



EXEMPLIFYING EFFICIENCY

Success in efficiency is not without work, as many mines can certainly attest to. Warrior Met teamed with communications, tracking and data analysis-focused Innovative Wireless Technologies (IWT) to put in the work and achieve a remarkable result – one which it shared recently with NAM.

By Donna Schmidt

Warrior Met Coal, owners of the Mine 4 and Mine 7 assets, has taken its Blue Creek operations complex in Alabama and is creating a lower-cost yet highly efficient portfolio. Today, the longwall operations have a nameplate capacity of 7.3 million metric tons annually, and with Blue Creek, nameplate capacity is expected to be 12.7 million short tons annually. The company's recoverable reserves and resources, including adjacent properties the company has the ability to acquire are approximately 275 million metric tons – giving it at least 40 more years on the current mine plan to impress its industry contemporaries and even itself.

Mine 7 currently operates two longwalls, while Mine 4 currently runs a single longwall. All three active longwalls are equipped with advanced features which improve safety, horizon control, face alignment, dust controls, and the latest shield technology for partial automation. Additionally, the Brookwood-based miner drives down its costs and optimizes

its long-term performance by investing heavily in new equipment, routine rebuilds, and equipment upgrades. In 2024, in fact, the company spent approximately \$90 million in sustaining capital to upgrade and update critical equipment and supporting components.

THE JOINING OF WARRIORS

Warrior Senior Vice President of Engineering Philip Saunders told *NAM* the Blue Creek complex was a new mine start, allowing the opportunity for management to build its communications and monitoring systems from scratch. This permitted them to be very specific in their needs. Warrior is using the technology at one of its existing mines and used that insight to design the Blue Creek system.

“Our primary concern was safety – ensuring we had the right communication and monitoring infrastructure in place to protect our miners,” Saunders said. “At the same

time, we wanted a single system that would reduce time spent on system maintenance, rather than having multiple disconnected systems that didn't work well together."

Warrior had evaluated and used legacy systems at its other mines, but said they often required multiple independent networks for the major things like communication, tracking, and gas monitoring. That setup created additional maintenance work, since the team was responsible for multiple systems.

Bringing in IWT's SENTINEL™ system offered the chance for it to consolidate the most vital functions onto a single backbone and significantly cut down on maintenance time.

"That was a key benefit for us — less infrastructure to maintain, fewer points of failure, and a more streamlined approach overall," he said. Having those goals in place, the meeting of the minds was straightforward. Warrior management noted they really wanted a partner that could provide a system that works well but also can grow with the operation as it integrates more advanced technology.

"IWT had a strong reputation in the industry, and many of our miners and leadership team had previous experience working with their systems at other sites. We also took the time to visit mines where IWT's technology was already in use, which gave us confidence in their ability to deliver. What stood out was their willingness to work with us, tailoring the system to our specific needs, and ensuring we had a long-term solution that could grow with us," Saunders said.

To that end, Warrior Met was very deliberate about incorporating advanced technology into the Blue Creek Complex from the outset. They knew that a standard off-the-shelf solution was not the right option to meet those sizable goals; moreover, they wanted to build a system that would serve the mine well for years to come.

"IWT was a strong fit. They understood our vision and worked closely with us to design a system that wasn't just meeting today's needs, but is also adaptable for the future. The level of collaboration was unique in that sense; it felt like a true partnership, where both sides were invested in achieving the best possible outcome."

GETTING TO WORK

The pairing was in place, so the work could begin — and that work was going to be cut out for the both of them, as the addition of the system was a large-scale installation as part of the mine's development. IWT and Warrior worked in tandem from the early steps to finalize a design that would fit the mine layout as well as its operational requirements. The design work began in late 2022 and took about a month of engineering.

There was a solid timeline in place, and IWT worked within that framework, Warrior confirmed, with a detailed planning phase that ensured all components were on-site before the first tool was handled.

"Once installation started, things moved quickly. There were minor troubleshooting needs, as with any project, but nothing unexpected. IWT's team was responsive, and any issues were resolved quickly," he added.

Thanks in large part to thorough upfront planning, Warrior said the installation phase went smoothly: "Because it was a new mine, we also had some flexibility in how we integrated the system, which helped minimize disruptions," Saunders said.

RESULTS TO DATE

One of the biggest improvements Warrior reports seeing is

how real-time voice communication helps keep operations running efficiently.

"Coordinating people, equipment, and materials underground is always a challenge since visibility is so limited. Being able to see where everyone is in the mine and communicate instantly allowed our teams to adjust their plans on the fly and get materials where they need to be without delays."

The miner has also realized a noticeable difference in maintenance — technicians can troubleshoot and make repairs more quickly, reducing downtime.

When asked by NAM if there will be ongoing work with IWT for the mines in its purview, Warrior answered affirmatively.

"One of the more interesting developments is a project in Alabama where we're using their wireless environmental monitoring solution, Envök, to monitor for the potential of liberated CH₄ gas above current longwall panels at the surface level," Warrior's Saunders said.

"It's a challenging application because of the terrain and lack of cellular connectivity, but IWT's system has made it possible to collect and transmit real-time data across several square miles. Given its success, we see strong potential to expand this kind of solution to other areas in the future."

Warrior Met and IWT surely have a strong working relationship, if this case is any indication. Warrior management is looking forward to seeing what other collaborations are ahead, and Saunders noted that, with safety efficiency, and technology always moving and evolving, there will be plenty of opportunities to do so.

"We see IWT as a key partner in helping us stay ahead of those developments," he noted.

"It's also been encouraging to see how IWT continues to invest in the coal industry. While many vendors are exiting, they are still developing new products and advancing technology tailored to mining. That kind of commitment is important to us, knowing that we have a partner focused on long-term solutions for the industry."

IWT new business development manager Brad Hartwick concurred and said IWT is proud to be part of the future of Warrior and of mining.

"We've seen firsthand how our technology has improved productivity at other operations, and we're excited to bring these efficiencies to the Blue Creek complex. Warrior Met's dedication to innovation aligns perfectly with our mission, and we look forward to supporting them in achieving record production numbers while maintaining the highest safety standards."

BLUE CREEK MINING COMPLEX

Scheduled to commence operations in 2026, the development of the Blue Creek facility is presently advancing at a robust pace. With a promising reserve base of 69.8 million short tons of recoverable reserves and 49.5 million short tons of coal resources (excluding reserves), totaling a considerable 119.3 million short tons, the Blue Creek mine will provide access to one of the largest untouched metallurgical coal reserves in North America. The incorporation of this venture will foster economic growth and long-term career opportunities within the local community, but it would also contribute to global production for an anticipated half-century.