USA

TeraWulf

Turning a coal-fired power plant site into low-carbon digital hub

The challenge

Transform a former coal plant into a sustainable, high-capacity AI and HPC data centre while minimising environmental impact and leveraging existing infrastructure. The project required integrating advanced cooling technologies, meeting strict community standards, and ensuring compliance with environmental regulations. Additionally, the site needed to support rapid scalability for one of the largest low-carbon data centre developments in the US.

Our approach

Ramboll is partnering with TeraWulf to deliver end-to-end services across the full project lifecycle, including consulting, design, permitting, and commissioning. We're repurposing legacy transmission lines and industrial assets to avoid greenfield development and implementing direct-liquid cooling and closed-loop systems to reduce energy and water consumption. Our multidisciplinary team ensured compliance with noise and water stewardship standards while enabling efficient, low-carbon operations.

The result

The Lake Mariner campus operates on a low-carbon grid powered by nuclear and hydropower, with plans to integrate more renewable energy sources. The site has grown to over 360 MW of contracted capacity, supported by major investments like Google's $3.2 billion financial backstop and Fluidstack's multi-year colocation agreement. Ramboll's role positions us as a leading partner in sustainable data centre development, setting a benchmark for repurposing legacy infrastructure for the digital economy.

95%

Zero-carbon power mix. Lake Mariner operates primarily on nuclear and hydropower.

360+

MW – total contracted capacity at Lake Mariner, making it one of the largest low-carbon data centres in the US.