
Environmental Expertise
for the Future
MUEG

Taking Responsibility for Change

Surface mining pit in Geiseltal valley (photo: H. Storch)

Geiseltal Lake near Braunsbedra

STRONG FOR THE REGION

MUEG takes on responsibility for the environment and shapes the face of the region.

A region that thirty years ago was marked by the legacy of surface mining landscapes left by lignite mining has now been reconquered by nature and humans as places to live, relax and grow. This transformation is part of the success story of MUEG Mitteldeutsche Umwelt und Entsorgung GmbH. The history of this company, which was incorporated in 1990, was never short of new challenges and structural changes. Innovative strategies and processes needed to be developed, new business fields had to be created. MUEG managed to grow with its challenges, and that is what makes us so strong today.

Approx. 250 staff at our company sites in southeast Germany and on location with projects in Germany and abroad ensure that we have been able to establish ourselves throughout Europe as a reliable and innovative partner in waste disposal and environmental remediation. Even today, 10 percent of our staff work in research & development, helping to secure and extent our position on the market.
Furthermore, close partnerships with the region's universities and research institutes reinforce our development know-how.

Based on the experience of recent years, MUEG managed to build a wide-ranging, client-oriented service portfolio.

- Remediation of brownfield sites, contaminated sites and landfills
- Recultivation of post-mining landscapes
- Recycling and disposal of waste materials
- Disposal of residual waste from power plants
- Planning and development of intelligent and environmentally friendly solutions for ecological problems

Whenever possible, we re-introduce treated waste materials back into the economic cycle in the form of recycled products. One success story in this field is the industrial recycling of gypsum-containing waste: We operate the first stationary treatment plant for such materials in Germany, which has earned us the Environmental Award given by the State of Saxony.


Understanding the future,
shaping the future

COMMITTED TO THE **ENVIRONMENT**

MUEG develops strategies for the utilisation of waste materials, sparing valuable raw material resources.

The Law on the Circular Economy provides the framework of our actions. For us this means: How can we recover raw materials from waste? Where can we best close material cycles? How can products be made from waste and how can we ensure their quality? – These are the questions for which we seek better answers every day.

In the future, markets such as the construction, energy or automotive sectors, which use highly complex composite materials, will be posing major challenges for the environmental sector. MUEG for instance has filed a patent for recycling the rotor blades of wind turbines – just one building block of our strategy for the future!

In the same way that natural resources are finite, landfill space is becoming increasingly scarce as well. What are the strategies society can use to face this challenge in the future? Ideas on how to recycle waste will no doubt have to be a big part of the solution.

The need to meet international directives on the removal of environmental damage within the European Union and beyond opens up more international markets for MUEG with its long years of project experience.

Picture: fotolia 104899251

Legioblock concrete blocks

Industrial train yard operated by MUEG in Lochau

Ash mono body in the residual cavity of the former surface mining pit Lochau

WHEN MERE DISPOSAL IS NOT ENOUGH

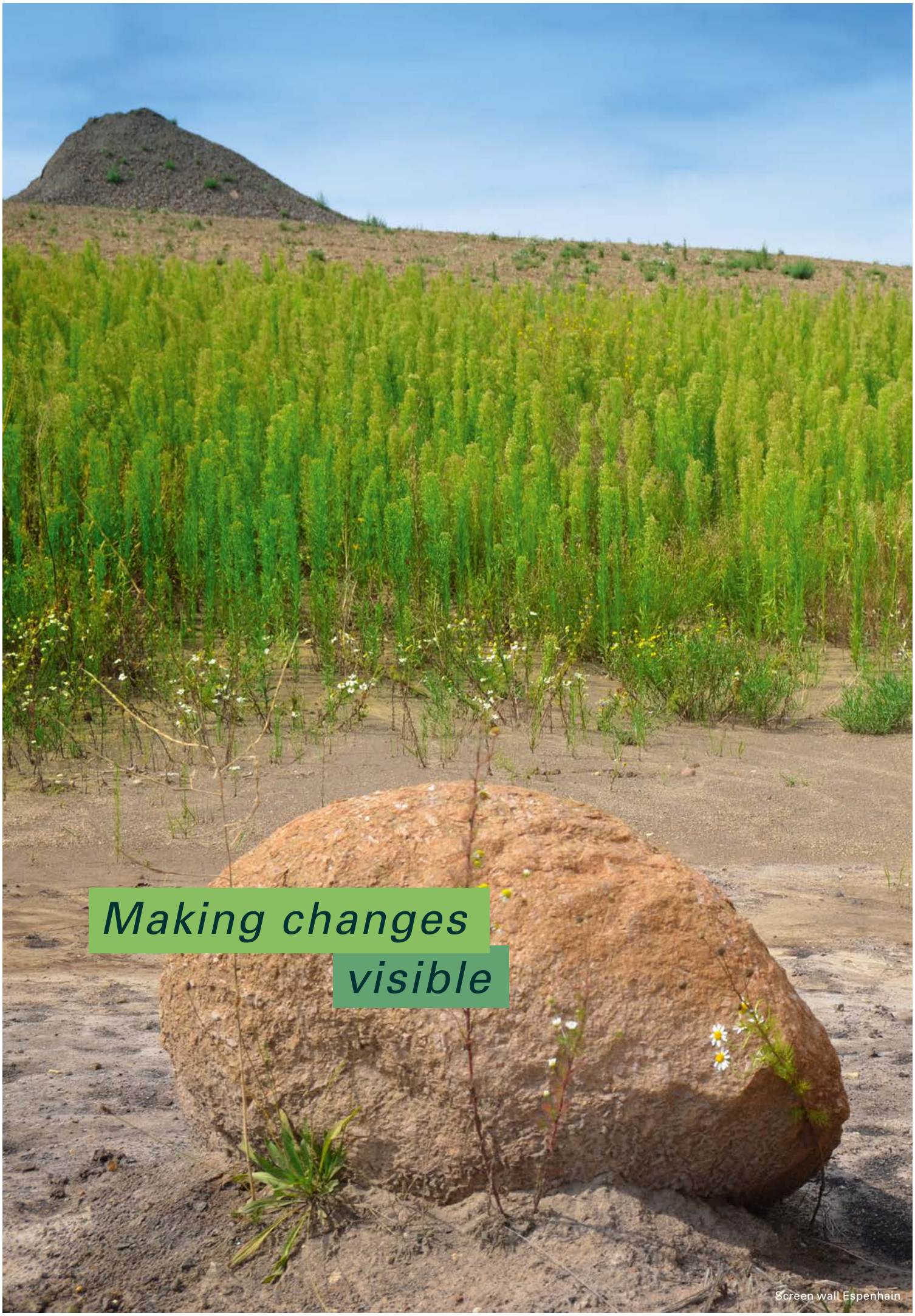
MUEG establishes disposal security for large-scale power plants.

For more than 20 years, we have been contributing immensely to the safe operation of power plants in Germany by recycling residual waste from such plants. The most important of the various residual materials we are able to utilise in our plants are filter ashes from large-scale power plants, wet ashes and FGD gypsum.

We treat ashes from incineration in a two-step process specially developed by ourselves. They are then used, for instance, for closing mining cavities, securing landslide-prone landfills or as construction material in road, path and dyke construction.

Additionally, applications in the field of conditioning acid tar-containing waste, soil conditioning and stabilisation of slurries have been realised by MUEG in projects.

Peres recycling plant, serving Lippendorf power plant



Screen wall Espenhain

FROM SURFACE MINING PIT TO LOCAL RECREATION AREA

MUEG remediates and recultivates residual cavities of former surface mining pits.

The focus of landfill and mining site remediation is on the sustainable and economical utilisation of mineral waste. MUEG uses this type of waste to close mining cavities, secure landslide-prone areas, design landscapes and recultivate post-mining landscapes.

A total of 1.5 million metric tonnes of mineral waste is recycled per year at our locations with five recycling and earth exchange sites. Mineral waste includes: earth, gypsum-based construction materials, building rubbish, roadway rubble from the construction industry, roadway construction or gardening and landscaping, as well as used sand, slags and ashes from industrial areas.

Composting in Asendorf


Construction of the Profen mineral waste landfill

The construction by MUEG of the DK I landfill in Profen Nord, with a landfill volume of 5.0 million cubic metres, contributes immensely to securing landfill capacities in Saxony-Anhalt for the coming decades.

The Asendorf composting plant takes on sewage sludge from municipal sewage treatment plants and regionally sourced green cuttings from park and garden waste and produces from these materials certified RAL-quality compost for use in gardening, landscaping and agriculture.

The construction of the screen wall for the Cröbern central landfill on the area of the former Espenhain lignite surface mining pit is an impressive example of the remediation and recultivation of residual cavities of former surface mining pits in our region. Three million cubic metres of mineral waste went into this screen wall, which is three kilometres long, 100 metres wide and 10 metres high.

Gypsum recycling: from waste to product

WE HAVE GYPSUM, GRAVEL, CRUSHED STONE – AND **IDEAS**


Gypsum-containing waste


Coarse-grained recycled gypsum


Fine-grained recycled gypsum

By consistently utilising recyclable waste and re-introducing it into the economic cycle, we do our part in sparing increasingly valuable resources and reducing CO^2 emissions.
Germany's first stationary gypsum recycling plant for the recycling of gypsum-containing waste was taken into operation by MUEG in 2014. The plant in Großpösna, to the south of Leipzig, has the capacity to treat up to 75,000 metric tonnes of gypsum-containing waste per year, so that it can serve the gypsum industry directly for the production of plasterboard and other gypsum-based products.
The technology used in the plant was developed in cooperation with several partners and has been consistently improved since its initial start-up. The treatment equipment installed has even made it possible to make a product that meets the high quality requirements of the Federal Association of the German Gypsum Industry.
Furthermore, we managed to constantly increase the share of gypsum that was usable. So far the process has impressed many highly interested partners from England, Japan, Australia, Austria, Scandinavia and other countries.

www.mueg-gipsrecycling.de

Other construction materials can be re-introduced to the material cycle, too.

Beside the recycling of gypsum-containing waste and concrete recycling, the treatment of track ballast plays an ever more prominent role for us. Soiled and discarded crushed stone is treated to produce a certified recycled material, and thus given a new lease of life.


Discarded crushed stone


Recycled crushed stone

Beuna fuel preparation plant

Roofing felt

FROM WASTE TO **FUEL**

Beuna fuel preparation plant – where waste is conditioned for thermal utilisation

Combustion plant, with flames and hot spot

Big bags

Many types of industrial waste are suitable for thermal utilisation. MUEG is following this path consistently. In the Beuna fuel preparation plant, various types of waste, such as roofing felt, acid tars, paint/varnish and tank sludges, are conditioned to produce, among other things, fuel. The fuel can be configured in a way to be compatible with the utilisation plant it is intended for. This makes fuels suitable for conventional lignite power plants, cement plants or industrial large combustion plants.
Our fuel preparation is subject to strict quality assurance, from input control in our own lab to the monitoring of heating value, lumpiness and moisture content of the prepared fuel.

Furthermore, MUEG has the know-how and plant equipment to treat waste for underground storage.

Our processes help to preserve valuable natural resources such as oil, gas and coal, which makes sense not just from an economic perspective, but also in terms of environmental protection!

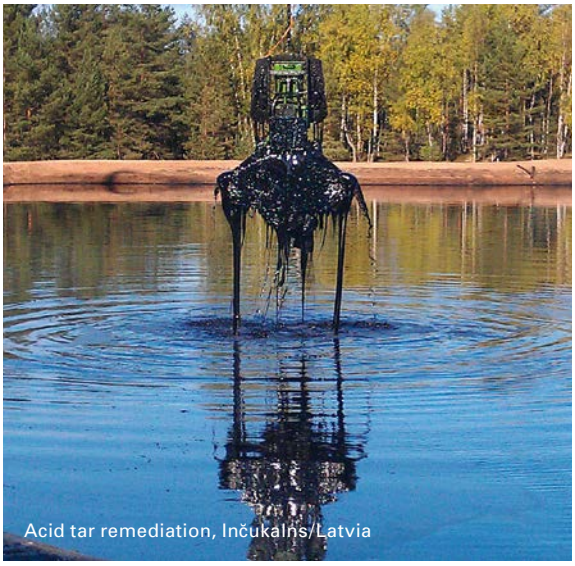
Our know-how for the environment

MARKET LEADER IN **ACID TAR REMEDIATION**

The plant and process were specially developed by MUEG.

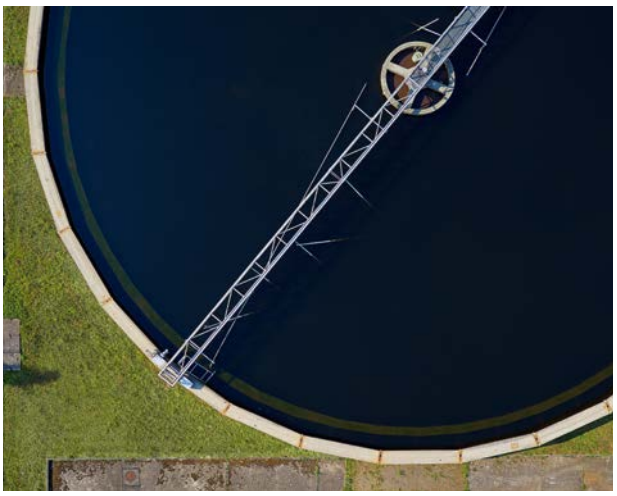
When it comes to remediating brownfield sites and contaminated areas, we have specialised particularly in the planning and implementation of acid tar remediation projects. Leading the European market in this field, our company has been able to successfully remediate more than 450,000 metric tonnes of acid tar and acid tar residues up to this point. Depending on the type and scope of contamination, we use well-proven existing processes and technologies and develop new specific processes for any given remediation project. The aim of any remediation project is to remove the environmentally harmful substances in an ecological and sustainable way, as efficiently as possible.

To achieve this, we tailor our planning and implementation to each project's individual requirements. When implementing environmental remediation projects, we go to great lengths to ensure that our work is ecological and resource-friendly and produces as little emissions and immissions as possible.


Acid tar remediation, Inčukalns/Latvia


Acid tar sampling, Norway

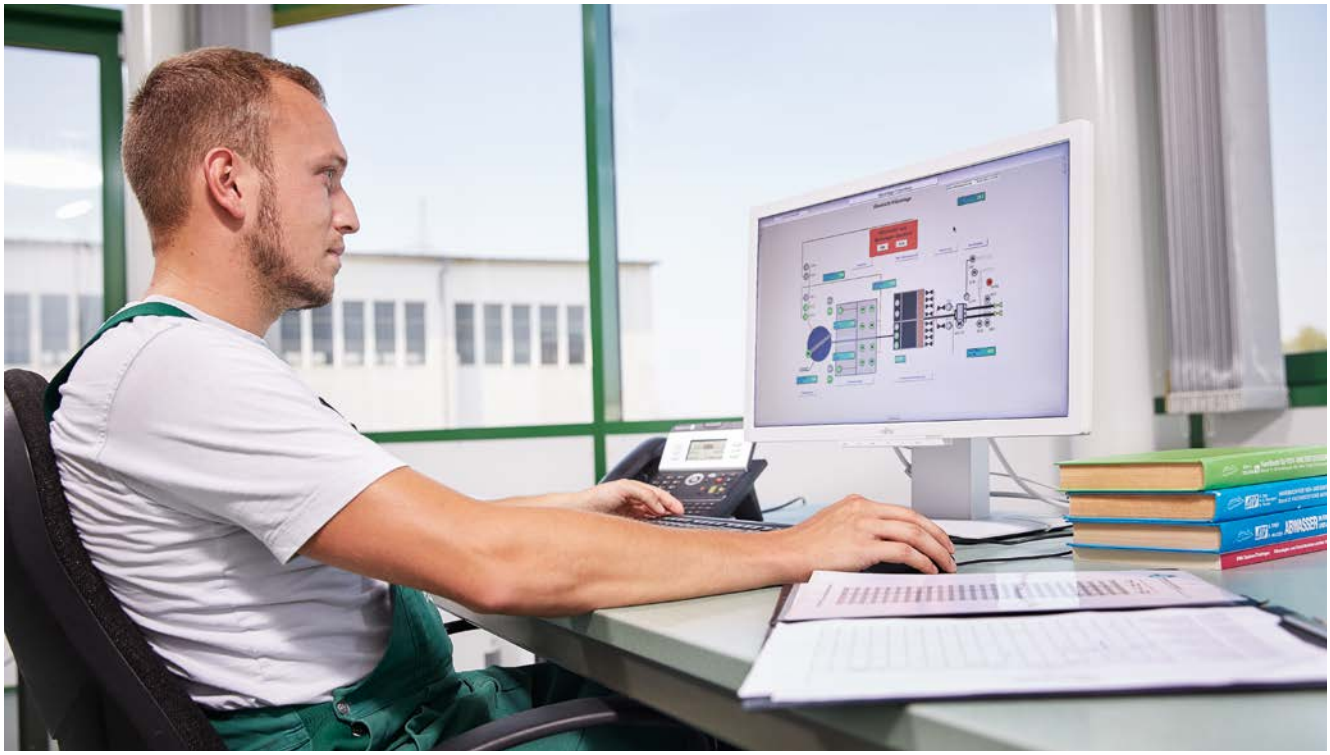
Waste water and more – let's clear this up



Waste water treatment in Espenhain

WASTE WATER
AS A RESOURCE

MUEG provides individual solutions for the treatment of municipal and industrial waste water.



Contaminated waste waters occur in all areas of industrial production, in the operation of landfills, in mining, as well as during remedial action. These waters need to be treated in accordance with legal provisions.
Our services include, among others:

- the treatment of groundwater and surface water in the context of environmental remediation,
- the mechanical-biological treatment of waste water, and
- the collection and treatment of industrial special waters.

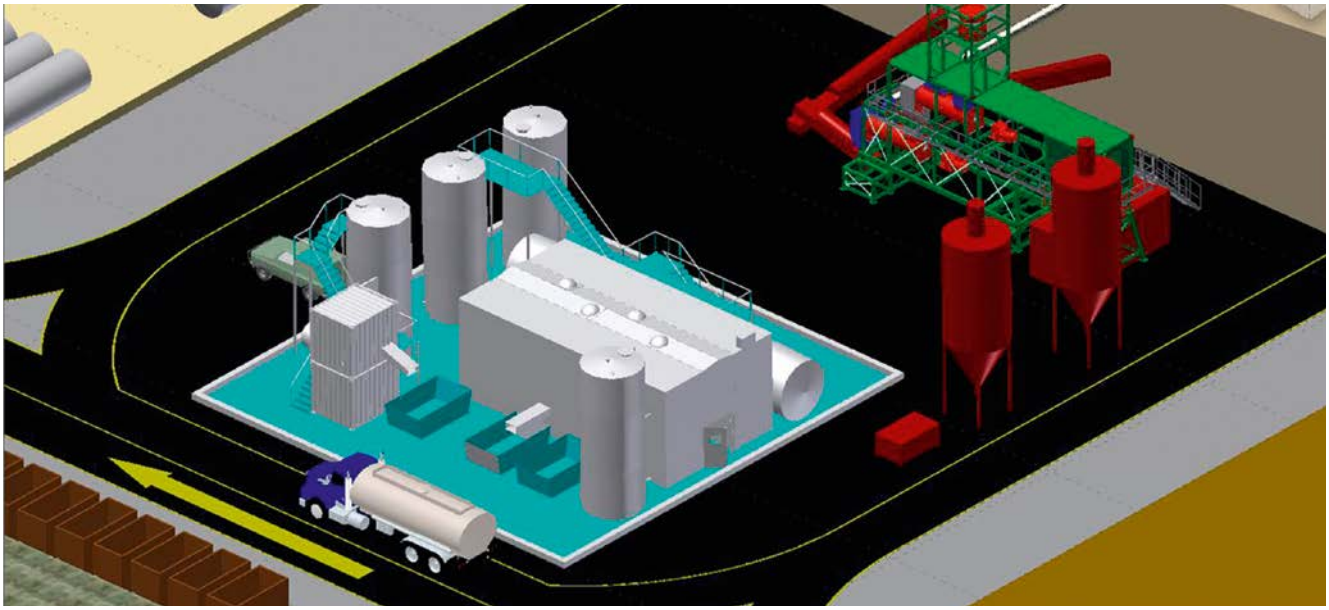
Our sewage treatment plant in Espenhain enables us to offer industrial clients mechanical-biological cleaning, eliminating phosphorus and nitrogen. Depending on the requirements, other treatment steps can be taken for pretreated production waste water.

MUEG provides client-specific concepts in the area of the industrial treatment of waste waters and for groundwater remediation projects.


MUEG
MUEG
Our ideas
are our
greatest asset!

TECHNOLOGY **ENGINEERING** DEVELOPMENT

MUEG accompanies your project from planning to execution.



Planning of a plant

TED represents the promise to find sustainable solutions of the highest quality, as well as comprehensive services in waste management, remediation and environmental protection.

Our experience in these fields is drawn from mining site remediation, the construction and operation of various recycling and treatment plants, as well as research and development projects. Based on this experience, TED can offer comprehensive planning, consulting and development services for various specialist fields.

These include:

- Planning of mining site remediation
- Technology and plant planning for waste treatment and recycling
- Feasibility studies and remediation concepts
- Risk assessments
- Landfill planning
- Approval planning and applications
- Environmental compatibility studies
- Preparation of management plans for plants subject to mining law

For all these services, our clients can rely on an experienced expert team of engineers and technicians.

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