

HUBER Grey Water Treatment



HUBER SE

Industriepark Erasbach A1

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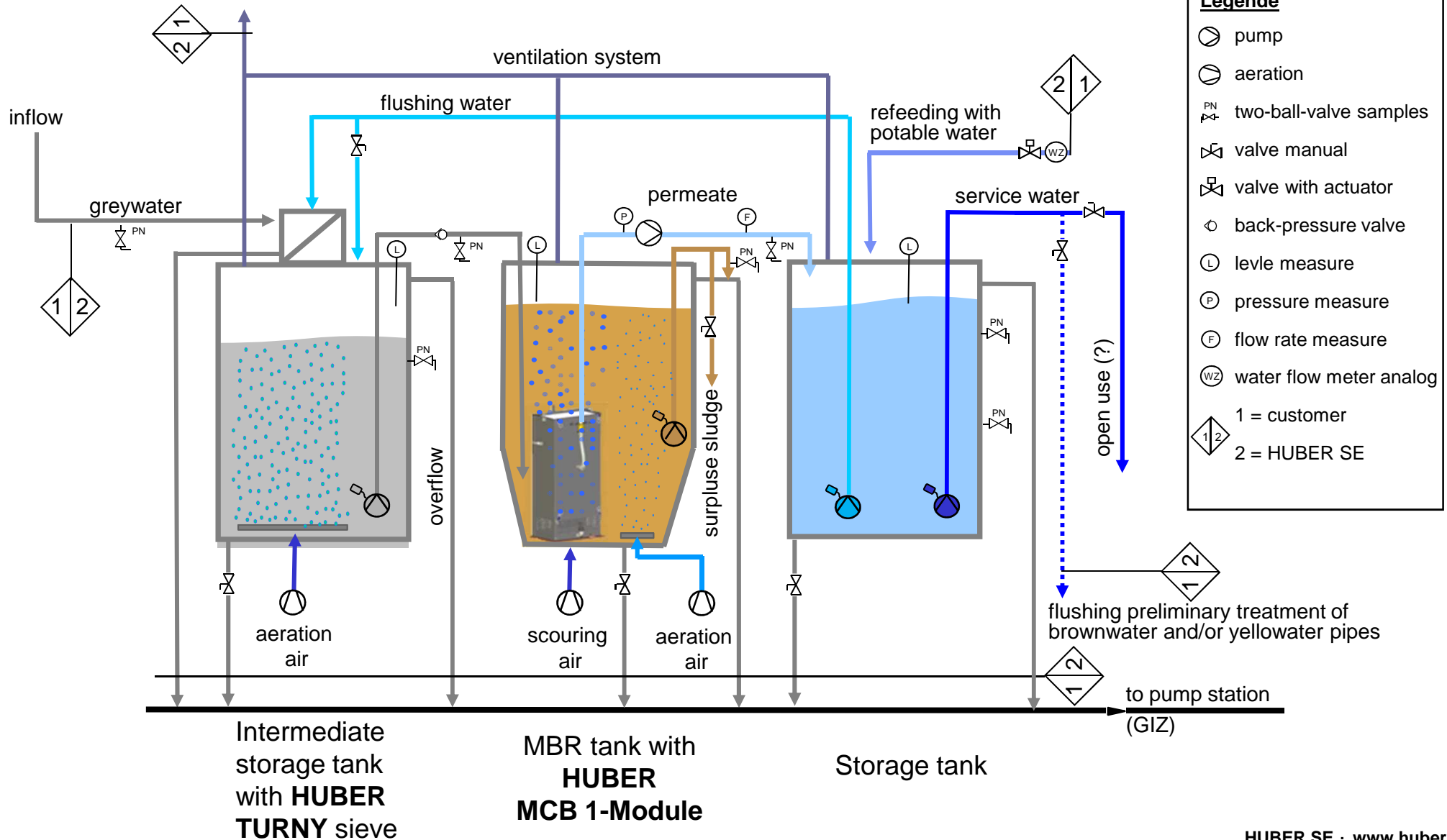
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Content:

- Detailed Flow Chart
- Definiton of Design
- Description of Setup and Function

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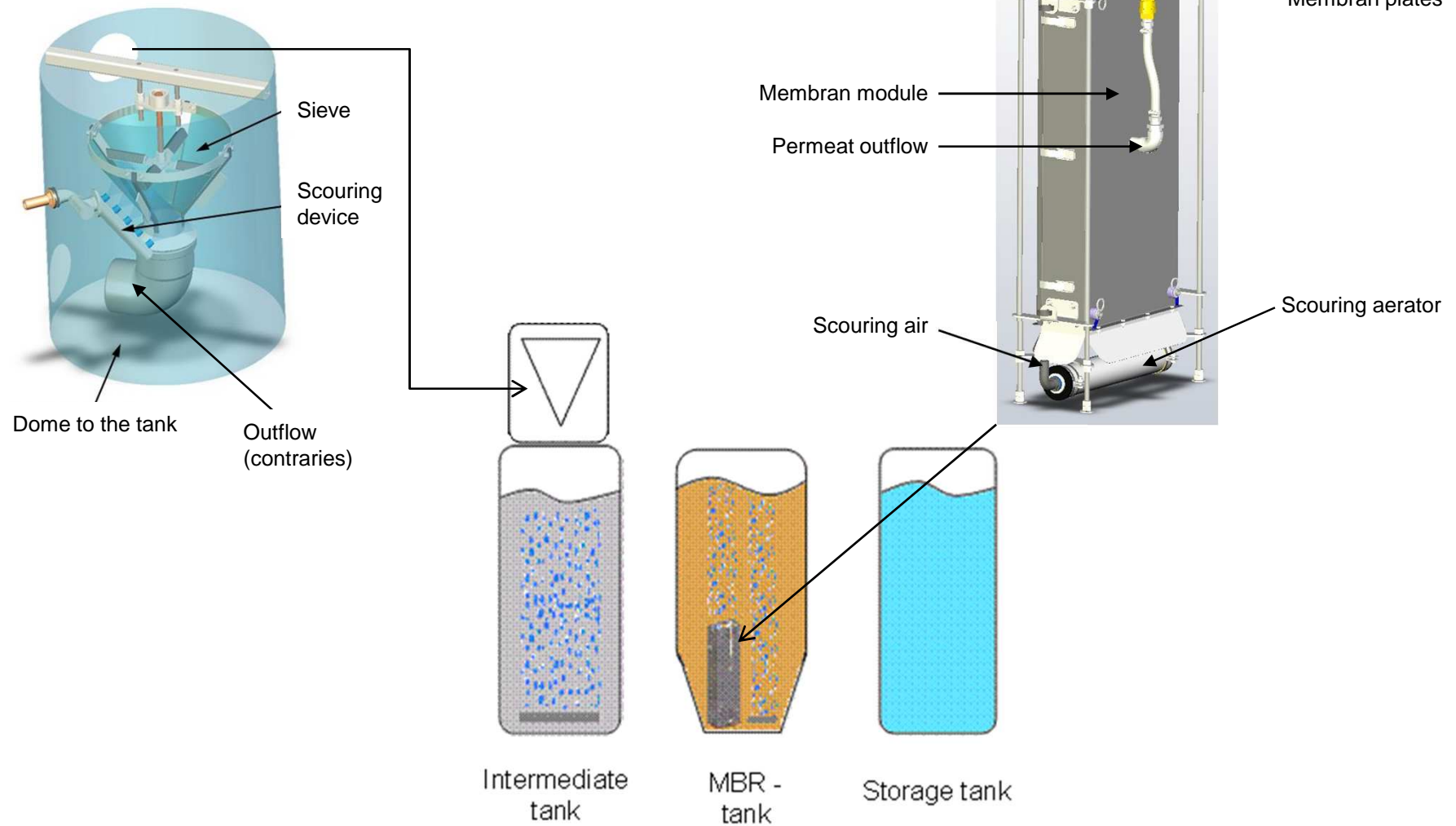
Detailed flow chart



HUBER Grey Water Treatment

Definiton of design

Fig. 1, 2 and 3 define the individual plant parts



Description of setup and function

Setup

The grey water treatment system are three closed synthetic tanks. It is made up of four main components:

1. Storage tank as hydraulic buffer for the feed to the MBR tank with preceding screen (**HUBER TURNY**®) for the retention of hairs and disturbing foreign matter
2. Membrane bioreactor (MBR) with submerged HUBER ultrafiltration module **MembranClearBox**® in a synthetic tank (MCB1 → pore diameter ~ 38 nm, filter surface ~ 3.5 m²)
3. Storage tank for permeate
4. Electric measuring and automatic control devices including remote data transmission and fault indication via SMS and telecontrol

Function:

This technical process for the treatment of grey water (from kitchen sinks and laundry washing) is a combination of a mechanical pre-treatment unit and a membrane bioreactor with ultrafiltration. In the first treatment step, the coarse pollutants contained within the grey water to be treated are removed by the specially developed 3 mm HUBER TURNY screen that provides a 99% water yield and automatic backwashing. The pre-screened grey water, on average 350 l/d, is intermediately stored in a tank from which the membrane bioreactor is fed continuously. With a vacuum, the grey water is sucked through the membrane with 38 nm nominal pore size. Due to the small membrane pore size all particles including bacteria and the majority of viruses are retained. Continuous introduction of scouring air below the membrane modules prevents clogging of the membrane surface and ensures continuous mixing within the MBR tank. Sufficient oxygen supply for the biological processes is ensured by the installation of an additional aerator on the tank bottom. The treated water, the permeate, is collected in a storage tank. The quality of the permeate complies with the legal EC standards for bathing waters. The complete plant is odour-tight.