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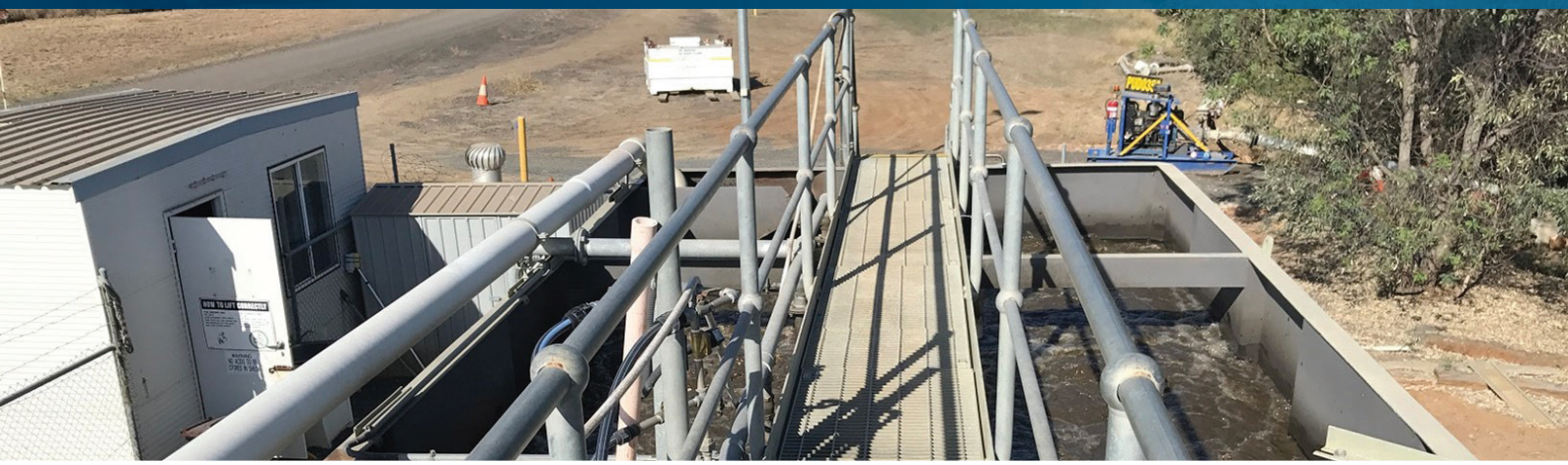
SIXTH ROADTRAIN® PACKAGED PLANT PUT INTO SERVICE FOR BHP BLACKWATER

CASE STUDY



Repeatable success for BHP Mistubishi Alliance (BMA) has been proven yet again with the sixth welded Roadtrain® installation on the Blackwater lease since 1978.

The 45m^3 / day plant treating sewage from the central office, once again demonstrates:

- Ease of operation in challenging physical environments.
- Long term economic benefits from robust construction.
- Set and forget capability.

The Roadtrain® treatment system included:

- Aeration
- Clarifier
- Chlorine detention

The plant is based on the intermittent aeration treatment process.

The incoming sewage is aerated in the aeration tank. During the aeration phase the bacteria enter an aerobic state to oxidise the carbonaceous pollutants. When the blowers cycle off the tank enters into the anaerobic state and bacteria convert nitrites to nitrates.

Mixed liquor is decanted from the tank via a control float and discharged into the acquiescent zone of the clarifier where treatment is split into a sludge train and an effluent train.

For the sludge train, suspended solids settle out of solution into the bottom of the hopper to be airlifted back into the aeration tank to seed active bacteria into the biological treatment process. Once per week sludge is decanted out of the base of the hopper for disposal to maintain a vibrant biological community. Scum is also skimmed off the top of the clarifier and returned to the aeration tank for further treatment.

For the effluent train, effluent is decanted off, behind a scum baffle, via the effluent weir trough and discharged into the chlorine detention tank where chlorine is dosed and mixed with the effluent for discharge into the local aquatic environment.

In the mining environment, with regular crew rotations, having six Roadtrains spread across 40km of mine lease means operators only need skills, maintenance and testing regimes for one style of process system.

As mining operations have migrated along the coal seam so to have facilities. To this end, the robustness and ease of relocating the Roadtrain® has provided significant economic benefit through reusing instead of replacing the asset over time.

At the far end of the lease, in a disused site, one Roadtrain® runs in isolation as a treatment plant for crib hut ablution waste from sites along the southern end of the lease. This plant is truly set and forgotten only to be inspected once a week.