

UGT LANDFILL PROJECTS



We are your partner for

- ✓ Individual consulting and customized design
- ✓ New installation of measurement sites
- ✓ Upgrading of existing systems
- ✓ Maintenance contracts

Your advantages

- ✓ Direct implementation of legal requirements
- ✓ Efficient measurement of as many parameters as possible with minimum effort
- ✓ Extensive automation of the measurement process
- ✓ Adaptation to individual requirements of landfills

With completed and ongoing projects at more than 40 landfills in Germany, UGT GmbH has many years of project experience in the field of various types of landfills.

For more than 20 years, there has been a close cooperation between UGT GmbH and *Wismut GmbH* for the securing and remediation of open pit mine tailings. The requirements of the waste rock piles have resulted in specialized products and extensive know-how that can be transferred to the landfill sector.

The same applies to the cooperation with *K+S Minerals and Agriculture GmbH* (formerly Kali und Salz GmbH). Over the years, product adaptations have been developed specifically for salt dumps to address the specific challenges of measuring in highly corrosive environments.



Landfill Emscherbruch, Germany



UGT-Product range

LANDFILLS

Measuring technology
for optimal planning
and monitoring



LANDFILL MONITORING

The right measuring technique for every question

Monitoring the functionality and performance of the surface sealing system is a crucial task during the operation and aftercare of landfills.

Through adequate monitoring with reliable measurement data, the functionality of all components can be ensured and unforeseen negative environmental effects due to leachate, surface runoff and out gassing can be detected early and remedial action can be taken.

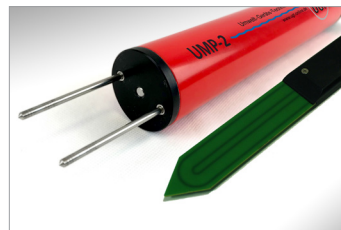
Umwelt-Geräte-Technik GmbH offers you the right measurement technology for any problem and many years of experience in the conception and support of measuring stations for landfills.

Soil hydrological measuring stations

-> Give conclusions on water transport, water storage capacity, sediment contamination



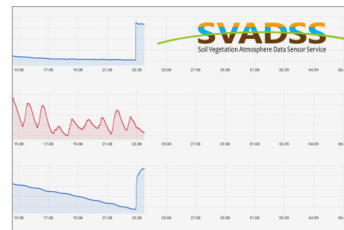
Conception and installation of soil hydrological measuring stations



UMP-2 (soil moisture, temperature, conductivity); SMT-100 (soil moisture, temperature)



Tensiometer for the measurement of soil water potential; Full-range tensiometer



- Remote data transmission
- Automated data processing
- Database system

Recording and sampling of surface runoff and seepage water

Tipping counter



Service shaft with tipping counter volumes from 0.1-30 l (Picture: Landfill Seehausen, Germany)



Measuring shaft with layered seepage water sampling and aliquot sampling (Picture: Landfill Profen, Germany)



For heavily variable drainage rates and chemically contaminated waters (Picture: Landfill Wüstendittersdorf, Germany)



H-Flume for non-contact run-off measurement via ultrasonic sensors (Picture: Landfill Langenlonsheim, Germany)

Flow meters and flumes



Planning

- ✓ Collection of hydro- and meteorological parameters
- ✓ Testing the suitability of various components / substrates of surface sealing systems



Risk analysis

- ✓ Evaluation of specific risks at old landfills
- ✓ Identification and quantification of seepage pathways



Follow-up

- ✓ Sizing, water balance and vegetation of the recultivation layer
- ✓ Proof of functionality
- ✓ Long-term monitoring of the environmental effects

Measurement / simulation of meteorological parameters

Weather station

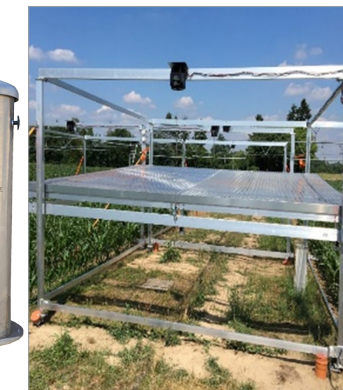


- Wind speed & direction
- Temperature, Humidity & Pressure
- Radiation
- Precipitation
- Solar panel
- Data logger & transmission technology
- Real Evapo-transpiration

Lysimeter



Mobile rain roofs, rainmaker



- ... for lysimeters or measuring stations
- Simulation of dry periods or heavy rainfall events
- Investigation of the impact of climate change on vegetation and water balance of the recultivation layer
- Control: automatic / manual movable / fixed

Weighable and non-weighable lysimeters

Application examples: Evaluation of the long-term function of the recultivation layer, function check of the cover layer, suitability evaluation of different materials.



- Weighing
- Seepage water collection
- Sampling of pore water
- Soil moisture
- Soil tension



- Non-destructive excavation of a soil monolith from the surface layer



- Installation of different soil types in lysimeter vessels with seepage water collection (Landfill Gunsleben, Germany)



- Surface lysimeter with seepage collection to assess the effectiveness of the cover layer (Landfill Beerwalde, Germany)