need replacement e.g. workshop), sanitary ware, water and sewer connections, complete tiling, complete and / or repair roof sheeting.
m) Supply and install sundry steel items
n) Relocation of existing services where applicable
o) Demolition and disposal of disused structures
p) Interfacing and co-ordination with Mechanical and Electrical nominated Sub-Contractors
q) Testing and commissioning of the constructed works
r) 12 months defects liability period for the existing and constructed works

2. The extent of the Mechanical and Electrical Works includes the following:

a) Completion of the Mechanical Works and any rework/repairs to the previously installed Mechanical Works pertaining to the Works described in C3.2.2 by the Mechanical Nominated Sub-Contractor.
b) Completion of the Electrical Works and any rework/repairs to the previously installed Electrical Works pertaining to the Works described in C3.2.2 by the Electrical Nominated Sub-Contractor.

C3.2.4 Location of the Works and Description of Site and Access

The works location is at the existing Meyerton Wastewater Treatment Works (WwTW) located at Latitude 26°34'57.00"S and Longitude 27°58'11.00"E.

Access to the site will be from the tarred Meyerton – De Deur Provincial road followed by a ± 6 km gravel / dirt road from the position of the Meyerton reservoirs to the Meyerton Water Care Works.

For navigation purposes, search Midvaal Wastewater Treatment Works on Google Maps.

C3.2.5 Temporary Works

The temporary works required for the construction of the scope of works include but are not limited to:

1) Accommodation of traffic
2) Ensure that the daily operations at the Meyerton WwTW are not impeded in any way
3) Protection of existing structures and services
4) Clearing of site of all weeds, builders rubble etc.

C3.2.6 Sequence of the Works

The Contractors program shall include the following tasks to be executed immediately upon establishment of the site:

1) The entire site must be cleared, including outside and inside of all structures and buildings, of amongst others, all weeds, builders rubble, dewatering of structures and grass cutting upon establishment on site by the Contractor
2) Backfill at specified completed or partially completed structures are to be removed to allow visual inspections and/or any testing of walls
3) Open excavations surrounding specified completed or partially completed structures is to be shored or battered to ensure the stability of the earthworks and safety during visual inspections and/or testing
4) Access and safety equipment required to gain access to structures for initial inspections and testing by the Structural Engineers / Specialists must be erected, including all scaffolding, platforms, safety gear and certification and any other equipment and/or permits required to safely access all areas, in accordance with the relevant Health and Safety specifications
5) Tests and specialist investigations, identified by the Contractor and based on engineering best practices, must be undertaken in order for the Contractor to assess the condition of the completed or partially completed structures comprising the Works and to propose corrective and/or remedial works required for the structures or buildings to meet the design specifications. The Contractor will submit detailed method statements to the Engineer for all proposed tests and specialist investigations to be conducted.