

# Media Release

20 November 2009



[www.quarryacademy.com](http://www.quarryacademy.com)

## The 2009 Quarry Academy: *Go Beyond the Iron*

'Counting each ton and making each ton count' is a mindset required in today's difficult economy to minimize costs and maximize profits. With the radical shift of the market environment, special emphasis at this year's Quarry Academy was given to balancing unit operations with total process outcomes while maintaining standards of safety and best practices.

The curriculum for this year's Quarry Academy ([www.quarryacademy.com](http://www.quarryacademy.com)), held November 2-5<sup>th</sup> in Atlanta, GA, not only addressed critical processes within the quarry operation, but also focused on the relationship between each process, how these processes systematically interact with one another and how they can be linked to improve overall operational improvement.

Quarry Academy is one of the derivatives of a working technical alliance between Sandvik Mining and Construction and Dyno Nobel. Sandvik's Training Center in Atlanta, Georgia hosted this year's Academy and marked the fourth time quarry owners and managers have gathered to learn how to make their operations more efficient, more profitable, and more competitive.



Class presentation at Sandvik's Training Center in Atlanta

The 2009 Quarry Academy offered customers interactive classes and workshops on a variety of topics taught by a team of 10 subject matter experts, each with more than 20 years of industry experience in quarry and mining operations around the world. The focus was not on Sandvik or Dyno Nobel products but, rather, on the processes within the quarry operation that drive productivity and improve efficiency.

The 2009 Academy program was entitled *Go Beyond The Iron*. The three-day program kicked off with introductory remarks from John Watson, General Manager / Marketing – Dyno Nobel, "The Quarry Academy is all about our customers and the issues they face today as well as in the future. We know for certain that the old approach of 'silo' costing isn't effective; that is, thinking of drilling, blasting, crushing, sizing, loading and hauling as separate activities. Instead, each is part of a total value chain and the key is to attain the optimal cost zone."

Aaron Berg, Director of Consulting – River Logic Inc., supported the value chain approach and said, "It's not about lowest cost at every step, but the overall profitability. There is an optimal intersection of a quarry's capabilities and what the market demands. Knowing exactly what to



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make is frequently more difficult to understand than operators think. The key is setting up the 'stone production value chain' to make less waste product and more value added materials."

One of the largest areas of cost reduction for quarry operators is understanding the key controls and levers of crushing equipment to reduce waste, lower energy consumptions, and optimize productivity of your crushers, pointed out Dr. Magnus Evertsson - Chalmers University of Technology / Sandvik Mining and Construction – Europe. Magnus said, "Setting up and managing the crusher for optimum performance is critical for waste and energy reduction. Quality control and influencing product output at each stage of crushing becomes the key to leveraging income for quarry operators."

One of the biggest untouched opportunities is leveraging the drill and blast stage to accomplish chemical crushing that can yield significant gains in productivity and process economy.

Academy attendees were introduced to a virtual dynamic model of crushing and screening plan utilizing Sandvik's state of the art PlantDesigner® software where operations managers can use the model to check for mass flow, spot bottlenecks, see problems, run what ifs, and optimize plant designs.

Critical to financial efficiency is the ability to see quarry operations in the context of our current economy and find previously untouched areas of opportunity to gain advantage. One of the biggest, untouched opportunities was addressed by Bill Hissem (Sandvik) and Larry Mirabelli (Dyno Nobel). They jointly delivered a real world case study to demonstrate how drilling and blasting can be used not only to take the bench apart safely, but also leveraged to accomplish chemical crushing to yield significant gains in productivity and process economy.

Further, today's operators need access to timely (and correct) data about their drilling and blasting programs to ensure adequate process controls are in place and information used to manage the process and meet regulatory demands. Jeff Averett, IT Project Engineer / Dyno Nobel provided an overview of various tools that are available to electronically collect, store and manage data. His presentation focused, in particular, on those database and design tools used by Dyno Nobel to provide information analysis and trend reporting to customers.

As fuel and energy costs rise, the need to plan and manage the loading and haulage of rock will become critical to control production costs. Hakan Gufstafson - Volvo Construction Equipment, presented the attendees with a comparison of haulage truck options and reviewed rig payload capacity, fleet size and matching with load out equipment. He pointed out that as property deposits are developed, haulage distances and grades increase. He said, "The effect of ground and road way conditions, grades, haul road turn radius geometry and other factors need to be understood in the context of their effect on productivity and cost of operation." David Nus, also from Volvo Construction Equipment, presented



Hakan Gufstafson & David Nus,  
Volvo Construction Equipment



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a section on loading and contrasted the principal alternatives of rubber tired loaders, back hoe excavators, and hydraulic front shovels. And finally, Martin Mattsson, Volvo Construction Equipment, used a software simulation program to demonstrate production dynamics and economics based on actual Kennesaw Quarry haul road distance and grades using GPS terrain logging technology. He pointed out the value in creating "What if" scenarios that can evaluate road and site-induced dependent variables and then comparing and matching the proper equipment.

A feature of the Academy was an interactive feedback mechanism (or clicker) that allowed attendees to respond to questions posed on a number of subjects throughout the Academy and answered in real-time. In addition, time was set aside for focus groups where attendees were able to share their thoughts with industry experts.

In addition to classroom presentations, attendees received hands-on training using Sandvik's state-of-the-art drill training simulator and participated in workshops and field trips. Vulcan Materials Kennesaw Quarry hosted this year's on site visit which included four different workshops and demonstrations: Signature Waveform Data Collection; Drill Deviation Control & Measurement review; Crushing; and Electronic Detonator technology.



Attendees learn about seismic waveform analysis



Attendees take a close look at the cone crusher



Demonstration blast using electronic detonators



Introduction to drill deviation control & measurement



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A highlight of the three day course was the key note address by legendary NASCAR driver, team and racetrack owner, Kenny Schrader, who talked about his high performance teams and growing up in the industry. He highlighted safety technology as one of the standout improvements over the years that has made a significant contribution to the sport. Kenny brought his Number 52 stock car sponsored by the Quarry Academy, Sandvik and Dyno Nobel, among others.



Quarry Academy attendees not only got “up close and personal” with Kenny and his high performance car, but were also able to enjoy “touching” some of the latest drill and blast equipment technologies thanks to Sandvik and one of Dyno Nobel’s bulk explosive truck suppliers, Tread Corporation (Roanoke, Virginia).

Jeff Heinemann, Vice President / Construction Segment said, “The common thread heard throughout the Academy was, ‘It is competitive out there.’ And that’s the reason we need to use lean thinking and technology to reduce cost and remain competitive. Our instructors were the best of the best with many years of combined dedication to the industry from Dyno Nobel, Sandvik, Volvo and River Logic. They covered a range of topics in the value chain. I have no doubt each attendee will take away one item that, once implemented, will make their operation more profitable.”

By sharing best practices and by listening to customers, Dyno Nobel and Sandvik will be able to better serve their customers. Alex Scott, Regional Manager, International Product Support / Sandvik Mining and Construction, summed up the three day course by saying, “It’s really about understanding the complete value chain and getting control by monitoring your operation on a regular basis.”

Dyno Nobel and Sandvik plan to continue this annual educational event and have already begun making plans for next year’s Academy using this year’s Alumni feedback. To date, the Quarry Academy has graduated over 250 students in North America.



Field trip to Vulcan's Kennesaw Quarry



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## Background

**Dyno Nobel** is a leading supplier of industrial explosives and blasting services to the mining, quarrying, seismic and construction industries. Dyno Nobel is the market leader in North America - the largest explosives market in the world - and the second largest supplier in Australia - the third largest explosives market in the world. Dyno Nobel traces its roots back to Alfred Nobel, the inventor of the detonator and dynamite, and, since the 1920s, has focused on the commercial development of industrial explosives.

Dyno Nobel employs more than 3,300 people and has 36 manufacturing facilities in Australia, Canada, the U.S. and Mexico. Dyno Nobel has a market capitalization of approximately AUD2 billion. Dyno Nobel is renowned for its excellent safety performance and as a provider of innovative explosive products and services which, together, deliver groundbreaking performance for its customers.

## Sandvik

Sandvik is a global industrial group with advanced products and world-leading positions in selected areas – tools for metal cutting, machinery and tools for rock excavation, stainless materials, special alloys, metallic and ceramic resistance materials as well as process systems. The Group had at the end of 2008 about 50,000 employees and representation in 130 countries, with annual sales of more than SEK 93,000M.

Sandvik Mining and Construction is a business area within the Sandvik Group and a leading global supplier of machinery, cemented-carbide tools, service and technical solutions for the excavation and sizing of rock and minerals in the mining and construction industries. Annual sales 2008 amounted to about SEK 38,700M, with approximately 16,800 employees.



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