

Press Release

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On a grand scale: Geothermal energy system for climate-friendly district in Frankfurt

- Bauer Resources completes large-scale geothermal probe system in eight months
- 160 geothermal probes installed at depths of up to 120 m and over 10,000 m of piping laid
- Challenging ground conditions required adjustments to drilling equipment
- Maintenance work included in the scope of services until 2029

Frankfurt am Main, Germany – By the time the climate-friendly neighborhood in Frankfurt’s Hilgenfeld district is completed, the team from BAUER Resources GmbH with its three drilling rigs will be long gone. It will be almost like they were never even there. “Almost” being the key word. What will remain is an impressive geothermal probe system that was installed on behalf of regional energy supplier Mainova AG. With seven distribution shafts, numerous pipelines and more than 50 m³ of brine, the system is impressive not only because of its scope: this is an exceptional project in many regards.

19,200 m drilled in eight months

Over the course of eight months, the three drilling teams from Bauer Resources completed their work on seven geothermal fields for the installation of the geothermal probe system. More than 19,200 m were drilled and a total of 160 geothermal probes from GWE GmbH were installed up to a depth of 120 m. “The grouting work in later stages took a particularly long time, since considerable extra quantities were consumed in some areas. This required precise coordination between the different parties involved in the project,” explains Site Manager Raphael Werner from BAUER Resources GmbH, adding: “To ensure optimal quality for the backfill material in the boreholes, we used a specially developed, magnetically marked and thermally improved slurry. After completing the drilling work, we inspected the seal with a magnetic probe to ensure that it was executed properly – this is how we achieve optimal groundwater protection.” The excavation work for the pipe trenches began simultaneously with the drilling work. Then it was time for the most arduous task: The experienced team laid more than 10,000 m of pipeline. Finally, the connections were established and the trenches were backfilled with soil. To fulfil the strict quality requirements, all work steps were painstakingly documented, construction materials were carefully monitored and the lines were regularly subjected to pressure tests. “Thanks to precise execution, we were able to move forward rapidly with the project,” continues the Site Manager.

Demanding soil conditions

The project is unusual not only because of its magnitude and the effort involved, but also because of the particular soil: The surface level of the 17.7 ha site is covered with glacial

loess loam. This is one of the most valuable soil types in the world. “For this reason, protecting the soil was a top priority. None of the construction vehicles were allowed to drive directly over the grounds. Instead, extra access roads were built and the soil was protected with wood chips and load distribution plates,” explains Raphael Werner. The deeper stone strata also posed multiple challenges: On the one hand, the drilling equipment had to be adjusted frequently because of the varying soil strata. Furthermore, flushing losses occurred unexpectedly. “Not an easy undertaking, but ultimately no problem for us. In some cases we flushed the boreholes differently, in some areas we adapted the casings,” remarks experienced Operations Manager Marcel Mößlang of BAUER Resources GmbH.

Where implementation ends, maintenance begins

Even after finishing the main work, there are some tasks left for Bauer Resources: Until 2029, the experts will take care of maintenance on the geothermal probe system including flushing, filling and fine-tuning. “In Frankfurt we are offering our full range of services, from design and execution to commissioning and even maintenance.” During the next stage, an innovative climate-friendly district will be constructed on the 17.7 ha site, which will serve as a shining example far beyond Frankfurt and Hessen thanks to the sustainable energy concept for heat and power supply furnished by regional energy supplier Mainova AG. This district, constructed by state residential construction company ABG FRANKFURT HOLDING GmbH, will house a total of 54 apartment buildings, 860 residential units as well as commercial spaces. “We will remember this project for a long time, because a geothermal energy system of this magnitude is rare – this is one of the largest of its kind in all of Germany,” says Marcel Mößlang in summary.

A **video** about the project is available at <https://youtu.be/iQqM7CY-Xbo>

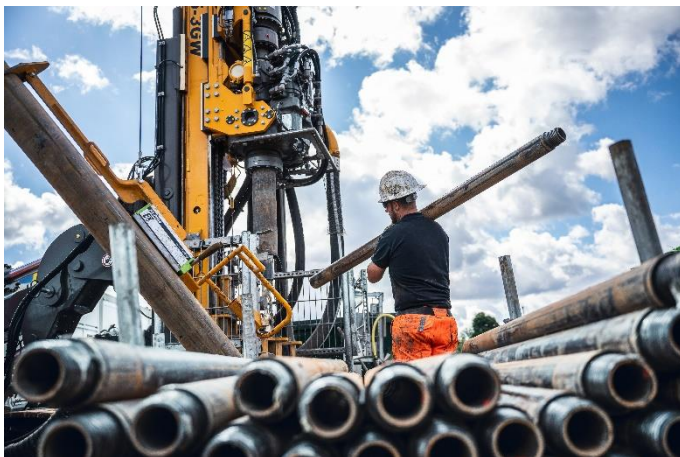
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(1) Bauer Resources constructed an enormous geothermal probe system for a climate-friendly neighborhood in Frankfurt’s Hilgenfeld district.



(2) The experienced team laid more than 10,000 m of pipeline.



(3) More than 19,200 m were drilled and a total of 160 geothermal probes were installed.

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About BAUER Resources Group

The regionally organized BAUER Resources GmbH is aligned to projects around the world with its subsidiaries in Germany, Africa, the Middle East and South America and has extensive expertise in the areas of drilling services and water wells, environmental services, constructed wetlands, mining and rehabilitation. With more than 30 years of experience, BAUER Resources GmbH's Bauer Umwelt business division is one of the leading specialists in site remediation, soil remediation and waste disposal, both in the domestic market and internationally. As an expert in pollution reduction, Bauer Umwelt offers a diverse range of services for all environmental issues. Other companies of the BAUER Resources Group are GWE GmbH, SCHACHTBAU NORDHAUSEN GmbH and SPESA Spezialbau und Sanierung GmbH. More at <https://resources.bauer.de/en>.

About Bauer

The BAUER Group is a leading provider of services, equipment and products dealing with ground and groundwater. The Group can rely on a worldwide network on all continents. The Group's operations are divided into three forward-looking segments with high synergy potential: Geotechnical Solutions, Equipment and Resources. Bauer profits enormously from the collaboration of its three business segments, enabling the Group to position itself as an innovative, highly specialized provider of products and services for demanding projects in specialist foundation engineering and related markets. Bauer therefore offers suitable solutions to the world's greatest challenges, such as urbanization, the growing infrastructure needs, the environment, as well as water. The BAUER Group was founded in 1790 and is based in Schrobenhausen, Bavaria. In 2023, it



employed about 12,000 people and achieved total Group revenues of EUR 1.8 billion worldwide. More information can be found at <https://www.bauer.de/en>. Follow us on [Facebook](#), [LinkedIn](#), [Instagram](#) and [YouTube](#)!