

ITRC PROJECT PROPOSAL: Pharmaceutical and Personal Care Products (PPCPs) in Surface and Groundwater

PREPROPOSAL DATE: July 7, 2008

NOTE: *Due to a last minute change, this proposal currently has no state leadership, although it has strong state support. Thus, this proposal is a short summary of the topic for the purposes of ITRC content evaluation. Detailed information depends on states' interests and willingness to coordinate this effort.*

Proposal Contact

See above.

Problem Statement (Why is this project necessary?)

Pharmaceutical and Personal Care Products (PPCPs) include medicines, insect repellents, sunscreens, perfumes, soaps, fragrances, and lotions. These products, which can be found in any drug store, have the potential to enter the environment through domestic sewage, and solid waste as well as other sources. PPCP disposal has resulted in low levels of contamination to surface and groundwater, and currently we do not have sufficient information to determine the effect of PPCPs on human health and the environment. Some PPCPs are endocrine disrupting compounds (or EDCs) and could possibly affect the system of glands that produces hormones which control the body's metabolic activity and development.

The extent and effects of PPCPs in the environment have been the topics of numerous discussions and debates. For example, on April 14, 2008 a hearing before a subcommittee of the U.S. Senate Committee on Environment and Public Works was conducted as a result of disclosure of the presence of trace concentrations of PPCPs in the drinking water of at least 41 million Americans. Clearly, this is a priority area for many parties.

Solution/Impact (How will the project impact the environmental marketplace?)

In order to address the issue of PPCPs in surface and groundwater, state environmental agencies need to be aware of the latest developments in the tracking, treatment, and removal of PPCPs at treatment plants and in surface and groundwater. Additionally, risk management strategies need to be developed and communicated. Also, pollution prevention programs to keep unused medicines out of the environment need to be evaluated.

By expanding such efforts through the ITRC and its network of environmental regulators and professionals, a state-led collaboration will: (1) consolidate the collective expertise of many states; and (2) complement and stimulate on-going federal work in these areas.

Summary of Deliverables (primary project outputs)

The project would generate a combination of case studies, technology overviews, technical and regulatory guidance documents and/or training classes.

Primary project outputs include overview of various PPCPs and their behavior/measurement in the environment, evaluation of the effectiveness and best practices of current treatment methods, and definition of maximum values for low level PPCPs.

Target Audience

The target audience includes but is not limited to: State and federal regulators, city and public work commissions, pharmaceutical companies, other environmental professionals, hospitals, community stakeholders and members of the general public concerned with exposure to PPCPs.

Interested states include:

Ken Marra, David Noonan, Carol Rowan West – MassDEP

Sandi Allen, Ken Kosinski – NYS DEC

Jim Hill - WVDEP

Related Work

General

<http://www.epa.gov/ppcp/> presents EPA's information and approach on PPCPs and EDCs in the environment. EDC webpages: <http://www.epa.gov/nerl/goals/ecosystem/edc.html> or <http://www.epa.gov/endocrine/>.

http://www.dtsc.ca.gov/AssessingRisk/PPCP/index.cfm#Other_DTSC_Associated_Activities presents California's efforts on addressing PPCPs and EDCs.

<http://www.newmoa.org/prevention/chemicalspolicy/workshops/pharmaceuticals.cfm> presents the Northeast Waste Management Officials Association' (NEWMOA) efforts on addressing PPCPs and EDCs.

<http://www.nwri.ca/ppcp-ppsp/i-cover-e.html> summarizes the results of a national workshop that the Canadian government held in 2007 to assess the current state of Canada's research on PPCPs in the environment in government, academia and industry sectors.

Occurrence

http://pubs.acs.org/hotartcl/est/es011055j_rev.html summarizes the results of the USGS River and Stream study.

<http://toxics.usgs.gov/pubs/OFR-02-94/> presents water-quality data collected during 1999 and 2000 as part of the first nationwide reconnaissance of the occurrence of pharmaceuticals, hormones, and other organic wastewater contaminants.

Human and Ecological Health Effects

<http://www.epa.gov/endo/> This site provides information about EPA's Endocrine Disruptor Screening Program and the agency's approach for screening and testing chemicals for potential endocrine effects.

Environmental Fate

<http://toxics.usgs.gov/regional/emc/index.html> provides an overview of the USGS Emerging Contaminants Project.

http://www.janusinfo.org/imcms/GetDoc?meta_id=7238 presents the results of Sweden's environmental assessment of a selected sample of drug compounds.

Pharmaceutical Industry & Other Efforts to Manage Pharmaceuticals in the Environment

<http://www.astrazeneca.com/article/511608.aspx> provides AstraZeneca's web page.

<http://www.gsk.com/investors/reps03/EHS03/GSKeHS-35.htm> is Glaxo Smith Kline's web page

<http://www.epa.gov/ppcp/faq.html#ifthereareindeed> EPA's PPCP Frequent Questions

<http://www.h2e-online.org/> is the official web site for Hospitals for a Clean Environment.