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ENVIRONMENTAL Science & Technology

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Assessing **Extended Producer Responsibility LAWS** *in JAPAN*

**Perfluorocarboxylic Acids
in the Arctic Ocean**

**Widespread Natural Perchlorate
in the Southwest U.S.**

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A spate of research finds the effects of warming racking up faster than scientists had predicted.

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Polls show that the U.S. population is becoming more concerned about global warming.

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4490 Past PFOA sources in the Arctic Ocean

New modeling results suggest that ocean reservoirs could supply PFOA to the Arctic for many years.

4491 Perchlorate is widespread in U.S. Southwest

The widespread occurrence of natural perchlorate in unsaturated zones of the southwestern U.S. rivals other sources.

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Manufacturers of electronic and electrical equipment must pay for the collection and treatment of e-waste.

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Tiny filters fix big water problems

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Could another perfluorinated source exist in foods? Rebecca Renner takes the wraps off polyfluoroalkyl phosphate surfactants.

Cover: The photo of e-waste in a landfill was provided by Redundant Technology Initiative. (Copyright 2000 www.lowtech.org.)

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

FEATURE

4502 Assessing Extended Producer Responsibility Laws in Japan

Yasuhiko Ogushi and Milind Kandlikar



Waste disposal became increasingly prominent on the Japanese political agenda in the mid-to-late 1990s and culminated in the adoption of new laws aimed at safer and more effective waste management. Extended producer responsibility (EPR) in the form of producer "take-back" legislation is central to the Japanese approach. The legislation provides an incentive for producers to incorporate environmental considerations

into product design and shifts the responsibility for end-of-life products away from municipalities and to the producer. Ogushi and Kandlikar provide an overview of Japanese EPR laws and present some lessons learned.

Research

CHARACTERIZATION OF NATURAL AND AFFECTED ENVIRONMENTS

4509

Mercury in Crude Oil Processed in the United States (2004)

S. Mark Wilhelm, Lian Liang, Deborah Cussen, and David A. Kirchgessner

The mean and range of concentrations of mercury in crude oil processed by U.S. refineries in 2004 are reported from measurements acquired in a 4-year study by the U.S. EPA.

4515

Beach Sands along the California Coast Are Diffuse Sources of Fecal Bacteria to Coastal Waters

Kevan M. Yamahara, Blythe A. Layton, Alyson E. Santoro, and Alexandria B. Boehm

Densities of fecal indicator bacteria are examined at 55 beaches along the California coast, and their potential to be transported to the nearshore region is illustrated.

4522

Widespread Natural Perchlorate in Unsaturated Zones of the Southwest United States

Balaji Rao, Todd A. Anderson, Greta J. Orris, Ken A. Rainwater, Srinath Rajagopalan, Renee M. Sandvig, Bridget R. Scanlon, David A. Stonestrom, Michelle A. Walvoord, and W. Andrew Jackson

A reservoir of perchlorate of apparent atmospheric origin exists under an area of ~1 million square kilometers in the arid and semiarid southwestern U.S.

4529

A Global Mass Balance Analysis of the Source of Perfluorocarboxylic Acids in the Arctic Ocean

Frank Wania

Global fate simulations suggest that atmospheric oxidation of fluorotelomer alcohols is much less efficient in delivering per-

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