



Engineering Sciences Section – 2010

C12 Asbestos and Environmental Crimes

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After attending this presentation, attendees will see how an environmental crime can impact an entire community. This presentation will show some of the interesting challenges faced by an environmental forensic chemist.

This presentation will impact the forensic science community by showing how the crime put the community in turmoil, and why the school was described as a war zone.

EPA regulations come into play when specific amounts of Asbestos Containing Material (ACM) are removed from a school building and/or released into the environment. Often when the investigation starts, much of the material has already been removed. Calculations from photographs or evidence found after the removal may be used to help determine if a violation exists.

A small town contracted asbestos abatement at the local high school during the summer break. The school library was torn apart; the walls and ceilings of the halls were "power washed" with high pressure water to clean asbestos containing material off the surfaces. The material migrated down pipe chases, inside the classrooms and into lockers. In mid August, the work was reported as completed. Teachers complained about dust coming out of the vents. They were told that the dust was from cement and non-toxic. Due to the complaints, air monitors were placed in the school. Fiber counts varied from non-detect to over 4000 structures/mm². The legal limit is 70 structures/ mm².

Contaminated water was washed down storm drains. The pipes drained into an irrigation canal, which went into the reservoir that provided drinking water to the town. Debris was also washed down floor drains. Floor drains in the school emptied into the sanitary sewer system. The treatment plant composted the solids and sold the residue to farmers, who spread it on the fields surrounding the town.

These are common types of requests asking the chemists at the U.S. EPA to use not only chemistry, but logic to help assist in determining if violations of an environmental regulation act have occurred. Not only is polarized light microscopy used to determine the amount of asbestos in samples, but other documentary evidence, such as photos, are used to piece together information for case development.

Asbestos, School, Community