

Residual today, commodity tomorrow

Your partner for residual
treatment and recovery of
recyclable materials



AIK Technik AG

Environmental protection and progress as the dynamic basis of our technology.

The know-how of AIK Technik AG is based on many years of experience of our employees. From the innovative core of Von Roll Umwelttechnik AG, an independent company, BSH Umweltservice AG, developed in 1998. In 2018, AIK Technik AG (was founded with the core employees and knowledge carriers.

Thanks to the valuable knowledge and experience of its employees, BSH Umweltservice AG was able to successfully establish itself at the end of the 1990s in the environmentally specific sectors of wastewater, exhaust gas and residue treatment plants. In 2013, the team was strengthened with specialists in the field of pit and quarry. With our innovative and sustainable concepts, AIK Technik AG today helps to consistently improve the state of the art.

Today, AIK Technik AG is a sought-after partner, consultant and plant constructor for authorities, special-purpose associations and various branches of industry in the private sector when it comes to closing material cycles and implementing residue and wastewater treatment plants as well as soil treatment plants.

Swiss
Made



Foreword by the Managing Directors of AIK Technik AG

First of all, we would like to thank all those who have supported AIK Technik AG over the past years. Thanks to your help, we have been able to strengthen our position as one of the leading suppliers of recycling equipment in Europe. We are proud of our achievements and of what we have accomplished.

Sustainability is an important part of our work. We are committed to reducing the environmental impact of residual materials and conserving resources at the same time. This is not only good for the environment, but also for our customers and employees.

In recent years, we have continuously invested and expanded our business. Even in difficult times, we have stuck to our concept and continued to look to the future. This has paid off: We were able to increase our sales last year. Despite the COVID 19 pandemic of the last few years, the company was able to continue its growth and further expand its position as one of the leading companies in the recycling industry.

Growth was driven by a number of factors, in particular the increasing demand for recyclable products in the fields of municipal and industrial recycling. In addition, investment in research and development at our in-house laboratory was expanded to strengthen the company's position as an innovative technology company.

The results of the last years confirm the correctness of the strategic decisions made in the past years. The investments in research and development have paid off and enable AIK Technik AG to continue to drive technological innovations and open up new markets. At the same time, the investments in employee training have contributed to the fact that AIK Technik AG continues to have a highly qualified and motivated team that is able to cope with the demanding tasks.

AIK Technik AG will continue to invest in the coming years in order to consolidate its market position and develop new growth opportunities. At the same time, the company will make its contribution to shaping a sustainable future for our society. We look forward to working with you and are convinced that together we can achieve a great deal.



Danny Langenberg
Managing Director Sales of AIK Technik AG



Fabian Wölm
Managing Director Technology of AIK Technik AG



Your advantages at a glance

As a system supplier in the field of residue treatment and recycling, we play a key role. Our conceptual developments and proprietary technologies enable the consistent implementation of closed material cycles in environmental and recycling management.



Ecological and sustainable

We stand for environmentally friendly, sustainable and innovative technologies.



Economic efficiency

Process- optimized concepts reduce the use of operating resources and thus help to cut operating costs.



Efficient recycling

Residue treatment with subsequent recycling of valuable materials is the core topic of our processes.



Personal care

Personal contact is close to our hearts. We always have an open ear for your personal concerns.



Sound know-how

Our employees have a total of over 50 years of experience in plant engineering - we know what we are doing.



High standard of workmanship

A plant is an investment that must last for years. That requires quality - and we deliver it to you.



Transparency and open communication

We stand for a transparent way of working and open communication. For us, trust is the key to successful cooperation.



Turnkey plants

We deliver turnkey plants that meet your budget. We always strive to provide you with the best price-performance ratio.

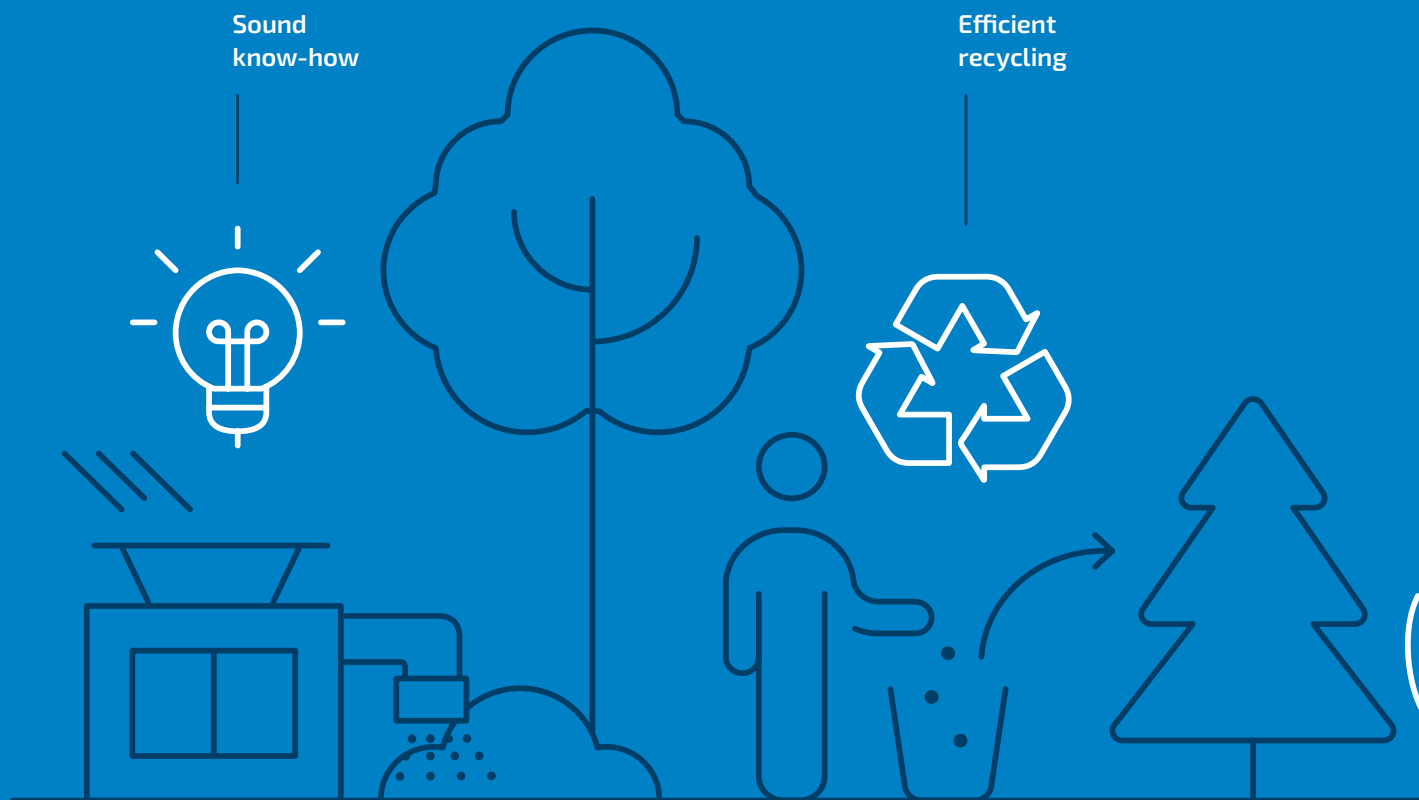


«For 25 years, I have been committed to the environment and environmental policy in Switzerland. I appreciate the work at AIK Technik AG because we have already been able to make so much happen in this area.»

Siegfried Reithaar
Sales Manager Municipal of AIK Technik AG

Our mission statement

The mission statement of AIK Technik AG is characterized by a high sense of responsibility for sustainable and environmentally friendly development in the field of residue treatment and recovery of recyclable materials.



Ecological and sustainable

Customized plants



We are proud to make an important contribution to environmental protection and resource conservation with our technologically pioneering processes. Through our own innovative developments,

we contribute significantly and consistently to improving the state of the art and at the same time achieve a high level of customer satisfaction.

Technologies and know-how for sustainability

Our highly qualified team plans, develops, builds, commissions and supports customer-specific, technologically pioneering complete solutions for residue treatment, recycling and waste water treatment. AIK Technik AG has an interdisciplinary team of highly motivated scientists, technicians and engineers with many years of experience.

In 2022, we had a total of 29 employees.

Our employees bring with them a broad know-how in the following areas:

- Environmental engineer and environmental engineering science
- Process engineers
- Environmental process engineering and recycling
- Energy and raw materials supply engineering
- Design engineers
- Chemical and Bioengineering Scientists
- Urban Water Management & Water Protection
- Mechanical Engineering

AIK Technik AG has its own technologies, some of which are patented:

- | | |
|----------------|---|
| ➤ FLUWA | Sour fly ash wash |
| ➤ ABA | Wastewater treatment plants |
| ➤ Mercury-Ion | Mercury separation |
| ➤ FLUREC | Zinc recovery |
| ➤ Leachphos | Phosphorus recovery |
| ➤ Pit & Quarry | Soil washing plants |
| | Schlammannahme |
| | Sludge reception sludge water treatment |
| | Wastewater treatment plant |
| | Optical gravel sorting |



Group picture incl. partner assembly company



Climate change has greatly altered the way we use natural resources. In the search for solutions to make our economy more ecological and sustainable, AIK Technik AG plays a key role.

cent years, developed innovative technologies and realized various plants in Switzerland and Europe that stand for the consistent implementation of closed material cycles in the environmental and recycling economy.

With our technologically pioneering processes, we make an important contribution to keeping national and European industrial companies and waste incineration plants ready for the future in terms of environmental protection and resource conservation.

that also enjoys top priority in the Swiss economy. The need for action has been recognized, but the tailor-made solutions for implementation are usually lacking. AIK Technik AG from Sursee, Switzerland shows how sustainability and economic efficiency can be combined and how a noticeable contribution to resource and climate protection can be made. As a Swiss plant engineering company with a focus on recovery of recyclable materials, the company has in re-

Economy and ecology in balance

In view of the worsening climate crisis, it can be assumed that in the coming years even more industrial companies and communities will rely on the support of AIK Technik AG in the implementation of their sustainability goals. The company from Sursee, Switzerland shows in an exemplary manner how economic and ecological goals can be combined in a logical way.

There is a growing awareness that economic value creation is most sustainable when nature remains in balance. Circular economy instead of resource overuse is the goal

Our range of services

We offer a broad portfolio of wet-chemical and mechanical processing technologies for the environmental and construction industries. In doing so, we draw on the know-how and many years of experience from our corporate tradition in thermal disposal.

01 **Municipal** waste incineration plants

Waste incineration with recovery of recyclable materials by means of AIK processes and technologies - such as acid fly ash washing (FLUWA), pollutant elimination from wastewater, mercury removal, and the recovery of zinc and other metals form the focus of our service offering. We can recover phosphorus from sewage sludge ash (Leachphos).

We invest annually in new technological developments and in the optimization and further development of existing plants, components and processes. Our efforts are systematically focused on new processes to increase innovative strength and on existing processes to make operations more efficient and reduce material and energy requirements. Our plants embody sustainability and real value creation for the economy, energy and the environment.

AIK Technik AG, as a plant constructor, is currently in charge of 26 of a total of 30 waste incineration plants in Switzerland and many more abroad.

02 **Industry** Pit & quarry

We develop innovative turnkey systems and components for process water treatment for all industrial sectors. The main focus is on the pit and quarry sector with soil washing plants, drilling mud treatment and clarification systems for gravel plants, road sludge and road mop, as well as wastewater from concrete plants.

This involves minerals that are separated from other materials in order to be available again as raw materials. With our AIK processes and technologies, we are a strong partner in the field of residual material treatment and recovery.

03 **Services** Laboratory and after-sale service

We offer a wide range of other services, from competent consulting and design planning to the planning and commissioning of plants. We also have our own spare parts warehouse and a fully equipped service bus with which we can act quickly and carry out initial repairs. We also have our own assembly team, which is well versed in plant construction.

Finally, we have an in-house laboratory where we perform laboratory and operational analyses.



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MÜVE Biel





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Municipal Waste disposal security for waste incineration plants

FLUWA process (AIK fly ash wash)

Acidic filter and fly ash scrubbing (FLUWA process) is the heart of our AIK technology. Zinc, copper, cadmium, lead and other metals are efficiently removed from the filter and fly ash in the extraction process after mercury separation in the acidic scrubbing water. The result is secondary raw materials. After treatment, the remaining fly ash can be disposed of together with the slag in an environmentally compatible manner and without any problems at a landfill site.

Mercury deposition (AIK mercury ion process)

AIK mercury ion process consists of a pre-filtration (candle filter) and selective mercury silver ion exchange columns, which efficiently separate mercury from the process liquids. The size of the components used always depends on the volume of wastewater to be treated. In the process, approx. 98 % of the mercury introduced into the waste incineration plant is removed, thus falling well below the limit values in the wastewater. This is an environmentally friendly process that can be widely used in various branches of industry.

Waste water treatment (ABA)

With the AIK Wastewater Treatment Plant (WTP), the heavy metals contained in the wastewater are precipitated as metal hydroxides and efficiently separated. The resulting hydroxide sludge is drained of water via filtration systems and, in the case of a preceding FLUWA process, fed to a metal smelter as a secondary raw material for zinc production. The wastewater filtered by our treatment process and thus free of heavy metals complies with water protection regulations and can be discharged into the receiving waters without any problems.

Filtration with candle filter

AIK cartridge filters are used to filter solids from acidic, neutral or alkaline liquids. AIK cartridge filters are particularly suitable for the filtration and drainage of inorganic mixtures and, as total filtration, produce a completely solids-free liquid in a single process stage. After reaching a certain flow rate or a defined filtration pressure, filtration is interrupted and the resulting filter cake is blown off the inside of the filter cartridge with compressed air. A cartridge filter system can be operated fully automatically. This significantly reduces the operating effort and makes filtration extremely interesting from an economic point of view.

Zinc recovery (AIK FLUREC process)

FLUREC stands for „fly ash recycling“. With this process, pure zinc can be extracted from the fly ash of waste incineration. Large quantities of heavy metals end up in our waste every day. During incineration, they remain as residues in the slag and the exhaust gas cleaning system. In other words, in the fly ash, which consists of incineration smoke and very fine dust. The FLUREC process is a revolutionary technology for recovering lead, cadmium, silver, copper and pure zinc from the ash for direct marketing.

Phosphorus recovery (AIK-Leachphos)

The AIK Leachphos process is a wet-chemical phosphorus recycling process of municipal sewage sludge ash from mono-incineration. In the leaching process, crude phosphorus is reductively extracted in stages from the sewage sludge ash by means of diluted mineral acid. In further stages, the phosphorus is processed into fertilizer or phosphoric acid, which complies with the environmental requirements of the fertilizer Act and supports the principles of circular economy.



Residual today, commodity tomorrow



In the field of pit & quarry, the focus is on minerals which are separated from other materials in order to be available again as raw materials. With our AIK processes and technologies, we are a strong partner in the field of residual material treatment and recovery.

Residual material to raw material - for this we invest - as well as in the optimization and further development.

Gravel plant with hose water treatment

Industry in the field of pit & quarry

We develop turnkey plants and components for the processing of minerals according to the state of the art. The main focus is on the field of pit and quarry with soil washing plants and drilling mud treatment. We supply high-performance clarification systems for gravel plants, road collector sludge and road mop, as well as wastewater from concrete plants.

Legislation requires environmentally compatible processing and treatment of all construction waste. With our modern process and treatment technology, we are able to plan, build, retrofit and upgrade stationary treatment plants to meet the high environmental and market requirements in a sustainable and qualitative manner.

Excavation and soil-washing plants

The wet-chemical know-how of AIK, combined with the internal laboratory, allows us to find economical solutions even for complex contaminations (mineral oils, organic contaminations, chrome VI, lead and other heavy metals). Our company supplies flexible process technologies that process excavated and soil materials and return them to the material cycle in a targeted manner.

Clarification technology

The AIK clarification technology is flexible and designed as a modular system to treat industrial sludge efficiently. Our fully automatic clarification system can be modularly expanded or retrofitted according to economic needs and requirements. The heart of the system is the clarifier. Its structure is functionally designed in such a way that the inoculated water can enter directly into the cone of the plant, where an effective sedimentation of the sludge takes place. Special agitators ensure stable homogenization of the sludge. A modular filter press ensures safe discharge. The continuous density and sedimentation

measurement monitors the optimum sludge thickening and guarantees short process times and minimum flocculant consumption. The clarified water is recycled in a closed circuit and can be reused for all washing and dilution processes. Our AIK clarification technology effectively and sustainably creates closed material cycles.

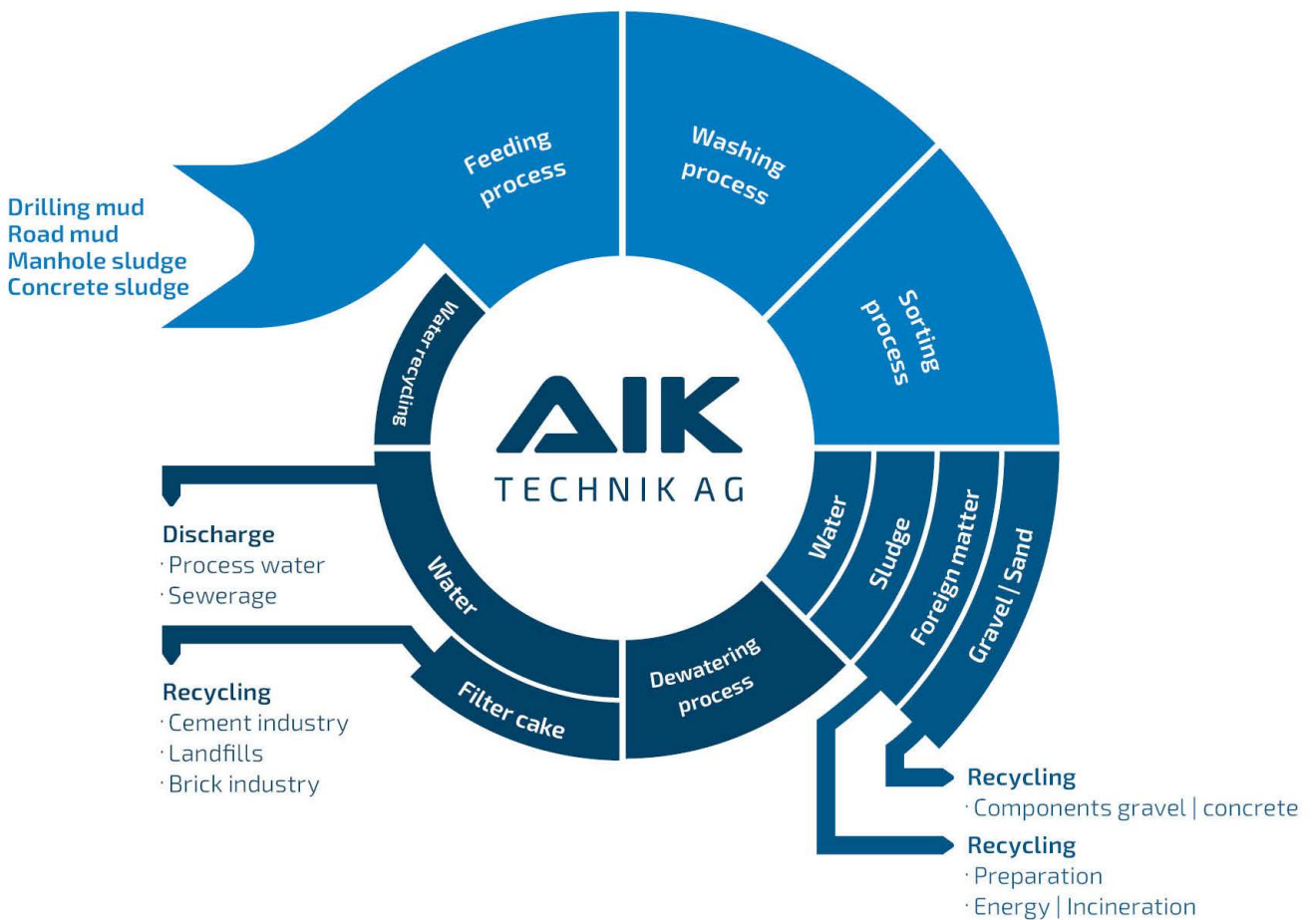
Optical sorting

We have added optical sorting using the AIK process to our range of services. We use the principle of sensor sorting. Camera sensors measure the properties of the particles and can thus be sorted out individually.

«I have encountered an open team that really wants to move forward and pursues its goals with a great deal of commitment. It is also impressive how consistently the idea of sustainability is pursued and is lived.»

Stefan Betschart

Sales Manager Pit & Quarry of AIK Technik AG



Today, a gravel plant or a large construction site has hardly any space available for a sludge pond or a landfill for liquid sludge. Legislation stipulates that process water must be recycled as far as possible and sludge must have water drained off. Sludge disposal must therefore necessarily include the drainage of water.

and a filtration unit. Proven technology for successful fully automated water drainage is the chamber filter press, to which a mixing tank for the pre-thickened sludge is connected upstream.

Drilling mud & road mop treatment

AIK uses various processes and high-performance components to achieve sustainable separation of the coarse materials and water drainage of drilling and road collection muds.

Coarse materials and sands are separated by means of a classic screen/cyclone system and discharged via the water drainage screen. After this process, the excess water is fed to the sludge water treatment plant.

Drainage systems

Sludge drainage (removal of water) is an essential stage of any treatment plant and process water system. Various processes and components are available for this purpose. Our broad knowledge base and many years of experience help us to select the most suitable components and proven application techniques to create a high-performance overall system. A water drainage system usually consists of a clarifier, mixing tank

Services Laboratory and after-sales services

In addition to the construction of new plants and process technologies, we also deal with the modernization, expansion and optimization of existing retrofit plants. For this purpose, we develop technically tailored, individual concepts for our customers.

AIK provides consulting, planning, optimization and execution. This includes a compact service for sewage and drainage systems as well as for modernizations, which can be called up at short notice and is ready for use. AIK Technik AG has its own spare parts warehouse. Services are therefore available and ready for use at any time. Our after-sales service, with delivery and management of spare parts and parts subject to wear, is an integral part of our quality management and is highly appreciated by our customers. We act very quickly and can be with you within a few hours in the event of problems. We work together with the customer to find a solution that suits everyone.

We can also guarantee plant assembly at any time through our partner company. The employees are very well versed in plant construction and can quickly and accurately perform the desired assembly.

Other services:

- Competent advice
- Preliminary and design planning
- Planning of new and retrofit plants
- Own spare parts warehouse
- Maintenance work
- Own assembly team
- Augmented reality (computer-aided representation of information)
- Partial and overall project management
- Analyses of existing plants
- Construction supervision and project management
- Concepts, studies and economic feasibility studies
- Optimization of processes on site





The best preparation for tomorrow is to do the best today. We are constantly researching new, innovative technology solutions in our in-house laboratory.

Research and development have always been an important part of our work. AIK Technik AG invests annually in new technological developments as well as in the optimization and further development of existing plants, components and processes.

In doing so, we systematically focus our efforts on new processes that could replace the current ones. We make the operating procedures of existing processes more efficient in order to reduce material and energy requirements. Our plants embody sustainability, a real added value for the economy,

energy and the environment.

Our customers are increasingly confronted with stricter directives, laws, and changes in environmental, water, and waste regulations. The market is therefore demanding more safety in disposal systems. Our longstanding and highly qualified team plans and builds customer-specific and technologically pioneering complete solutions for the treatment of residual materials, as well as for excavation, sludge and wastewater treatment. With the support of our laboratory, our environ-

mental and process engineers are constantly developing new and improved processes and products that are an expression of innovation, sustainability and our many years of experience.

Thanks to our own independent laboratory, we are always in a position to carry out expert laboratory and operational analyses and to provide our customers with competent support and assistance in troubleshooting, as well as in process and operational optimization. We use different analytical methods, (water, solids) which are successfully applied in the optimization of existing processes as well as in the application of new process developments (chromate removal, Leachphos).

AIK

TECHNIK AG

AIK Technik AG
Allmendstrasse 6 | CH-6210 Sursee | +41 41 510 65 00
info@aiktechnik.ch | aiktechnik.ch | **Residual today, commodity tomorrow**

