by Tina Grady Barbaccia, Senior Editor

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Learning about Aggregates and the Environment

National Minerals Education Conference teaches educators about the role of mining in sustainable development.

Participants from the nation's top aggregates companies attended the 2005 National Minerals Education Conference, held June 12-15 in Tucson, Arizona. Each year, the conference attracts members of the mining industry and teachers seeking minerals-related information to share with their students.

This year, however, the conference expanded its traditional metal mining program to include non-metal curricula and tours. Representatives from Vulcan Materials Company, Martin Marietta Materials, and Hanson attended the seminar. *Aggregates Manager* attended the conference as well. Plant tours were held at Arizona Portland Cement's quarry and cement facility and Rinker Materials Company's Cortaro plant and adjacent golf course — the result of reclamation activities on the plant's former site.

In keeping with the conference's theme of sustainable development, teachers attended a number of seminars about how resource development and environmental issues can be balanced. The always-popular "Chocolate Chip Cookie Mining" experiment was enhanced with costs and savings tied into sustainability. Miners had to invest in up front costs for social issues, but were rewarded at the end of the development for those costs and for how well they carried out reclamation planning.

Photo by Steve Trussell

Conference attendees selected one of four plant tours, including Arizona Portland Cement's quarry and plant tour.

Jim Pacek, education programs coordinator for the Arizona Foundation for Resource Education, reviewed a new poster that the foundation developed jointly with the National Energy Foundation. Titled "Exploring Natural Resources and Their Uses," the poster includes sections on rocks and minerals as well as mining. On the back of the poster, a four-week unit, targeted for middle school students, details how the poster can be used to enhance science and social studies.

According to Pacek, it is based on the Understanding by Design, or UbD, framework. "If you identify what you want students to know and to be able to do, it increases the likelihood that it will happen," Pacek explains. After determining those goals, educators then work backward to determine how to assess student progress and, finally, what experience and sequence would be used to teach students.

At Caterpillar's Tinaja Hills, Arizona, training facility, conference attendees participated in an interactive simulation on sustainable development principles through the life cycle of a mine and viewed a laser light demonstration that included synchronized choreography of its equipment.

Before wrapping up the seminar, a former teacher, Paul Guerino, provided a set of slides and rock samples for teachers to use in developing a standards-based course for their classrooms.

According to conference organizers, the mining industry — including aggregates mining — benefits from the multiplier effect by teaching the teachers. In other words, each teacher returns to the classroom and shares the information with 20 to 25 students, thereby expanding positive educational messages about the industry.

— *Therese Dunphy, Executive Editor*