

**TERMS OF REFERENCE
INSTITUTIONAL CONTRACT**

Section:	WASH Section	Date:	9 th December 2021
Title:	Operator management	Duty station:	Beirut, Lebanon
Reporting to:	WASH	Contract type:	
Duration:	365 working days (indicative)	Starting date:	February 2022

Section	Content
Background	<p>UNICEF WASH Program has scaled up its response to the Syria crisis and provides support and services to both refugees and host Lebanese communities and the Ministry of Energy and Water and its regional Water Establishments bearing the most significant burden resulting from the impact of the Syrian Crisis on the water and sanitation sector in Lebanon.</p> <p>UNICEF WaSH section, The MoEW and the BWE have identified the need to support IAAT WWTP by reducing the volume of sludge reaching the WWTP and currently disturbing the conventional treatment processes of this large plant.</p> <p>UNICEF WASH section has selected to install an Omniprocessor proposed by Tidetechnocrats to be tested to demonstrate the possible treatment of the wastewater and septic sludges coming from the ISs into bio-safe solids.</p>
Objective	To operate the omni-processor treatment process and manage planned co-composting creation and bagging.
Purpose	A Lebanese company will be in charge of the plant's operation for a year after commissioning.
Methodology	<p>UNICEF is looking for the support of a Lebanese company to take responsibility for the Operation of the Omni-processor. The company will ensure the recruitment of local agents responsible for operating and managing the Omniprocessor. The agent in charge of the operation should, in priority, come from the laa community.</p> <p>The recruited local agent will receive training from Tidetechnocrats, the company that constructed the Omniprocessor.</p> <p>The Operators will be responsible for receiving the desludging trucks and ensuring the plant is not accepting a larger quantity of sludge than the design allows and only receiving sludge from the Informal Settlements.</p> <p>The treatment system is composed of 3 different phases:</p> <ul style="list-style-type: none"> - The liquid/solid separation - The liquid phase treatment - The solid phase disinfection <p>1- Acceptance of trucks</p> <p>The operators will be responsible for accepting desludging trucks until reaching the maximum treatment capacity of the system designed up to 15m³/d. In addition, the operator will be accountable for filling the daily quantity of sludge received from each truck, the plate number, and the driver name and signature.</p> <p>The operators will be liable to ensure the cleaning of the receptage station and that the grids are clean.</p> <p>2. Liquid/Solid separation</p>

The operator will be responsible for overseeing the process of liquid-solid separation, ensuring the proper functioning of the volute press and polymer dosing unit. In addition, the operator will prepare the polymer and provide a jar test for every batch of sludge.

The operator will :

- Inspect after giving power supply to the screw press,
- Inspect the rotational direction of the motor,
- Set the sludge input quantity for the sludge delivery pump,
- Set the polymer flocculant quantity for the sludge delivery,
- Set the rotary speed of the screw shaft,
- Set the rotary speed of mixer/blender of the flocculating and mixing trough

In addition, the operator will be trained on adjusting the water content in the dewatered sludge cake, the formal operation of the dewatering screw press, varying sludge density of screw press and other instructions for the long term non-operation of the screw press or other recovering methods to signal error.

3. Liquid phase treatment

The treatment of the liquid phase after the liquid-solid separation phase is done in 3 steps :

- MBBR
- Pressured sand filter (PSF) and Activated Carbon Filter (ACF)
- UV system before discharge

MBBR

The operator will ensure the aeration in the two different tanks is constant and up to the needed flow.

The operator will proceed to Site Sampling Procedure for Visual Examination and ensure testing and keep the records and report.

PSF – ACF

Those 2 filters are designed to remove turbidity and suspended particles present in the feed water with minimum pressure drop. The operator must ensure the PSF and ACF systems are switched on everytime there is outflow from the MBBR. The operator has to ensure there is sufficient water in the pre tertiary treatment tank for pumping. Both the filter should be cleaned every 10hr operation or at the end of daily operations.

UV system:

The UV system is designed to treat water at specified flow rates as outlined in the specification sheet. The system has two main components: the ultraviolet reactor chamber and the main control panel. The operator will switch on the UV system while running the tertiary treatment process. The operator will clean the tubes once a month(Follow the procedure given in the O&M manual).

4. Solids disinfection and treatment

The solid part of the fraction is taken to the Hoper. The operator will ensure the feeding of the solid fraction from the Hoper to the conveyor belt to ensure feeding of the disinfection unit.

5. Maintenance of the FSTP

The operator will be in charge of the maintenance activities of the different equipment to ensure the longevity of the installation.

	Daily	Weekly	Monthly	Quarterly	Half yearly	Annual
SRS						
Cleaning of screens	✓					
Repainting of screens				✓		
Replacement of rake for trash removal.				✓		
Holding tank						
Desludging of holding tank.						✓
Remarking of dipstick.				✓		
Volute Press						
Check the gap and tightness of end plate.	✓					
Gear box lubrication						✓
Bearing Lubrication				✓		
Cleaning	✓					
Polymer dosing system						
Dosing tank cleaning.		✓				
Dosing pump inlet cleaning				✓		
Gear box lubrication.				✓		
Polymer hose cleaning				✓		
Polymer hose replacement.						✓
Waste water treatment						
Desludging of the inlet chamber						✓
ACF & PSF Backwashing	✓					
UV tube cleaning			✓			
SDU						
Bearing greasing			✓			
Gearbox oil topup			✓			
Earth resistance test					✓	
Plumbing						
Check active leaks	✓					
Signs of corrosion			✓			
Checking Valves for Correct Operation	✓					

The operator will ensure a tidy and consistent filling of the different records
All the material like equipment, consumables, equipment spares... has to be recorded in Materials movement record.

Any brake down in mechanical parts, plumbing, and electrical issues must be recorded in equipment break down form along with reason and action taken.

Inventory of consumables such as polymer, gloves, mask etc. needs to be recorded.

Issues identified in any equipment that hampers the operations need to be recorded and steps taken for troubleshooting.

6. HSE compliance

The operator will comply with the code of conduct and ensure he is not taking any action harmful or risky for him, for other personnel on-site and the environment.

7. Co-composting plan

UNICEF is currently seeking additional funds to develop the co-composting market and enable such fertilizer in the country. The operator will be responsible for supporting the different activities resulting from mixing the biosafe solids with compost.

<p>Deliverables and schedule</p>	<p>The operator will provide weekly reports to the Bekaa Water establishment and UNICEF. The operator will be present every weekday and will share regular updates of the different records and data</p>
<p>Qualifications</p>	<p>Technical Evaluation Criteria: <i>Service Providers are encouraged to ensure they meet the below-requested evaluation and qualification criteria</i> Technical evaluation is composed of 70 points The minimum successful score for the technical evaluation is 42 points</p> <ul style="list-style-type: none"> - Demonstrated experience with Omni-processor or Omni-ingestor 10 points (0 if no experience 10 if experience with Omni-processor or Omni-Ingester) - Team experience relevant - 5 points (Availability of necessary staff as per requirement 1point per operator and 3 points for manager) <p>The bidder will provide a detailed document detailing the modus operandi of the different task mentioned in the methodology section.</p> <ul style="list-style-type: none"> - Provision of modus operandi for the reception of the trucks - provision of templates 10 points - Provision of modus operandi for Liquid/Solid separation – 10 points - Provision of modus operandi for Liquid treatment – 10 points - Provision of modus operandi for Solid treatment - 10 points - Understanding septage treatment - 10 points - Provision of the key aspect to ensure HSE on site - 5 points <p>Financial evaluation is composed of 30 points. The maximum score will be assigned to the lowest financial proposal.</p> <p>All other financial proposals receive scores in inverse proportion according to the following formula:</p> <div style="border: 1px solid black; background-color: #e6f2ff; padding: 10px; margin: 10px 0;"> $\text{Score for financial proposal X} = \frac{\text{Maximum score for financial proposal} \times \text{Price of lowest financial proposal}}{\text{Price of financial proposal X}}$ </div>
<p>Timing</p>	<p>The contract should ideally start in February 2022, along with the installation and commissioning of the Omniprocessor.</p>