THE AUSTIN ADVANTAGE

E*STAR BOOSTS DAILY OUTPUT BY 70% WITH 15% LOWER FUEL USE

GENERAL **INFORMATION**

Location: Chihuahua, Mexico

Industry: Limestone Quarry for cement, concrete and agreegates

Products Used: E*STAR Electronic Initiation System, Paradigm

Project Leads: Erick Trejo, Sales & Technical Service Representative, and Ricardo Medina, Modeling Projects Coordinator

THE **HISTORY**

For more than 80 years, this company in Chihuahua, Meixco has built a legacy as a leading producer of cement, concrete, and aggregates across northern Mexico and the southern United States. As part of its ongoing commitment to operational excellence, they continually seek opportunities to strengthen thier mining operations through innovation and enhanced safety practices.

THE **GOALS**

1. Enhance on-site safety by reducing personnel exposure to traditional initiation systems.
2. Improve blast precision and fragmentation outcomes to optimize downstream efficiency.
3. Minimize social and environmental impacts, especially in nearby communities.
4. Boost overall productivity through better blasting performance and reduced operating costs.

CUSTOMER **CHALLENGE**

Prior to adopting E*STAR, the company relied on conventional initiation systems, which posed several limitations:

- Exposure risks for personnel, due to safety fuses and manual handling in the use of safety fuse.
- Inconsistent fragmentation, leading to secondary breakage, inefficiencies in mucking, and higher energy use in crushing.
- Elevated vibration and noise levels, causing potential disruptions in surrounding areas and social pushback.
- Limited flexibility in timing, restricting the ability to model and test optimized delay patterns.

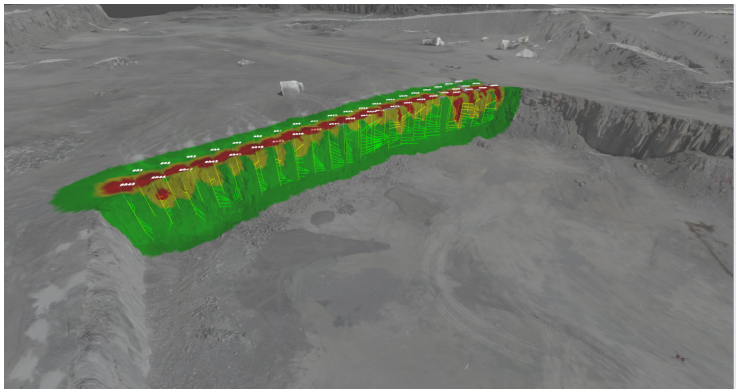
The company required a system that could address these challenges while aligning with its values of innovation, safety, and sustainable growth.

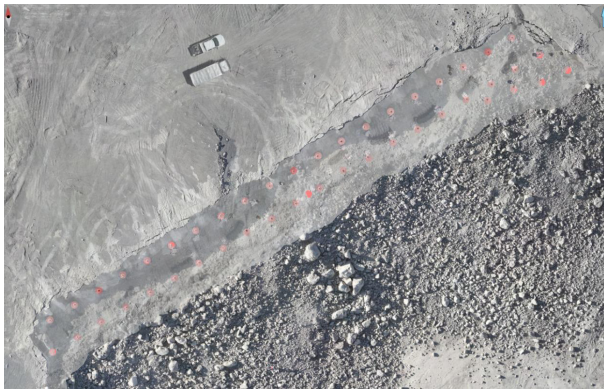
THE **AUSTIN** SOLUTION

With technical support from the Austin Powder Mexico (APM) team, the company implemented the E*STAR electronic initiation system, supported by advanced blast modeling through Paradigm software. Key elements of the solution included:

- Advanced design modeling to predict and control vibration and fragmentation using field data.
- Two-way communication and in-field verification between detonators and the blast box, significantly reducing misfires and enhancing safety by reducting the risk of misfires.
- Flexible delay programming to tailor blasts for optimal muckpile shape and wall stability.
- Strategic stakeholder engagement to align the project with both operational and community expectations.

This milestone project marks a strategic leap forward for the companys mining operations. By integrating E*STAR and Paradigm, they have reinforced their reputation as an industry leader in precision blasting, safety, and sustainability.





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THE **OUTCOME**

The company's successful rollout of E*STAR has delivered measurable benefits:

Improved Safety

- Eliminated the use of safety fuses, reducing direct exposure to initiation hazards.
- Achieved higher confidence in blast reliability with reduced signal cut-offs.

Superior Fragmentation

- More consistent muckpiles and better blast geometry and improved granulometry
- Decreased need for secondary breakage and hammer use.

Lower Environmental and Social Impact

- Precisely controlled delays led to reduced vibration and noise, strengthening the company's position as a responsible neighbor.

Increased Productivity and Cost Savings

- The E*STAR system produced significantly more material per day—an increase of over 70%, demonstrating its strong impact on throughput.
- Despite the higher production output, fuel consumption per hour decreased by about 15%, indicating greater operational efficiency per ton produced.

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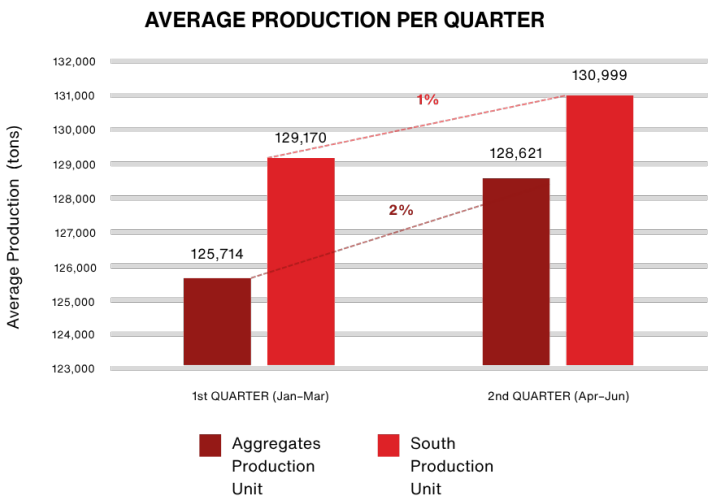

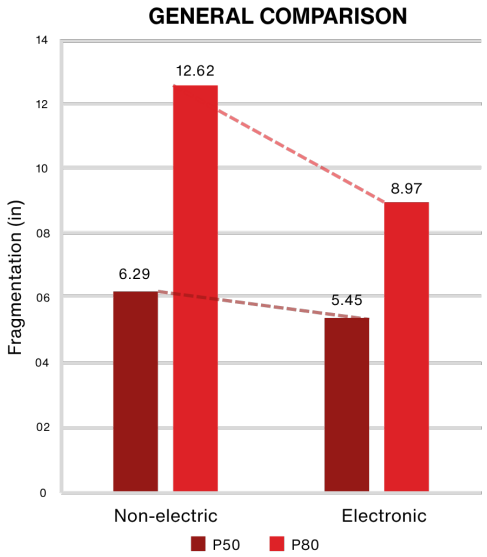

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