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**ASAUTOMECH**  
SOLUTIONS



# Water filtration

**ASAutoMech Solutions (PTY) Ltd.**

Reg Nr. 2002/007472/07

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Applying the highest standards of Engineering through...  
***EXPERTISE, QUALITY & SERVICE***





# Water filtration

Water Containerised Trickling Filtration

We engineer and develop equipment and systems for

## **INDUSTRIAL SOLUTIONS**

in the Advanced Water Treatment, Mining Reagent Systems, and Food Processing Industries

A vertical strip on the left side of the slide features a close-up, high-speed photograph of water splashing, with numerous bubbles and droplets in various stages of formation. The water is a clear, vibrant blue, and the background is a lighter, almost white, suggesting a bright light source. The overall effect is dynamic and fresh.

# H<sub>2</sub>O

## Water & the future

AS AutoMech Solutions has expanded its range of products and services significantly over the past 24 months putting much more emphasis on Water. This includes the treatment of water for human consumption and other related requirements as well as treating water after usage by humans, mines and other industrial applications. Technology used varies from conventional Settlers, DAF units, or a wide variety of membrane technology and in some cases micro and bacterial organisms.

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# Application

**AS AutoMech** have the solution for treating raw sewage to the desired discharge quality, as required by legislation. The African market requires a robust, reliable, and easy to operate solution with market-related capital expenditure. AS AutoMech has developed in conjunction with their technology partners a well-packaged product, using Trickle Filtration Technology, combining it with the ease of transport of shipping containers and LEGO type site assembly for a remote application at a mine or construction site camp, considerable fluctuations in both load and flow can be expected. An effluent treatment plant to serve such a fluctuating load requires extreme flexibility.

**Trickle filter** utilize attached growth technology and would be the most appropriate technology currently available to treat a fluctuating inflow to the required environmental standards.





# The right choice

***Why choose attached growth technology, and especially trickling filtration systems?***

- Easy to operate, with little operator intervention,
- Low power consumption compared to other technologies,
- High spares availability,
- Very reliable duty standby pump configuration,
- Consistent outlet quality,
- Very little sludge produced.
- Extremely well suited for the remote areas on the African continent.

# System Advantages

## 1. OPERATIONAL CHALLENGES

- TF plant does not require skilled operational labor.

## 2. POWER CONSUMPTION

- Only pumping energy required. No forced aeration, compressor/blower required.
- Approximately 35-40% less energy usage compared to activated sludge process.

## 3. MAINTENANCE & SPARES

- Only moving equipment is pumped.

## 4. SLUDGE HANDLING

- Require minimal sludge handling operation.
- Sludge is returned to Septic tank where it is anaerobically digested to approximately 30% of original capacity. Septic tank must be pumped out approximately once every 12-18 months.

## 5. MOBILITY

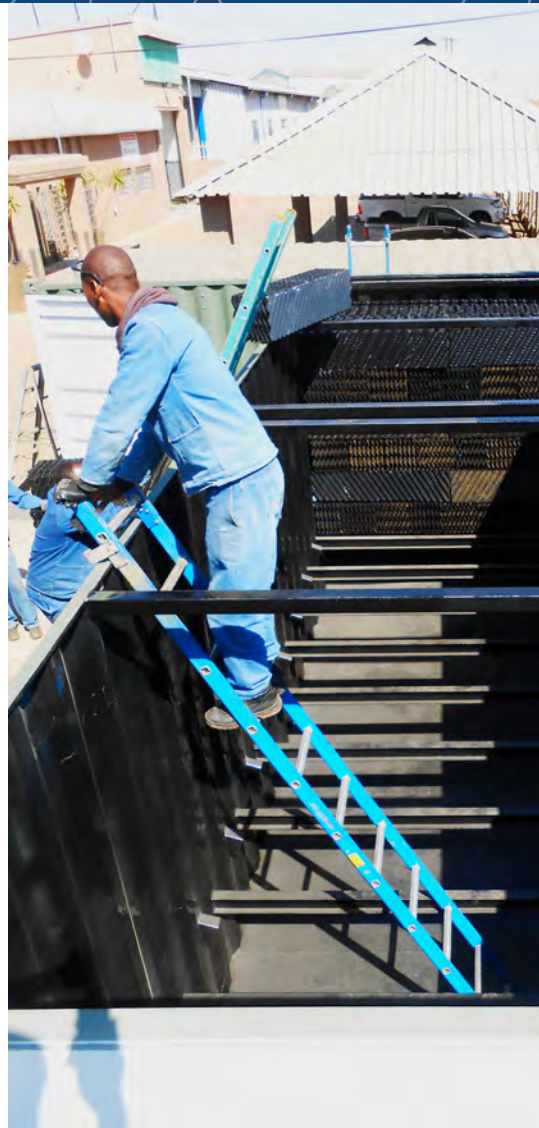
- The system can be relocated with very little effort.















# Design Values

The following inlet quality parameters are used as basis of the design:

|   |            |
|---|------------|
| Chemical oxygen demand (COD), in mg/l   | • 800 mg/l |
| Biological oxygen demand (BOD), in mg/l | • 400 mg/l |
| Ammonical nitrogen, NH <sub>4</sub> -N  | • 25 mg/l  |

The following Final (treated) water quality is expected: Compliance with the RSA General Specification - Revision of general authorisation in terms of section 39 of the National Water Act 1998 (Act no 36 of 1998), see table below for compliance parameters:

|  |           |
|--|-----------|
| Faecal Coliforms (per 100 ml)                | • 0       |
| Chemical Oxygen Demand (mg/l)                | • 75 mg/l |
| pH   | • 5.5-9.5 |
| Ammonia (free and saline) as Nitrogen (mg/l) | • 6 mg/l  |
| Suspended Solids (mg/l)                      | • 25 mg/l |

# Power & Control

| Plant size, PE | Start-up current Total (A) | Running current, per hour (Ah) | Energy usage, per hour (kWh) |
|----------------|----------------------------|--------------------------------|------------------------------|
| 200            | 68                         | 11.9                           | 4.1                          |
| 400            | 84.8                       | 13.8                           | 5.1                          |
| 600            | 76                         | 16.8                           | 6.4                          |
| 800            | 76                         | 16.8                           | 6.4                          |
| 1000           | 106                        | 20                             | 8.5                          |

## Power supply, electrical board and control

Feed power to the system is normally 380V, but 525V can be accommodated. Please specify feed voltage during tender stage.

## Consumables

The only consumables required for the plant, will be sodium hypochlorite (NaOCl) and ferric chloride.

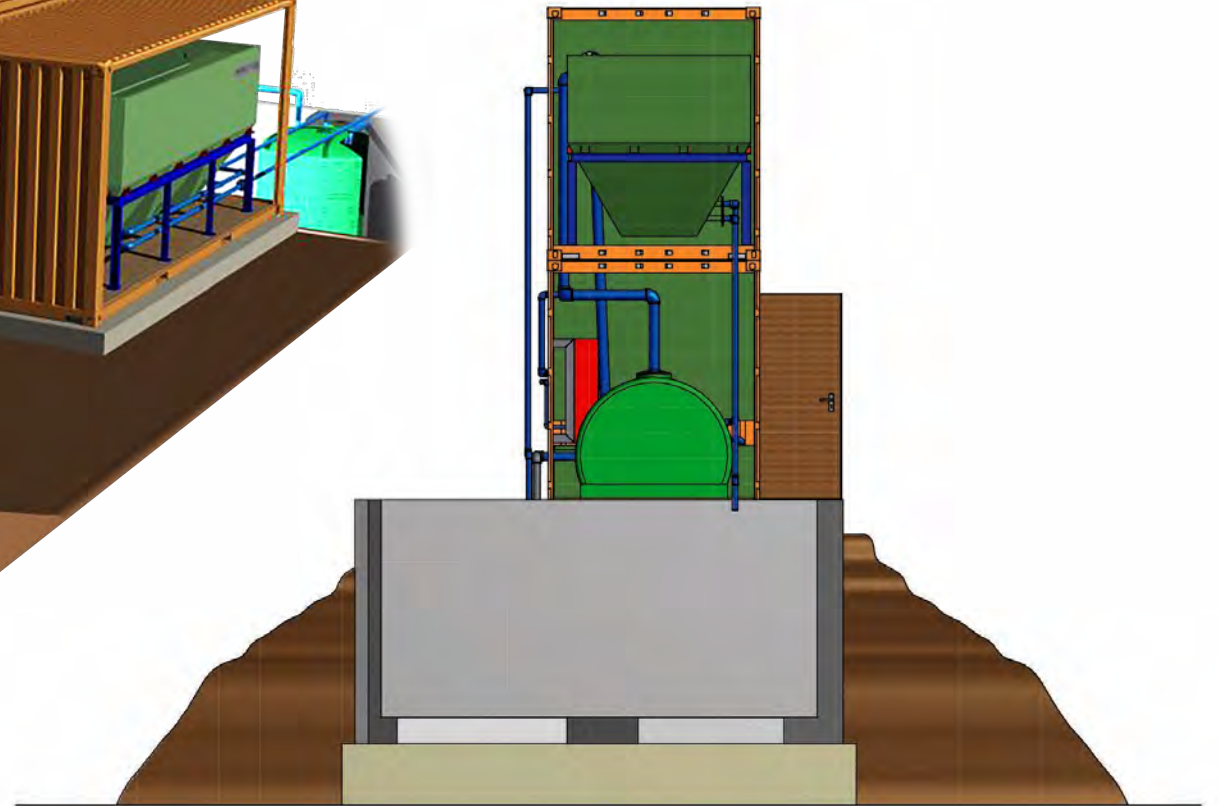
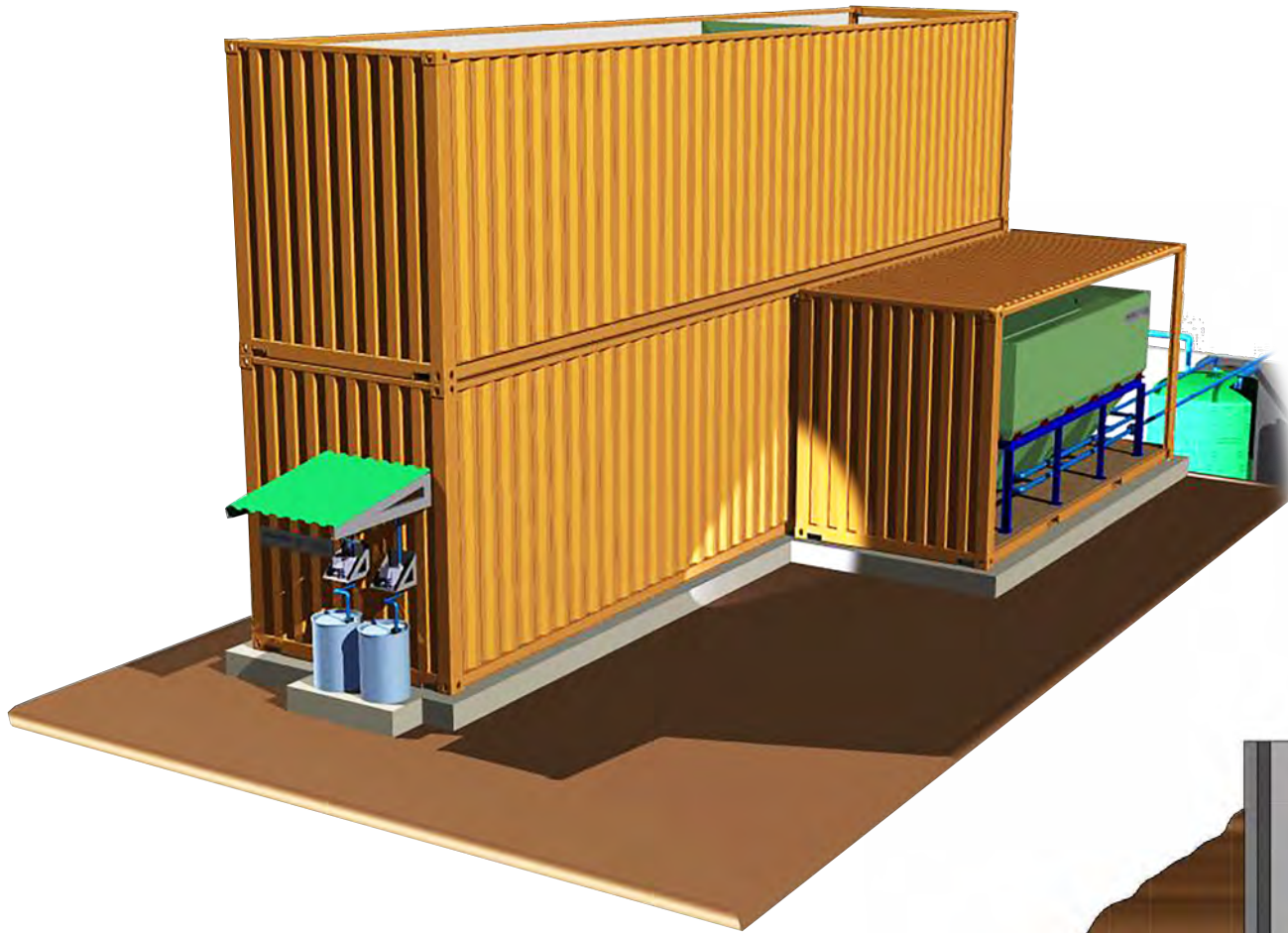
## Battery Limits

| Nr. | Connection                     | Size (typical)       |
|-----|--------------------------------|----------------------|
| 1   | Raw sewage inlet               | 110 mm OD connection |
| 2   | Treated water outlet           | 110 mm OD connection |
| 3   | Sludge outlet from septic tank | 110 mm OD connection |
| 4   | Electrical feeder cable        | Client to specify.   |



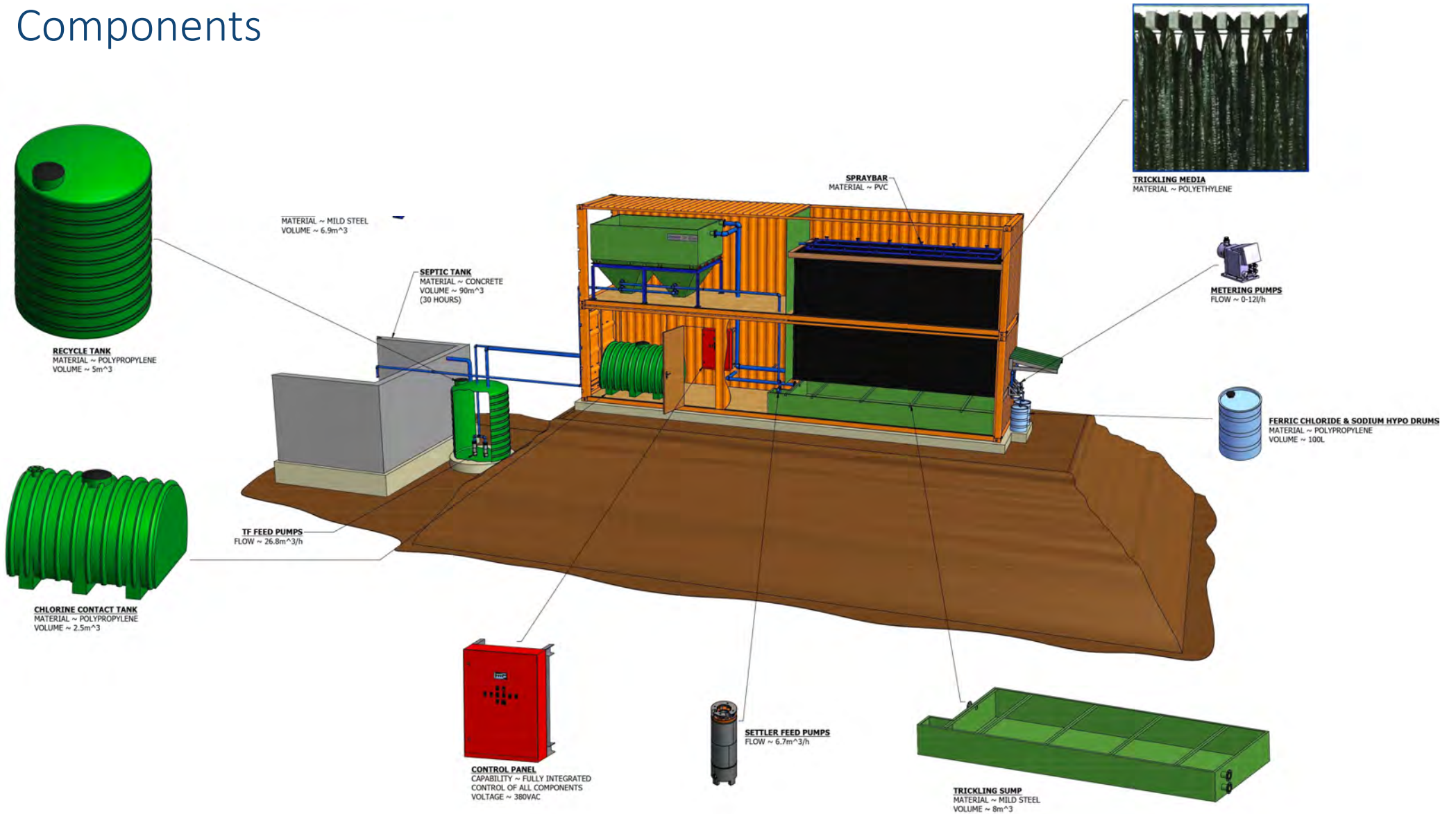


# Structure



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# Components





Extremely well suited for remote areas on the African continent



# PUMPS suitability & usage



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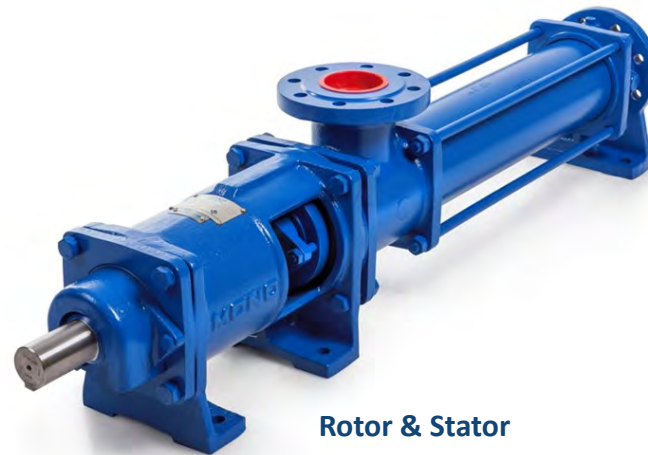


# Pump Models

Various pump types and models are available to compliment our units based on the application and process requirements. We do not have close alliances with any particular manufacturer or make but will always select known brands with reputable products.



Peristaltic



Rotor & Stator



Diaphragm




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