

Brief Scope of Work

Tender: T/2453346/2022

Operation and Maintenance of Al Amerat Sewage Treatment Plant

INTRODUCTION:

Oman Water and Wastewater Services Company Operations & Maintenance Division for Wastewater has requirements of appointing a contractor who has sufficient experience for Operation and Maintenance of Al Amerat Sewage Treatment Plant, The Contractor shall operate the Works in such a way that the guaranteed performance values are achieved and maintained at all times.

The services shall cover the following Assets:

1. Al Amerat Sewage Pumping Station N°1 (APS1).
2. Al Amerat Sewage Pumping Station N°2 (APS2).
3. Al Amerat Sewage Treatment Plant (STP)
4. Networks:
 - Sewage Rising mains from APS1 to APS2.
 - Sewage Rising mains from APS2 to STP.
 - Optic fiber networks between APS1, APS2, STP sites.
 - Pipelines and outfall work for the excess of Treated Effluent.
 - Overflow pipelines and works for the excess of sewage influent.

SCOPE OF WORK OF TRANSPORTATION:

Key Performance indicators have been captured under Appendix-E, which should be followed by the contractor and Oman Water and Wastewater Services Company to verify the output. Oman Water and Wastewater Services Company's Central Lab shall be utilized to conduct the laboratory analysis to verify the contractor performance.

TREATMENT PROCESS MONITORING – SAMPLING AND ANALYSIS

The contractor shall conduct the MBR performance analysis, Ultrafiltration System Operational analysis and Washers & Compactors Standards analysis in accordance to the Appendix E. This is required for reporting purpose only.

The Contractor shall conduct routine daily measurements of pH and temperature in the combined influent wastewater to the pre-aeration basins inlet channel (ahead of chemical addition), the influent wastewater to the biological treatment process, and the effluent from biological treatment (after membrane filtration).

All sample collection, sample preservation, and analytical testing shall be conducted in accordance with Standard Methods for the Examination of Water and Wastewater (23rd Edition) or another internationally recognized authority to be approved by Oman Water and Wastewater Services Company.

The below sampling plan shall be followed, and Oman Water and Wastewater Services Company laboratory shall be mainly responsible to collect and conduct the required analysis.

The contractor should follow the below sampling plan. The contractor shall be mainly responsible to collect the sludge samples. The required samples from SP1 & SP4 will be fully taken by Oman Water and Wastewater Services Company laboratory but we might request the contractor take the samples from SP1 and SP4 from the allocated and agreed sampling points according to standard sampling method and keep them ready for Oman Water and Wastewater Services Company lab representative to collect.

Process	Sampling Point ID	Sampling Frequency	Parameters
Treated Effluent	SP4	2x per week Composite	Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Total Phosphorus, Ammoniacal (NH3-N), NO3-N, NO2-N, Total Kjeldahl Nitrogen (TKN), Biochemical Oxygen Demand (BOD5), pH, TN
		2x per week Grab sample	Fecal coliform, Chlorine, Oil & Grease (FOG)
		1 x per week Grab Sample	Viable Helminths Ova (VHO)
Sludge Solid	SL4	2x per week Grab sample	% sludge solids concentrate
Inlet	SP1	2x per week Composite / Grab	Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Total Phosphorus, Ammoniacal (NH3-N), Total Kjeldahl Nitrogen (TKN), Biochemical Oxygen Demand (BOD5), Oil & Grease (FOG), pH

Discharge to Wadi	SP4	1x per week Grab sample	Biological Oxygen Demand (BOD5), Residual Chlorine, Nitrate (NO3), Ammoniacal Nitrogen (NH3-N), pH, Total Phosphorus (TP), Total Suspended Solids (TSS), Fecal coliform, Viable Helminths Ova (VHO)
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All required parameters in Appendix-E shall be verified by Oman Water and Wastewater Services Company laboratory and the penalties, if any, shall be applied.

If the contractor would like to carry out additional samples for official reporting, it should be from an approved/certified laboratory in Ministry of Commerce and Industry.

The Contractor shall supply copies of all sampling and analytical testing results to the company monthly, to be included in the monthly operations reports. A record of all results from sampling and laboratory analytical testing, field testing, and online analytical measurements shall also be maintained by the Contractor on a computer-based system to enable trending analysis.

In carrying out the Operations the Contractor shall:

- A. Inspect and maintain all buildings, grounds, landscaped areas and structures, including but not limited to tanks, basins, reservoirs, roads, footpaths, fences, walls, gates, pipelines, cable ducts, drains, manholes and chambers.
- B. Inspect and maintain all electrical, mechanical and instrumentation equipment and ICA systems, all in accordance with the manufacturer's requirements.
- C. Be responsible for all repairs and overhauls of all specialist equipment during O&M Period, all in accordance with the manufacturers' requirements and advice.
- D. The contractor shall perform all the predictive, preventive and corrective maintenance activities in accordance with the requirements of the international standard management of assets ISO 55000:2014