



TERRAnotion GbR
ENVIRONMENTAL CONSULTING





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TERRAnotion GbR characterizes an interdisciplinary service provider in the scope of environment, groundwater, and energy and provides a wide range of **geoscientific expertise**.

In terms of innovative and specified solution approaches, **TERRAnotion GbR** offers efficient system analyses, decision support conceptions as well as integrative data management services for a sustainable management of natural resources.



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The areas of expertise such as **HYDROGEOLOGY, GEOHYDRAULICS, GROUNDWATER MANAGEMENT, CONTAMINATED SITE MANAGEMENT, GEOTHERMICS, HYDROLOGY, HYDROMETRY, GEOLOGICAL SERVICES** and **DATA MANAGEMENT** represent the core competences of **TERRAnotion GbR**.

HYDROGEOLOGY

The evaluation of hydrogeological systems is linked to site-specific monitoring programs and/or the use of multidimensional numerical flow and transport models. Depending on the issue involved, the models can be hydraulic, hydrochemical, or also thermodynamic, while corresponding model couplings are generally possible.

TERRAnotion GbR can demonstrate experience in the following subject areas:

- **CONCEPTUALIZATION OF HYDROGEOLOGICAL MODELS**
- **HYDROGEOLOGICAL 3-D MODELING**
- **GROUNDWATER EXPLORATION SERVICES**
- **REGIONAL GROUNDWATER RESOURCE EVALUATION**
- **GROUNDWATER MONITORING & SAMPLING**
- **VULNERABILITY ASSESSMENT**
- **GROUNDWATER PROTECTION CONCEPTS**

GEOHYDRAULICS

The utilization of multi-dimensional numerical groundwater models in combination with representatively collected field data provides our customers with robust system analyses as well as reliable planning and prognosis instruments in all areas of inquiry. We conceive and execute case-specific measurement campaigns.

TERRAnotion GbR can demonstrate experience in the following subject areas:

- GEOHYDRAULIC CHARACTERIZATION OF POROUS, FRACTURED, AND KARSTIC AQUIFERS
- CASE STUDIES OF REGIONAL GROUNDWATER FLOW AND SOLUTE TRANSPORT PROCESSES
- NUMERICAL 2-D/3-D GROUNDWATER FLOW AND SOLUTE TRANSPORT MODELING
- DENSITY-COUPLED TRANSPORT MODELING (SEAWATER INTRUSION/ BRINE UPTAKE)

GROUNDWATER MANAGEMENT

An effective and sustainable groundwater management demands inter-disciplinary approaches and specified solution strategies. We provide you dependable exploration services and corresponding production and protection concepts as well as customer specific system solutions in the framework of water-related economical tasks.

TERRAnotion GbR can demonstrate experience in the following subject areas:

- **DELINEATION & MANAGEMENT OF GROUNDWATER PROTECTION AREAS**
- **VULNERABILITY ASSESSMENT**
- **GROUNDWATER EXPLORATION SERVICES**
- **GROUNDWATER BALANCE ESTIMATION**
- **DECISION SUPPORT SYSTEM (DSS) DEVELOPMENT FOR MANAGEMENT ISSUES**
- **OPTIMISED GROUNDWATER EXTRACTION/ ABSTRACTION DESIGN**
- **LAND USE OPTIMIZATION**

CONTAMINATED SITE MANAGEMENT

Contaminated sites characterize long-term deposits at former industry locations or industrially used areas where environmentally dangerous substances were handled and which can present dangers for the environment or human health. We contribute to the systematic processing of contaminated waste sites and develop directive approaches and concepts for danger prevention.

TERRAnotion GbR can demonstrate experience in the following subject areas:

- FORENSIC CONTAMINANT SOURCE IDENTIFICATION
- GROUNDWATER REMEDIATION CONCEPTS
- HYDRAULIC OPTIMIZATION OF REMEDIATION MEASURES
- FATE AND SOLUTE TRANSPORT MODELING
- HYDRAULIC BARRIER DESIGN
- GROUNDWATER MONITORING NETWORK DESIGN
- RISK ASSESSMENT

GEO THERMICS

In the context of renewable energy, the use of natural geothermal systems carries an enormous potential for energy production. Independent of fossil and conventional combustible materials, geothermal studies makes available a natural energy reservoir that guarantees provision of energy over long periods of time.

TERRAnotion GbR can demonstrate experience in the following subject areas:

- FEASIBILITY STUDIES
- GEOTHERMAL EXPLORATION SERVICES
- THERMOHYDRAULIC RESERVOIR MODELING
- GEOTHERMAL EXPLOITATION DESIGN
- PRODUCTION/INJECTION WELL TESTING

HYDROMETRY

Hydrometry is concerned with the quantitative determination of water related parameters of the system to be considered. Collecting representative field data constitutes a key role in system analysis and presents the essential basis for corresponding solution concepts. Data on surface water systems, groundwater and precipitation are collected, evaluated and visualized.

TERRAnotion GbR can demonstrate experience in the following subject areas:

- GROUNDWATER MONITORING (REFERENCE DATE MEASUREMENT, DATA LOGGING, MONITORING NETWORK CONCEPTION)
- GROUNDWATER EXPLORATION (TRACER-, INFILTROMETER-, PUMPING-, AND SLUG & BAIL TESTS)
- FLOW AND RUN - OFF MEASUREMENTS OF NATURAL SURFACE WATERS
- ESTIMATION OF SPRING DISCHARGE RATES

GEOLOGICAL SERVICES

Regional underground information systems as a planning basis for a sustainable management of natural resources provides a comprehensive and holistic tool for an integrated system monitoring and underground management. Therewith, the multidimensional geo-database approach provides a favorable spatial analysis of complex matters.

TERRAnotion GbR can demonstrate experience in the following subject areas:

- **STRUCTURAL 3-D MODELING**
- **OPERATIONAL PLANNING FOR DEEP-DRILLING PROJECTS**
- **GEOLOGICAL RESEARCH AND EXPLORATION**
- **UNDERGROUND MANAGEMENT CONCEPTS**

DATA MANAGEMENT

Data management combines management issues and technical solutions for storing, accessing and analyzing geo-spatial information. An efficient data management focuses the interfacing of geo-scientific data into specified business processes and will help to minimize the effort for the data processing and analysis.

TERRAnotion GbR can demonstrate experience in the following subject areas:

- DATA MANAGEMENT AND TRANSFER (DATABASE SYSTEMS, AUTOMATIC DATA TRANSMISSION, WEB-BASED DATA VISUALIZATION)
- GEOGRAPHIC & (HYDRO-) GEOLOGICAL DATABASE DEVELOPMENT, DEPLOYMENT AND MAINTENANCE
- MAPPING AND GEOGRAPHICAL INFORMATION SYSTEMS (GIS)
- SPATIAL DATA ANALYSIS, VISUALIZATION AND PRESENTATION

➤ The staff members of **TERRAnotion GbR** have professional experiences in the following countries:



Germany, Saudi Arabia, Egypt, South Africa, Namibia, Great Britain, Austria, Switzerland, Romania, and Brazil



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