Leaning into Brownfield Constraints

Objective

Learn to manage having a charging bay that is not in the optimal location due to mine design constraints.

Justification

Initial recommendations for the location of the charging bay placed it in the middle of the haul route, allowing for regenerative charging down to the bay when the BEV battery is low. However, the charging bay had to be located at the top of the haul route based on the available real estate in the level.

Implementation

Constraints on available space resulted in the charging bay being located next to the maintenance bay where the dedicated Auto-BEV team and the Original Equipment Manufacturer (OEM) technicians were based. The charging bay location was also at a clean air raise.



A small satellite charging station was also installed at the haulage level, with an off-board high voltage charger but no battery swapping infrastructure.

Progress to Date

The main benefit realized was the short feedback loop created between operations and maintenance teams when the charging and maintenance bays were co-located, especially in the early stages of implementation when everyone was learning.

The immediate feedback loop helped accelerate learning, catch issues early and with implementing new strategies and solutions (such as the jib arms).

Now that the system is established the magnitude of the benefit is reduced, but having the immediate communication loop is still useful for troubleshooting performance issues.

The satellite charging station acts as a backup to help boost a low battery enough to get it back to the full charging bay for a swap.

> "It was a boon to that early implementation, when our technicians were learning, when our operators were learning, when our supervisors were learning"
>
> *Superintendent for Production and Construction*

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