



## Candor IT Park, India

**Q-SEP Model:** Q-SEP® 8012

**Q-SEP Membranes:** 10 x 3 systems

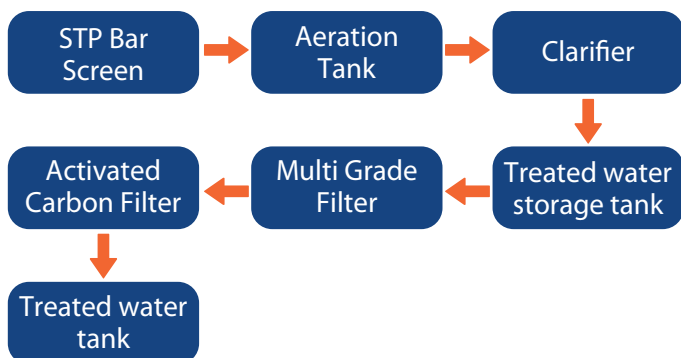
**Permeate Flow:** 35m<sup>3</sup> /hr (154.1 gpm) x 3

**Application:** Sewage Recycle

### Project Background

A global leader in real estate has a commercial business park in Gurgaon, India that required a water treatment system to manage its wastewater.

The business park's existing sewage treatment plant (STP) had been treating the sewage from the entire facility, and the treated water was being used for gardening and floor cleaning. The STP had a conventional biological treatment followed by a tertiary treatment system.



The client had been facing product water quality issues in terms of high turbidity and odor in their STP. Since the STP water was being used for various

purposes around the property, the quality and odor became major issues for the business park's brand and they decided to select ultrafiltration as an additional filtration step to resolve these issues. Having ultrafiltration as a final polisher not only ensures consistent product water turbidity but also odor-free treated water.

Since high turbidity was anticipated due to inconsistent inlet feed water, the business park decided to go in for PVDF-based outside-in UF membranes, and evaluated various manufacturers' membrane options. The evaluation criteria were based on the membrane surface area, the ability to withstand higher feed water turbidity and amount of waste generation. The client finally selected Q-SEP 8012 modules due to the following advantages offered:

1. High membrane area of 80 m<sup>2</sup>, requiring a lower number of membrane modules and footprint, resulting in capex savings for the business park.
2. The ability to withstand feed turbidity up to 100 NTU on a continuous basis.

- Higher product recoveries due to a lower amount of UF filtrate used for maintenance cleaning.

## QUA Solution

QUA supplied 10 Q-SEP® 8012 modules which have been installed after the tertiary treatment as a final polisher.



The performance of these PVDF membranes on the tertiary treated sewage has been very encouraging. The ultrafiltration system was commissioned in November 2019, and has been running successfully since then. ***The real estate developer was satisfied with the consistent and continuous performance of Q-SEP outside-in UF membranes, and decided to install Q-SEP ultrafiltration systems in two more business park locations.***

The product water turbidity has been consistently less than 0.1 NTU. The permeate flow of the UF system has been consistently maintained at 35m<sup>3</sup>/hr. (154.1 gpm) on a daily basis, without any loss in

gross output. QUA Q-SEP UF has provided each of the business parks with the required high quality reused water for their various purposes on site.

UF Feed Water Quality		
Site 1	Site 2	Site 3
Ph: 6.7	Ph: 7.3	BOD: <30 PPM
TSS: 38 PPM	TSS: 12 PPM	COD: <100 PPM
COD: 64 PPM	COD: 176 PPM	TSS: <20 PPM
BOD: 17 PPM	BOD: 21 PPM	Turbidity:
O & G: <5.0 PPM	O & G: 6.0 PPM	<10 NTU
Turbidity:	Turbidity:	
12.4 NTU	3.9 NTU	

## UF Permeate Water Parameters

Transmembrane Pressure (TMP) (Kg/cm <sup>2</sup> )	Flow (m <sup>3</sup> /hr)/Train	Product Turbidity (NTU)
0.7	35	0.1

## About QUA

QUA is an innovator of advanced membrane technologies that manufactures and provides filtration products to address the most demanding water challenges.

## Q-SEP® Hollow Fiber Membranes

QUA Q-SEP® UF membranes incorporate high-strength, hollow fibers that deliver superior performance without the risk of fiber breaks. Q-SEP® UF membranes are available in inside-out and outside-in flow configuration. Both types of membranes have excellent low fouling characteristics. These hollow fiber membranes operate under a pressurized flow configuration for superior performance. Applications of Q-SEP UF include pretreatment to RO systems (brackish and seawater applications), purification of surface and well water for potable applications, filtration of industrial water, and wastewater recycle and reuse.