



Environmental Experts.

PURPLE TECHNOLOGY FOR CLEAN WATER

Turnkey Solutions for Wastewater Treatment

Analysis | Planning | Plant Construction | Start-up | Optimization | Maintenance



CUSTOMIZED SOLUTIONS FOR INDUSTRIAL WATER TREATMENT

Put your wastewater management challenges in our hands. As specialists for water treatment and reuse, our **DAS Environmental Experts** develop technically and economically optimal solutions according to your needs.

Benefit from our many Years of Experience with numerous Customers in a wide Range of Industries



Food Industry



Beverage Industry



Chemical Industry



Semiconductor Electronics/
Solar Industry/Microelectronics



Cosmetics Industry



Pharmaceutical Industry



Paper Industry



Waste Management Industry

EFFICIENT ENVIRONMENTAL TECHNOLOGY “MADE IN GERMANY”

DAS stands for reliability and quality. Our extensive technology portfolio makes it possible to send a wide range of different types of wastewater for reprocessing and to clean it up so that it meets the relevant requirements. Innovations are our response to the specific requirements of our customers.

We generally find bespoke solutions for each individual case. Our customers benefit from the many years of project and process experience, as well as the outstanding technological know-how of our experts.

Clever Wastewater Treatment for Production Expansion

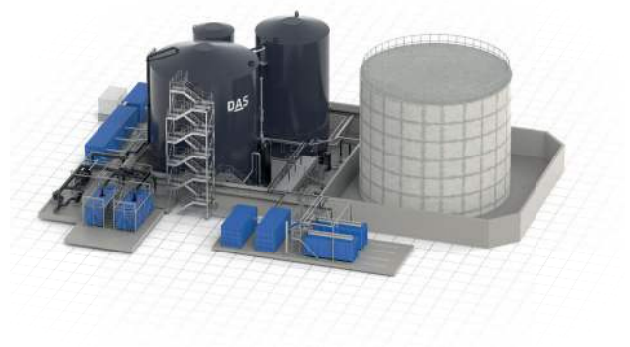
REFRES NOW S.A., one of Argentina's leading beverage producers, has invested in the expansion of its capacities at its La Matanza location in recent years. The plant is now one of the largest production facilities for soft drinks in Latin America. With increasing production volumes, the wastewater technology also had to be adapted. The company relied on **DAS** expertise in this regard. The requirements for the new plant were a volume flow of 80 m³/h with a maximum COD concentration of

7000 mg/l. Due to the economic efficiency by energy recovery, wastewater with such high COD concentrations is normally pre-treated by anaerobic processes. However, at the request of the customer, an exclusively aerobic process was to be used in La Matanza. Due to the predicted daily COD load of up to 7 tons, the small space requirement and the low sludge production, we successfully implemented the MBBR process in the La Matanza plant.



Modular and scalable: DAS Wastewater Treatment Plant for DSM Nutritional Products AG

Increasing production capacities have pushed the existing wastewater treatment plant at the chemical company DSM in Switzerland to its limits. The wastewater treatment requirements were a challenge in this project. This is because DSM operates the world's largest production facility for vitamin E. The wastewater characteristics are therefore similar to those of the chemical industry. However, the strict regulations of the beverage and food industry have to be met. In addition, the design had to be constructed as a temporary plant and it had to be possible to dismantle it again if required. Our **DAS** experts mastered these challenges and installed a two-stage MBBR plant in only 14 months.



Today, we support the plant together with DSM Nutritional Products AG. Online remote maintenance ensures efficient and cost-saving service. And should production continue to grow, it can be easily retrofitted on the available site thanks to the small space requirement.

SERVICE PORTFOLIO

As experts in water treatment, we offer you a wide range of biological and chemical-physical processes to bring the specific pollutants in your wastewater within the permissible limits. Our service portfolio includes not only consulting and implementation of your project from planning to handover, but also maintenance and repair or operation of the wastewater treatment plant on your behalf. Moreover, it does not make a difference whether a new construction, expansion or optimization is involved.

Services

Wastewater Analysis	Planning & Development	Construction & Assembly	Optimization	Service & Maintenance
<ul style="list-style-type: none"> › Water analyses › Biological degradation tests › Precipitation/flocculation tests › Sorption tests › Ion exchange (IEx) tests 	<ul style="list-style-type: none"> › Technology selection & process engineering design › Mechanical & electrotechnical design › Software development › Feasibility studies › Concept evaluation & comparisons 	<ul style="list-style-type: none"> › Project management › Site management › Assembly › Start-up 	<ul style="list-style-type: none"> › Analysis & inventory › Automation › Modification of existing plants 	<ul style="list-style-type: none"> › Customized maintenance › Plant & system services › Process engineering support (including via remote access)

Technologies

Mechanical Processes	Chemical-physical Processes	Biological Processes
<ul style="list-style-type: none"> › Rake/Sieving › Sand filtration › Sedimentation › Sludge Dewatering 	<ul style="list-style-type: none"> › Precipitation & flocculation › Flotation › Ion exchange › Sorption › Oxidation processes › Membrane filtration (MF, UF, NF, RO) 	<ul style="list-style-type: none"> › Moving Bed Biofilm Reactor (MBBR) › Trickle Flow Reactor (TFR) › Membrane Bio Reactor (MBR) › Sequencing Batch Reactor (SBR) › Activated sludge process

SOLUTIONS & PRODUCTS

Every industrial company is looking for an optimal solution for wastewater treatment. However, the requirements are unique for each project. Our **DAS** products offer a perfect combination between the advantages of standardization and the individual needs of each customer – no matter whether a single biological treatment stage for wastewater is to be installed, a complete wastewater treatment plant is to be built, or an entire factory is to be equipped with wastewater technology.



Flexible, reliable & economical in Operation – DAS complete Solutions for your Wastewater Treatment with the MBBR Process

The MBBR process (Moving Bed Biofilm Reactor) is a technology for biological wastewater treatment. In this process, microorganisms are cultivated as a biofilm on carrier material. These microorganisms take over the degradation of both organic wastewater ingredients and nitrogen compounds. Similar to other biological processes, wastewater treatment using MBBR bioreactors also produces excess sludge. However, the amount is significantly lower than conventional

activated sludge processes with similar capacity. Additionally: Due to the microorganisms living in biofilms, the MBBR cleaning process is very robust and much more stable than other biological treatment technologies. MBBRs function well even under challenging conditions and they recover very quickly after downtimes. This makes them a very resistant solution for industrial wastewater treatment.

SALVINIA – scalable MBBR Reactors in four standard Sizes

As specialists for the biological treatment of industrial wastewater with the MBBR process, we apply special carrier materials. It is characterized by a very high specific surface area. This makes the process highly efficient and enables a unique compact plant design.

In the new SALVINIA product group, we combine effectiveness and compactness with time and cost advantages for our customers. We offer MBBR reactors in four different sizes: SALVINIA 70, SALVINIA 170, SALVINIA 470 and SALVINIA 1060. Through this kind of standardization, we significantly reduce lead times and enable high cost saving potentials.

Depending on your needs, DAS MBBR reactors are of course also available in customized sizes.



DAS SOLUTIONS HUB

Optimal maintenance and service ensure operational safety, availability and extends the lifetime of a wastewater plant. The digital services of the DAS SOLUTIONS HUB offer the perfect combination of fast and best support while saving time and money and conserving human and environmental resources.

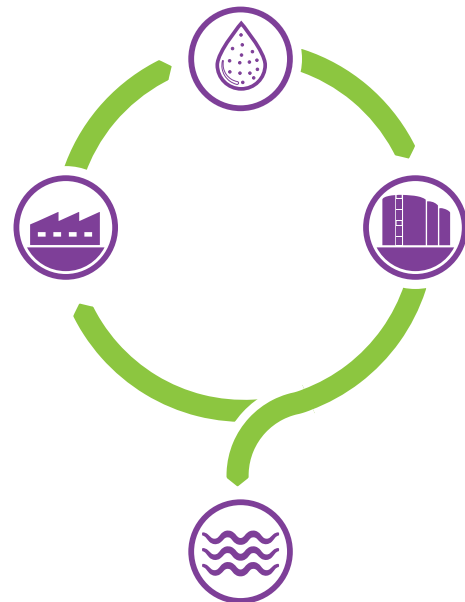


EFFICIENT REUSE OF WASTEWATER

Using water efficiently – we support companies in various industries in optimizing operational water cycles. Our customers benefit from a comprehensive portfolio of technologies, equipment and services.

Reusing Water is an economic Advantage

In industry, water is indispensable for many processes. Water is needed in numerous production steps – not only for washing and cleaning, but also for cooling and heating, as a solvent for chemical substances or, for example, as a medium for transport. In many cases, it pays to treat process wastewater in the plant and reuse it several times, thus reducing the costs for fresh water supply and wastewater disposal. More and more companies are pursuing sustainability goals and see it as an integral part of their corporate philosophy to conserve resources, protect the environment and assume social responsibility. We, **DAS Environmental Experts**, are the right partners for this.



How intelligent Water and Wastewater Management succeeds

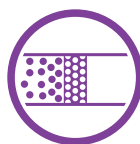
Water reuse is defined by wastewater that, depending on the required quality, can be reused untreated or treated for a specific purpose. There is no specific technology that makes water reuse possible. Rather, it is an interaction of different processes and modern environmental technologies. With the innovative **DAS** solutions for wastewater treatment, industrial growth and the preservation of natural resources can go hand in hand.



Membrane



Filtration



Reverse Osmosis



Biological
Treatment



Chemical-physical
Treatment



YOUR ENVIRONMENTAL EXPERTS

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