

Pre-Treatment Settler System

Overview

The Pre-Settling System utilises the natural settleability of mixed liquor in the Activated Sludge Process (ASP) to separate supernatant from sludge. In batch sampling, a predefined mixed liquor volume settles in a vessel. After settling, the supernatant is extracted using an analyzer sample pump. The inlet filter is shielded from mixed liquor exposure by a containment tube within the vessel head. Airflow blockage prevents water sample entry into the containment tube. Once settled, opening the air line allows supernatant into the tube, preventing scum entry through the bottom end. The prepared sample is then extracted for analysis.



Benefits of setLRmonitrix

- **Improved equipment availability**

The process relies on natural settling, so the only addition is time. Other solutions typically use filtration which are typically prone to fouling and ragging leading to partial/full blockages and therefore greater equipment downtime.

- **Large sample volume can be prepared in a relatively short time**

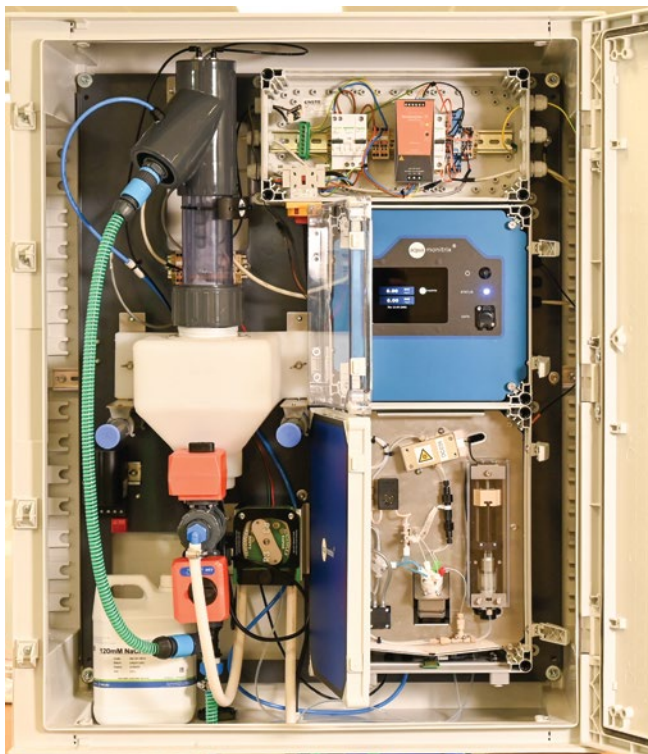
Up to 500 ml of sample can be prepared in 10 mins.

- **Simple & Robust**

The main components used in the system (liquid pump, electric-actuated valves) are tried-and-tested technologies that are mature, are used across various industries, and generally have wide availability.

- **Lower operational costs**

Because the system doesn't involve the use of filtration elements, the operating costs involved in maintaining and servicing filters are eliminated, as well as the cost of spare/consumable elements of the filter element itself which periodically need replacement.



CONTACT US

Pre-Treatment Settler System



How it works

The Pre-Settling System takes advantage of the inherent settleability of the mixed liquor matrix. ASP involves the use of aeration and the addition of chemical agents such as coagulants and flocculants (e.g. ferric sulphate) to the plant influent which accelerate the settling of suspended solid matter within the matrix. When a sample of this mixed liquor is extracted from the ASP process and left undisturbed for a period of time, the suspended solids content can be observed to settle to the bottom of the sample container under gravity to form a sludge, while a clear supernatant layer can be observed to form at the top of the container. This supernatant volume increases with time. This same principle is used as part of the plant treatment process whereby a secondary clarifier is used to settle out the sludge from the aeration basin output.

The solution has multiple design aspects:

1. Sampling from the aeration basin using Supply Pump
2. Settling Vessel to separate the supernatant from the sludge
3. Filter Containment Tube to protect the analyser's inlet filter
4. Control system



Specifications

- Electrical Power: 120-240 Vac single phase, 240 W max., 50/60 Hz (without heater accessory option)
- External Size: 1056 mm (H) x 852 mm (W) x 350 mm (D)
- Operating Temperature range: 5 – 40°C
- Sample Temperature range: 2 – 50°C
- Max. Suction Lift of Pump: 7 metres
- Wetted Materials: PVC, PP, PE, thermoplastic elastomer
- Net Weight: 60 kg approx. (without Aquamonitrix unit installed)
- Pump Flow Rate: Up to 3 L/min
- Settler Tank capacity (filled): 4 litres
- Minimum sampling interval: 15 mins
- Settling Time range: up to 30 mins
- Inlet/Outlet Hose: 1/2" reinforced flexible PVC
- Strainer: Coarse strainer on inlet, uPVC construction, 5mm perforated hole size, 1/2" hose connection.

- Enclosure construction: Fibreglass Reinforced Polyester (FRP), hinged door w/ panel key lock
- Enclosure rating: IP66 to IEC 60529
- Mounting options: wall-mount or pedestal/plinth mount (no mounting system provided)

- Controls and Software: Controls integrated to Aquamonitrix analyser (AQUAtest s/w available to support install & service)

- Pump and valves, electrical: 24 Vdc powered

CONTACT US