Noxious Waste Materials

One of the most pressing problems confronting the New York Metropolitan area is caused by the Port of New York. In order to keep shipping lanes open, they need to be dredged constantly to prevent silting. Until recently, the Port’s operator, the Port Authority of New York and New Jersey, disposed of the dredge material in the ocean.

Recognizing the environmental hazards posed by this material, which contains all kinds of toxins and heavy metals, the Federal Environmental Protection Agency is now prohibiting ocean dumping, forcing the Port Authority to search for environmentally acceptable methods of disposal. This is a formidable task, since several million of cubic yards of dredge material, much of it heavily contaminated, need to be disposed of, and the costs are staggering. Yet, if an acceptable solution is not found soon, the Port of New York may lose important shipping business, and the potential losses of jobs in the region are politically and economically unacceptable.

It was one of the main purposes of the incorporation of Echo Environmental, Inc. to sponsor research at Columbia University with the objective of developing concrete products that utilize highly contaminated dredge material. Mr. Toyohisa Etoh, a Member of the Board of Directors of Echo Environmental, has been granted a US Patent for a chemical compound that binds heavy metals into a cement matrix.

A research project at Columbia will further develop this technology and, in cooperation with the Port Authority, search for ways to detoxify or chemically bind the heavy metals and other pollutants in such a way that they cannot leach out under normal service conditions. The concrete products to be developed will have to be environmentally safe, i.e., be acceptable to the appropriate regulatory agencies and the general public, and it should be possible to produce them economically.

It is expected that the technology to be developed will also be able to dispose of waste incinerator ash in an environmentally safe manner. The Port Authority owns a waste incinerator in Essex County, NJ, and the disposal of both its fly ash and bottom ash is at present causing environmental concerns.

Research Sponsor

- Echo Environmental, Inc., New York, NY