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Asbestos testing may get personal

By Chris Bowman -- Bee Staff Writer - (*Published March 21, 2004*)

California is lobbying for an asbestos exposure study that would have dozens of El Dorado Hills teenagers wearing air monitors and keeping activity diaries as they go about their lives.

State pollution enforcers want the U.S. Environmental Protection Agency to strap mini-air pumps and filters on 100 student volunteers at Oak Ridge High School, where the agency recently found high levels of naturally occurring asbestos on bare walkways and baseball diamonds.

Though the EPA and the El Dorado Union High School District are paving and landscaping the bare spots, questions remain about the extent to which the mineral's cancer-causing fibers are windblown or tracked into classrooms and nearby homes.

Extensive air monitoring by the state Air Resources Board generally has found little or no airborne asbestos in the Oak Ridge area and elsewhere in the foothills of El Dorado and Placer counties.

These tests, however, are from fixed area samplers that capture airborne asbestos particles in the environment at large, air board officials said. They do not necessarily reflect what people may be breathing as they walk, run, clean house and otherwise kick up dust in their daily routines.

"The element that is missing to more fully understand exposure is personal sampling on individuals who are engaged in a variety of specific activities, some of which disturb the native soils that may contain significant levels of asbestos," state environmental officials told the EPA in a Feb. 10 letter obtained by The Bee. Officials attached an outline of their proposed yearlong \$425,000 study.

"We urge U.S. EPA to fund the work this year," the officials said.

Filling the data gap is critical not only to Oak Ridge and El Dorado Hills, state officials said, but also to several growing communities at the foot of California's Sierra Nevada and Coast Ranges and beyond to New York, Virginia, Maryland and 16 other states where development can unearth asbestos and release the hazardous fibers.

"(Naturally occurring asbestos) continues to be a concern, not only in California but throughout the nation," state toxics director Edwin Lowry said in a July 28 letter to the EPA. "U.S. EPA is the appropriate agency to develop these tools."

The state proposal is derived from similar studies the air board has sponsored for other air pollutants, including secondhand tobacco smoke and cancer-causing benzene used in gasoline.

EPA officials have discussed details of the El Dorado Hills proposal with California officials. They said the agency is considering the proposal but declined further comment.

Contractors for the school district have been wearing personal monitors in recent weeks as they scrape asbestos-tainted soil off surfaces on campus. EPA officials said they plan to have their contractors similarly equipped when the agency takes over the asbestos abatement work in April.

The federal agency had contractors wear the devices as they mechanically tilled yards and vacuumed homes in Libby, Mont., where asbestos-tainted vermiculite from a nearby mine had been used to insulate homes and aerate lawns and gardens. EPA officials have said more such testing is contemplated to better inform the public of the risks of living around naturally occurring asbestos.

"We agree that activity-driven exposure studies are needed," said Wayne Nastri, EPA's regional administrator in San Francisco, replying to Lowry's letter. "Region 9 will recommend that EPA fund exposure studies to address asbestos in soil."

Bob Fergusson, superintendent of the school district and its spokesman on asbestos issues, could not be reached for comment Friday.

Stan Iverson, an environmental science teacher at Oak Ridge, said Friday he welcomes the personal air monitors to get a more realistic read on students' exposures.

"The asbestos testing here always has been done when students are not present, so the actual conditions have not been monitored," Iverson said.

"Thirty students in a room moving about have got to produce some kind of a current that can't be matched by stationary fans that are present in the room during night-time monitoring," he said.

The school district's environmental consultants have used area samplers mounted on tripods and even brought in portable fans to kick up asbestos fibers that may have settled on surfaces.

Stationary samplers, however, almost always underestimate personal exposures, said Katharine Hammond, an exposure assessment expert at the University of California, Berkeley.

"If you just have a sampler sitting there in the absence of people and activity, you won't get it," Hammond said.

That's because people help define their own exposures by their proximity to the source and their movements, creating their own cloud of particles, Hammond said.

"We call it the Pigpen effect," she said, referring to the Peanuts comic strip character perpetually cloaked in a dust cloud.

The air board proposal does not contemplate tests that would put students or residents in the path of potentially dangerous dust clouds, such as from construction activity or vehicles on the many back roads covered with locally mined asbestos-bearing gravel.

State officials, however, believe the results of personal air monitoring in less-hazardous scenarios may demonstrate the importance of counties enforcing the air board's recently adopted asbestos controls on construction and the sale of gravel containing the fibrous minerals.

The study plan suggests 250 volunteers, including 100 Oak Ridge students, wearing monitors during waking hours and keeping detailed activity journals for up to two 48-hour periods, one over a weekend and another during a weekday in the dry seasons.

Fifty of the volunteers would be adult residents near Oak Ridge. Another 50 would be students of an undetermined nearby school known or believed to have relatively high asbestos in the soil. A third group of 50 would be students at a school known to have little naturally occurring asbestos. Students would need parental permission to participate.

Participants would carry lightweight air pumps in fanny packs. A flexible tube would run between the pump and an air filter cartridge clipped to a lapel or shirt pocket, within 12 inches of the mouth and nose. A motion detector on the pump records when the monitor is not worn.

Randall Zimon, a 16-year-old junior at Oak Ridge, said he gladly would don a monitor.

"The biggest problem with this asbestos issue on campus has been a lack of knowledge," Zimon said Friday. "Instead of saying we don't know whether we are being harmed, let's find out."

Jenny Baldassari, 17, said she, too, supports the proposed study but thinks it is asking too much of her and most of her peers to faithfully wear the devices and keep good diaries.

"They may not be as responsible as they should be, and that could ruin the whole study," she said.

Under the proposal, technicians would visit the schools or homes to calibrate pumps, start the monitors, record air flow rates and review instructions and diary entries with participants. They would collect filters and have laboratories measure asbestos concentrations.

Scientists then would compare average daily personal exposure levels among the study groups.

The data also would be compared with results from stationary area monitors that would be running at the same time as the personal monitoring.

"If people's personal monitors are giving you higher levels than the ambient (area) monitors, that tells you there is something about the person's activity that's increasing their exposures," said Peggy Jenkins, a state air board scientist who helped draft the proposal.

The proposal includes a separate examination of personal exposures tied to specific, everyday activities, such as walking or playing on unpaved areas where asbestos is known or suspected to be present in the soil.

The stated goal is to give residents of asbestos-tainted areas a better idea of the relative risks they face.

State air board officials know the study would take some selling to gain community acceptance and a pilot project to work out bugs in the logistics.

"Hopefully, we can convince people that the reasons why we are doing this is because they have concerns about exposures," said Michael Scheible, the air board's deputy executive officer. "We are trying to get information so we can better characterize the level of risk."

About the Writer

The Bee's Chris Bowman can be reached at (916) 321-1069 or cbowman@sacbee.com.

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