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ENVIRONMENTAL Science & Technology

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FARMING *the* **Deep Blue Sea**

**Gas: A Neglected Phase
in Remediation of Metals
and Radionuclides**

**Carbon in Black Crusts
from the Tower of London**

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News and Features

6C Letters

Heavy metal—music, not science • Cell-phone hazards

NEWS

4182 Higher ozone levels from renewable fuels

The U.S. Renewable Fuels Standard combined with a rule relaxing requirements on producer emissions will lead to increased ozone levels, particularly in midwestern states.

4183 White Tower of London turns yellow

Historic buildings blackened by coal smoke may fade into sepia tones as air pollution's composition changes.

4183–4185 News Briefs

U.S. greenhouse-gas emissions rise • Phosphorus removal • Washington state passes PBDE ban • Report compares chemical policies

4184 Budget cuts weaken EPA's workforce

Morale is at the lowest point in 25 years among many agency scientists.

4185 Canada's top environmental scientist

ES&T editorial advisory board member Miriam Diamond is honored by *Canadian Geographic*.

4186 McCarty wins 2007 Stockholm Water Prize

A Stanford University environmental engineer with decades of experience with wastewater treatment is passionate about preserving water resources.

PERSPECTIVE

4188 Farming the Deep Blue Sea

Erika Engelhaupt



Demand for fish is soaring worldwide. The National Oceanic and Atmospheric Administration estimates that the world will need to come up with an additional 40 million tons per year of seafood by 2030. The aquaculture industry is booming to meet the demand, and much of the industry is now moving offshore. This shift has led Congress to introduce a bill that would dramatically expand oceanic farming. Engelhaupt discusses the implications of the National Offshore Aquaculture Act, which would allow the U.S. government to lease patches of ocean, now off-limits, to private companies to operate fish farms.

Online news: Read news first at <http://pubs.acs.org/estnews>.

Cover: The photo of yellowtail fish in an offshore pen was provided by Kona Blue Water Farms.

FEATURE

4193 Gas: A Neglected Phase in Remediation of Metals and Radionuclides

Miles E. Denham and Brian B. Looney

Remediation methods that specifically use the gas phase as a central feature have primarily targeted volatile organic contaminants, not metals and radionuclides. Nevertheless, the gas phase can play an important role in remediation of inorganic contaminants and provide opportunities for efficient, cost-effective remediation. Denham and Looney explore ways in which manipulation of the gas phase can be used to facilitate remediation of metals and radionuclides.

Research

CHARACTERIZATION OF NATURAL AND AFFECTED ENVIRONMENTS

4199

▶ Carbon in Black Crusts from the Tower of London

Alessandra Bonazza, Peter Brimblecombe, Carlota M. Grossi, and Cristina Sabbioni

The origin, fluxes, and transformation of carbon compounds from analysis of black crusts collected at the Tower of London are reported.

■ 4205

Estimation of Atmospheric Emissions of Six Semivolatile Polycyclic Aromatic Hydrocarbons in Southern Canada and the United States by Use of an Emissions Processing System

Elisabeth Galarneau, Paul A. Makar, Mourad Sassi, and Miriam L. Diamond

A detailed atmospheric emissions database for semivolatile PAHs is presented for >3000 source categories in southern Canada and the U.S.

■ 4214

Chemical Speciation of Dissolved Cu, Ni, and Co in a Contaminated Estuary in Southwest Spain and Its Influence on Plankton Communities

Charlotte B. Braungardt, Eric P. Achterberg, Martha Gledhill, Malcolm Nimmo, Françoise Elbaz-Poulichet, Antonio Cruzado, and Zoila Velasquez

The Huelva estuary has extremely high metal concentrations due to mining runoff; metals largely occur in a labile form and greatly influence the plankton communities.

4221

Lateral and Longitudinal Variation of Hyporheic Exchange in a Piedmont Stream Pool

Robert J. Ryan and Michel C. Bouffadel

The influence of subsurface properties on the surface–subsurface exchange is investigated to better understand biogeochemical cycling of nutrients and contaminants.

■ Supporting information is available free at <http://pubs.acs.org/est>.
▶ This issue contains a news story about this research.