



A bird's eye view of Boral Dunmore Quarry.

THE NEW TECHNOLOGY THAT SAVES TIME IN A BOOMING MARKET

For a large quarrying operation, achieving consistent quality blast outcomes to vibration, safety and environmental parameters saves time and money. James Dampney outlines how blasting solutions provider Orica has helped Boral Dunmore achieve blasting improvements through integration of its Blast IQ suite of technologies.

Boral's Dunmore Quarry is near the seaside township of Kiama, on the South Coast of New South Wales. It is one of the most important hard rock resources operating in NSW. The site has been supplying building and construction materials for projects across the Illawarra, South Coast and Sydney metropolitan areas for more than 90 years.

In more recent times, the quarry has provided a significant volume of aggregates into the Sydney metropolitan area for the NSW Government's large-scale program of booming public infrastructure works.

As a long-term partner of Boral Dunmore, Orica works closely with Boral's operations and production teams, providing blasting expertise, secure and flexible supply and a range of blasting technologies. This includes integration of Orica's Blast IQ system within the drill and blast process.

Orica's Blast IQ technologies have supported Boral Dunmore in achieving consistent quality blast outcomes and blasting within the site's environmental limits. The blast crew uses technologies with in-built access to design, automated loading rules and efficient capture of auditable data from the bench. Exception reports are generated to provide better visibility to manage blast quality control.



An Orica mobile manufacturing unit on site at Boral Dunmore.

The Blast IQ technologies adopted by Boral include Orica's SHOTPlus blast design package and the DIPPlus in field data capture tablet for drill hole quality assurance/quality control and vibration monitoring and prediction. The Blast IQ web portal integrates this data to an online destination for increased visibility and collaboration, and ultimately faster data driven decision making for drill and blast improvements.

CUSTOMISED WORKFLOW

The Blast IQ portal also provides a customised drill and blast workflow designed for Boral Dunmore's specific needs. Boral and Orica's teams can view completed stages of the process, and store and access blast records including photos and videos. All information can be accessed online and remotely on desktop PCs, tablets or mobile devices.

Boral Dunmore and Orica share safety as their number one priority. "My team has been working with Orica to ensure processes are as safe as can be," said Brodie Bolton, Boral Dunmore's production manager. "In the case of blasting, quality control is fundamental to both safety and achieving downstream production benefits."

The addition of the Blast IQ suite of technologies has supported the safety of Boral's blast operations. Blast quality control is aided by teams being able to follow customised blasting workflows online via the Blast IQ web portal. Other elements of blast quality control supported by this technology include field tablets capturing drill hole condition prior to blasting, and blast vibration limits being predicted and measured.

Stuart Mclean, Boral Dunmore production supervisor, said Blast IQ was a great tool that allowed "the team to create a blast and upload information that the engineers and the surveyors will need before they come to site. All information can be easily shared for more collaborative decision making. This also extends to designing blasts within critical environmental limits. Engineers can design a blast and receive a vibration prediction online, so that blasts can be created for maximum outcomes while staying within vibration limits."

Orica's environmental monitoring technology has allowed Boral Dunmore to accurately predict vibration levels, ensuring blasting outcomes are not disrupting the quarry's close neighbours. The model uses ground signature waveforms and advanced techniques to provide access to leading edge modelling capability. Multiple designs can be modelled using changes in explosives charge weights, blast orientation or blast initiation sequences, to allow comparison of predicted outcomes.

In addition to integrating the Blast IQ system, teamwork and flexibility of supply have been critical to success. Orica's specialist quarry team has provided necessary blasting expertise during quarry planning processes, which is particularly important as Boral approaches the edge of its quarry boundary. Orica can service Dunmore from multiple depots, allowing highly responsive supply during its changing needs.

Blasting occurs once or twice a week at Dunmore, greatly supported by the range of technologies and expertise provided by Orica. This



Orica blast surveyor Cameron Ingles uses the GPS Rover on a bench at Boral Dunmore.

has been a key component in helping Dunmore meet its production needs.

Boral Dunmore recently received approval to extend its quarry boundary and will continue to work with Orica's team and technology in the next phase of its operation.

To learn more about how Orica and Boral Dunmore are working together, watch the video case study at orica.com/blastIQ •

James Dampney is Orica's Blast IQ marketing manager for Australia, the Pacific and Asia.



Orica's senior blast technician Jonathon Keller illustrates Blast IQ on a tablet to Boral Dunmore's production manager Brodie Bolton (foreground).



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