



THE ASCE PITTSBURGH SECTION GEO-INSTITUTE CHAPTER PRESENTS

GEOENVIRONMENTAL ENGINEERING – PROBLEMS SOLVED AND CHALLENGES REMAINING

2012 Terzaghi Lecturer

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Attendance at this technical presentation qualifies participants for 1.0 PDH

Although the origins of geoenvironmental engineering can be traced to numerous activities, the transformative event was leakage of toxic chemicals from the chemical waste dump at Love Canal, New York, in the late 1970's. The actual and alleged health impacts produced dramatic changes in regulations and stringent new requirements for disposal of hazardous and solid wastes. Concerns also fueled major investments in research on clay barriers, geosynthetics, chemical transport in the subsurface, groundwater clean-up, and other areas. The result was enhanced understanding of natural and engineered systems, and much better engineering materials, designs, and laboratory and analytical tools.

Early permeability testing of clay materials showed that concentrated organic liquids caused large increases in hydraulic conductivity, but many people questioned the validity of the tests given the likelihood of sidewall leakage in the experiments. Early field hydraulic conductivity tests on small-scale compacted clay liners pointed to great differences between laboratory and field testing results, which led to much controversy and to changes in testing protocols. Traditional earthwork specifications were sometimes found to be inadequate for achieving the exceptionally low hydraulic conductivity required by regulation, and improved methods of thinking about earthwork specifications evolved. The appearance of geosynthetic clay liners led to many engineering questions, but as knowledge was gained, dramatically expanded use of geosynthetic clay liners evolved. Similarities between the controversies experienced in the evolution of knowledge about the geoenvironment are compared with experiences of the author while he served on investigation teams for levee failures in New Orleans and the Deepwater Horizon oil spill in the Gulf of Mexico, all of which highlight the challenges that engineers may face as they balance demands for reduced costs against application of sound engineering principles that ensure public safety.

***DINNER RESERVATIONS ARE REQUIRED FOR THIS MEETING
PLEASE RSVP BY Friday, September 27, 2013***

Date: Thursday, October 3, 2013

Time: 6:00 PM Social Hour (Cash Bar)

7:00 PM Dinner

8:00 PM Presentation

Place: Pittsburgh Athletic Association

4215 Fifth Avenue

Pittsburgh, PA 15213

(412) 621-2400

Herb Crusted North Atlantic Salmon

Pesto Cream Sauce

Roasted Vegetable Ravioli

Vodka Tomato Cream Sauce

Cost: \$45 for ASCE Pittsburgh Section members

\$55 for Non-members

\$10 for Student members

Entrée Choices:

Chicken Marsala

Wild Mushrooms, Marsala Wine Sauce

Contact: Stephanie Chechak (412) 922-5575

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Or register online at: <http://www.asce-pgh.org/>