



OREPATH MINE SIMULATOR



REALITY DRIVEN SIMULATION FOR BETTER MINE DECISIONS

LOAD & HAUL · TRAFFIC · VARIABILITY

WHAT IS SIMULATION?

A simulation is the imitation of a real-world process, system or sequence of events. Simulations aim to show a predictive state of an asset or system, under configured constraints to accurately predict the future performance of a system.

NOT JUST A POINT-TO-POINT CALCULATOR

Conventional haulage modellers act like point-to-point calculators due to abstraction of traffic. **Orepath's Mining Simulator** models traffic lanes, vehicle interactions, congestion, equipment constraints with stochastic performance — answering questions that static schedules cannot.

REALITY DRIVEN FOR ACCURACY

Holistically simulated mining operations with complete haul cycles, traffic lanes, congestion and breakdowns

INTUITIVE WORKFLOW

Intuitive workflow for setup and diagnosis of bottlenecks, congestion, equipment constraints & the haulage network

UTILISE PROBABILITY & VARIABILITY

Variability through stochastic multi-seed runs and effectiveness of operational strategies or mining methods

CAPABLE & READY FOR OPERATION

Applicable across 12-48hr planning horizons with support for heavy automation and optimisation



FROM PRE-SHIFT TO NEXT SHIFT

A single model covers the window a planner actually works in. Re-run simulations with automated routines to continuously observe and optimise.



T-12H

VALIDATE THE PLAN

Daily plan, blend, stockpile balance and maintenance schedule feed the simulator. Test against live fleet state before it hits the pit.



T+0

DISPATCH WITH A RANGE

Provide supervisors achievable targets under traffic and breakdowns — not a single-point schedule number.



MID-SHIFT

RE-PLAN ON EVENTS

Loader down, road conditions, weather. Generate scenarios to optimize by source/destination and pick by productivity, conformance or fuel objectives.



T+24-48H

HOLD THE NEXT WINDOW

Park-ups, charge / fuel bays and blend decisions stay coherent across the following shifts.



FLEXIBLE, CAPABABLE, OPERATIONAL

Built for the 12–48 hour window. The same engine later extends to weekly and monthly horizons.

PREDICT

Simulate 1–4 shifts with traffic, weather and breakdowns.

Read achievable tonnage as a stochastic range.

Give supervisors a number they can defend at handover.

SAVE

Trade off fuel / charge bay placement this week.

Test park-up and blend decisions before they lock.

Avoid building or railing the wrong sequence.

DE-RISK

Flag congestion early to remediate roads & intersections.

Revise mining & blending strategy before it costs the shift.

Catch underperformance while there is still time to act.



WHY OREPATH

BUILT FOR REAL OPERATIONS

Developed for a Tier-1 miner and refined through live client projects. Not a generic academic model.

FULL SYSTEM VIEW

Models the interaction of trucks, loaders, roads, grades, fuel/charging and dispatch logic as one coherent system.

EVIDENCE, NOT OPINION

Stochastic multi-seed results give quantifiable ranges instead of single-point estimates — the language boards and OEMs understand.

INTEGRATED WITH ADVISORY

The same team that runs the simulator also delivers studies, due diligence and secondment. Simulation informs strategy; strategy informs simulation.

REQUEST A DEMONSTRATION

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GET IN TOUCH