BY TONY NOCITO

eliminating the threat

While asbestos dangers are well documented, history has long avoided eliminating the threat it poses to human health.

We are starting to progress in our waste habits by recycling different streams of waste and using closed landfills constructively. Composting food waste and recycling plastics, glass, metals, cardboard and newspapers is our way of life. We are realizing the importance of installing waste-to-energy (WTE) plants on closed and active landfills to capture energy.

Separating recyclables from municipal waste before it is dumped in landfills, as well as landfill mining for recyclables are now prominent trends.

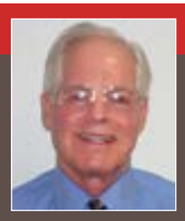
We create 250 million tons of waste per year. By practicing reduce, reuse and recycle, we are taking the right steps to minimize waste to landfills.

SUSTAINABILITY LIABILITY

Many companies are touting zero-waste-to-landfill from their manufacturing operations, however, when the actual facility is taken into account, that may be a false claim.

Companies are hiring or internally promoting sustainability officers who are responsible for complying with all environmental regulations, such as the Compressive Response, Compensation, and Liability Act (CERCLA). CERCLA requires treatments that permanently

SHOWING DEDICATION


Tony Nocito

This article's author, Tony Nocito, has dedicated the past 30 years to asbestos removal and elimination. As managing member of ABCOV Companies LLC, and other related companies that provide services for the ABCOV Method of asbestos destruction and conversion to a nontoxic material, Nocito is a pioneer in this specialized field.

Nocito started in the asbestos abatement industry in 1984. From 1984-1991, Nocito performed demolition work and asbestos removal on major projects including Macy's stores in Wayne, N.J., and Smithtown, N.Y.; hospitals in New Jersey; numerous projects at JFK International, LaGuardia and Newark airports; Garden State Plaza Mall, Paramus, N.J.; Holiday Inn, New York City; Madison Square Garden, New York City; and numerous other projects in and around the New York/New Jersey area.

It was during the Macy's projects that Nocito recognized the magnitude of the asbestos problem, which caused him to search out new methods and technologies for removing and disposing of asbestos-containing materials. During the last 30 years, he has initiated and underwritten the research and development project known as the ABCOV Method at Battelle Memorial Laboratories in Columbus, Ohio, and Materials Science Laboratories of the Georgia Institute of Technology, Atlanta.

He then commercialized the ABCOV Method by working with Madison Square Garden, New York City; the Air Force, Griffiss Air Force Base, Rome, N.Y.; Consolidated Edison, New York City; Aberdeen Proving Grounds, Edgewood, Md.; and the Department of Energy, Federal Environmental Technology Center, Morgantown, W.Va.; and as a subcontractor on various projects demonstrating the removal of radioactive metals from asbestos-containing material.

and significantly reduce volume, mobility of hazardous substances and most importantly, toxicity.

While companies like General Motors, Ford and Chrysler tout sustainability achievements, over the past five years these companies have closed or sold approximately 180 manufacturing facilities. Most of these facilities were built before 1979 and all had to have asbestos-containing material installed in them when they were built.

Asbestos permeates most facilities built before 1979: utilities, military bases, government buildings, refineries, factories, homes and landfills: collectively known as our "built environment."

Asbestos has been documented in archeological diggings found in pottery and chinking of homes in Scandinavia from 300 B.C.


Most facilities built before 1979 were built with asbestos-containing materials. The hazardous material can be found in roofing material, pipe and boiler coverings, taping, and floor and ceiling tiles.

HISTORY LESSONS

The use of asbestos has a long history. Asbestos has been used for more than 2,000 years, called by the ancient Greeks "inextinguishable," because of superior resistance to fire.

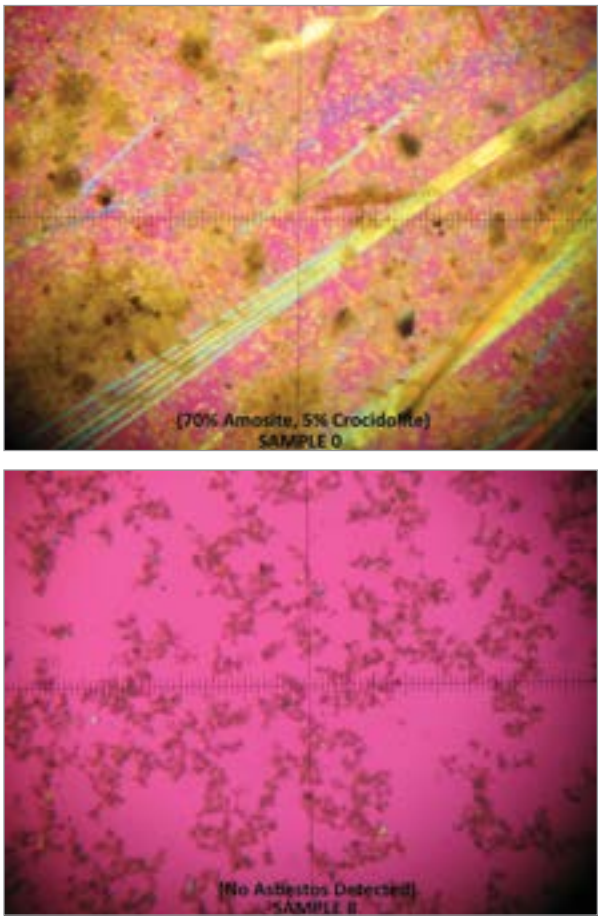
The Greek, Strabo, as well as the Roman, Pliny the Elder, noticed the sick-

ness of the lungs and the early deaths of slaves who worked in the asbestos mines, and also in slaves who wove asbestos table clothes, napkins, burial garments and asbestos into wicks for the Eternal Flame of the Vestal Virgins.

Little known to Strabo and Pliny the Elder, their observations of slaves contracting lung illness would become a fatal, proven fact almost 2,000 years later.

Strabo and Pliny never could have realized or predicted that lung disease caused by asbestos would become the world's greatest industrial disaster ever known to man and the largest class action law suits ever to swamp the court system. As right as their observations were on the fact that asbestos caused "sickness of the lungs in those who worked with it," they also could not have predicted that more than 3,000 people in the United States are diagnosed with Mesothelioma each year; 125 million people worldwide encounter asbestos in the home or workplace; every five minutes someone in the world dies from asbestos-related illnesses.

This number amounts to 100,000 people per year and is expected to increase to 5 to 10 million people by 2030. It is a fact that every year there are more people killed by as-



The ABCOV Method of asbestos removal, shown above in these before and after samples, is a nonthermal technology that can be used to destroy all forms of asbestos-containing material.

bestos than in road accidents. Although used through the centuries, the use of asbestos flourished at the onset of the industrial revolution in the 18th century when factories boomed and asbestos was seen as miracle mineral due to its fire resistant, chemical resistant and tinsel strength. Industry created many different products that included asbestos.

In the railroad industry it was used to line refrigeration units, boxcars, and cabooses, and the material was found to be especially useful as insulation for pipes, boilers and fireboxes in steam locomotives and as refractory brick in the coal-fired engines and furnaces. The automobile industry used asbestos in brake linings and clutches, as well as in wiring necessary for lighting and ignitions.

The construction industry found many uses of asbestos for factory and home building products: roofing material (both felt and cement board with asbestos embedded in it), pipe and boiler covering, floor tile, taping, acoustical ceiling tile, Transite furnace flu, and most dangerously as vermiculite in attic insulation and plant soil additive. Vermiculite was manufactured in Libby, Mont., by W.R. Grace who also manufactured asbestos-containing spray-on fireproofing known as Monokote. Monokote was widely used in thousands of buildings throughout the world. One well known site being the World Trade Center, which still had asbestos containing material when it was attacked.

Referred to as "Transite in the United States," the material permeates Australia and many other warm climate countries.

The construction industry, by far, gave asbestos-containing material products a great deal of uses, as did the shipbuilding industry. Because of the widespread commercial uses of asbestos, the cases of asbestosis and mesothelioma started to come to light.

In 1899, British physician, Dr. H. Montague Murray, discovered the first case of asbestosis and recorded an abstract named "Curious Bodies." In 1906, French factory inspector, Auribolt, discovered the first asbestos lung disease, mesothelioma in 50 people. The use of asbestos and its dangers became so common that by 1918 life insurance companies started to charge higher premiums for asbestos workers.

TOO LITTLE, TOO LATE

Unfortunately 1918 was too late, because as the years went on and asbestos diseases became more prevalent and obvious, many financially solid white glove insurance companies were forced into bankruptcy by asbestos lawsuits, as were myriad of companies who manufactured asbestos-containing material.

CONTAMINANTS REMOVAL FOCUS

By 1930 it was well known to manufactures that asbestos-containing products were a cause of lung disease with death to follow, but many chose to not expose the truth.

The U.S. Public Health Service recognized the effects asbestos had on human health and recommended guidelines for asbestos exposure as early as 1938, but with the onset of World War II, the Public Health Service recommendations were ignored.

The expansion of existing military bases, the building of new military bases, amplified shipbuilding, and new government buildings, such as the Pentagon, all used asbestos.

The Defense Logistics Agency during World War II bought and stored in silos around the country raw asbestos in case asbestos did not become available.

With so much asbestos in our built environment around the world and the never-ending and ongoing illnesses caused by asbestos, coupled with the landfill shortage, why are we not destroying the asbestos to prevent the harm to humans?

METHODS OF DESTRUCTION

There are U.S.-Environmental-Protection-Agency-approved technologies that destroy asbestos by high temperature: plasma torch, vitrification and hearth oven, and a nonthermal process, ABCOV, which works by a chemical-physical reaction.

With the ABCOV process, asbestos destruction is followed through the process until the asbestos is destroyed (see photos on p. 32). In high-temperature processes, asbestos has to run through the process, be cooled down and be tested for asbestos. If asbestos is found in the batch that was run through the high temperature units, it must be put back through the unit until destroyed.

Asbestos is and will be a killer as long as it remains in our built environment. A *Wall Street Journal* "Pepper … and Salt" cartoon that has sat on my desk for at least 17 years says it best: A father sitting on the couch looking at his son's report card with great disappointment and letting his son know how he felt. The son replied: "If your generation doesn't learn to save the planet, it won't matter if my generation can't read or write." C&DR

The author is president of The ABCOV Method and can be reached at tony@abcov.com.