



Association of State Drinking
Water Administrators

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Weekly Update

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New Products as a Result of TCRDS Advisory Committee Initiatives

The most high profile outcome of the Total Coliform Rule Distribution System Advisory Committee's Agreement in Principle (AIP), is the ongoing development of a revised Total Coliform Rule. However, other initiatives also resulted from the deliberations of the Advisory Committee and were outlined in the AIP. One was the creation of a Research and Information Collection Partnership (RICP) comprised of EPA and the Water Research Foundation. A steering committee for the RICP includes representatives of other stakeholders including states. Cindy Forbes of California drinking water program serves on the RICP steering committee. The Partnership was formed to identify priorities for research and information collection on seven distribution system issues described in the AIP. The RICP has released the Priorities of the Distribution System Research and Information Collection Partnership (Priorities document).

The Priorities document identifies 10 high priority, science-driven, mutually-agreed-upon, strategically-focused, and decision-relevant research and information collection project area documents, as recommended in the AIP. The high priority documents relate to cross connections, contaminant accumulation, health effects, pressure, storage, and surveys of water systems about distribution system issues. The project area documents are generally intended to identify groupings of similar rather than individual, stand alone projects. It is possible that some of these documents may be more appropriate to divide into multiple projects to fully address the information needs described. Inclusion in the Priorities document does not guarantee any project will be funded but it does help EPA, the Water Research Foundation and others to target their research funding. The Priorities document can be found on EPA's website [HERE](#).

Cross connection control was an area of interest for the Advisory Committee and some thought initially that regulations would be recommended to facilitate implementation of cross connection control nationally. However, the Advisory Committee did not feel the time was right for rule development but that some attempt should be made to encourage adoption of effective cross connection control programs and promote consistency in implementation. In accordance with the TCRDSAC's recommendation (section 3.17.a of the AIP), a compilation of existing cross connection control requirements, guidance, and other information was developed as a resource for states and water systems. This information can be found [HERE](#).

Newsletter Article on Nutrients

ASDWA has participated, over the past few years, in a state-EPA Nutrients Innovation Task Group. (We were represented on the Task Group by Jill

Jonas (WI), with involvement by Mike Baker (OH), and support by ASDWA staff.) The Task Group developed a report, entitled, "An Urgent Call to Action – Report of the State-EPA Nutrients Innovation Task Group" (November 2009), which may be accessed at the following web site: <http://www.epa.gov/waterscience/criteria/nutrient/nitgreport.pdf>

The Task Group is now engaged in trying to "put meat on the bones" of the various recommendations included in the report. The attached newsletter article was jointly authored by ASDWA, EPA, and ASIWPCA and is designed to put the overall problem statement and principal recommendations in a user-friendly format. Please feel free (and encouraged!) to include this article in any newsletters you may contribute to or be aware of.

Manufacturing Facilities Release Pharmaceuticals to the Environment

Pharmaceutical manufacturing facilities can be a significant source of pharmaceuticals to surface waters, according to a new study by the U.S. Geological Survey (USGS) conducted in cooperation with the State of New York. Outflow from two wastewater treatment plants in New York that receive more than 20 percent of their wastewater from pharmaceutical facilities had concentrations of pharmaceuticals that were 10 to 1000 times higher than outflows from 24 plants nationwide that do not receive wastewater from pharmaceutical manufacturers.

"This is the first study in the U.S. to identify pharmaceutical manufacturing facilities as a significant source of pharmaceuticals to the environment," said Matthew C. Larsen, USGS Associate Director for Water." The USGS is working with water utilities to evaluate alternative water treatment technologies with the goal of reducing the release of pharmaceuticals and other emerging contaminants to the environment." Maximum concentrations in outflows from the two wastewater treatment plants in New York were:

- 3,800 parts per billion (ppb) of metaxalone (a muscle relaxant)
- 1,700 ppb of oxycodone (an opioid prescribed for pain relief)
- Greater than 400 ppb of methadone (an opioid prescribed for pain relief and drug withdrawal)
- 160 ppb of butalbital (a barbiturate)
- Greater than 40 ppb of phendimetrazine (a stimulant prescribed for obesity) and carisoprodol (a muscle relaxant)
- 3.9 ppb diazepam (an anti-anxiety medication)

While pharmaceutical concentrations were significantly lower in receiving streams, measurable concentrations were detected as far as 20 miles downstream. By contrast, outflow from the wastewater treatment plants that do not receive wastewater from pharmaceutical manufacturing facilities had concentrations that rarely exceeded one ppb.

For this study, USGS scientists collected outflow samples periodically from 2004 to 2009 from three New York wastewater treatment plants, two of which receive more than 20 percent of their wastewater from pharmaceutical manufacturing facilities. USGS also collected samples from 2006-2009 from 23 selected wastewater treatment plants across the nation that do not receive wastewater from pharmaceutical manufacturing

facilities.

All of the samples were analyzed for seven pharmaceuticals, including opioids and muscle relaxants, representing some of the most frequently prescribed medications in the U.S. Some pharmaceuticals studied have not previously been included in environmental studies.

The pharmaceuticals investigated in this study were identified using a forensic approach that identified initially unknown chemicals present in the wastewater treatment plant outflows at elevated levels. Although public records were not available for all pharmaceuticals formulated at these sites, available data indicate that these seven pharmaceuticals are manufactured at one or both of the New York facilities involved in the study. Additional pharmaceuticals were identified in the outflow of these two wastewater treatment plants, and ongoing studies are documenting the levels at which they occur in the environment.

This study is part of a long-term effort to determine the fate and effects of chemicals of emerging environmental concern and to provide water-resource managers with objective information that assists in the development of effective water management practices. More information can be found [online](#).

EPA to Initiate Rulemaking to Reduce Harmful Effects of Sanitary Sewer Overflows

EPA is initiating a rulemaking to better protect the environment and public health from the harmful effects of sanitary sewer overflows (SSOs) and basement backups. In many cities, SSOs and basement backups occur because of blockages, broken pipes and excessive water flowing into the pipes. SSOs present environmental and health problems because they discharge untreated wastewater that contains bacteria, viruses, suspended solids, toxics, trash and other pollutants into waterways. These overflows may also contribute to beach closures, shellfish bed closures, contamination of drinking water supplies and other environmental and health concerns.

Infrastructure issues were discussed at the "Coming Together for Clean Water Conference" held by EPA Administrator Jackson on April 15, 2010. The Agency plans to address these issues as part of its efforts to protect public health and revitalize local waterways.

EPA is considering two possible modifications to existing regulations: (1) establishing standard National Pollutant Discharge Elimination System (NPDES) permit conditions for publicly owned treatment works (POTWs) permits that specifically address sanitary sewer collection systems and SSOs; and (2) clarifying the regulatory framework for applying NPDES permit conditions to municipal satellite collection systems. Municipal satellite collection systems are sanitary sewers owned or operated by a municipality that conveys wastewater to a POTW operated by a different municipality. As a part of this effort, the Agency is also considering whether to address long-standing questions about peak wet weather flows at municipal wastewater treatment plants to allow for a holistic, integrated approach to reducing SSOs while at the same time addressing peak flows at POTWs.

EPA will hold public listening sessions and the public can also submit written comments. EPA will accept written comments on the potential rule until 60

days after publication in the Federal Register. More information on sanitary sewer overflows, the potential rule and a schedule of the upcoming listening sessions: http://cfpub.epa.gov/npdes/home.cfm?program_id=4.

EPA Pesticide General Permit for Discharges from the Application of Pesticides

EPA is proposing a new permit requirement that would decrease the amount of pesticides discharged to our nation's waters and protect human health and the environment. This action is in response to an April 9, 2009 court decision that found that pesticide discharges to U.S. waters were pollutants, thus requiring a permit. The previous EPA position had been that application of pesticides directly to waters was not a discharge requiring an NPDES permit as it was adequately regulated by the pesticide labeling. The court rejected that argument but the effective date of the ruling was deferred for 2 years to give EPA time to develop this general permit.

The proposed Pesticide General Permit (PGP), released for public comment and developed in collaboration with states, would require all operators to reduce pesticide discharges by using the lowest effective amount of pesticide; prevent leaks and spills; calibrate equipment; and monitor for and report adverse incidents. Additional controls, such as integrated pest management practices, are built into the permit for operators who exceed an annual treatment area threshold. Some specific control measures are described in the permit Fact Sheet which also includes references for additional information on control measures.

The Agency's draft permit covers the following pesticide uses: (1) mosquito and other flying insect pest control; (2) aquatic weed and algae control; (3) aquatic nuisance animal control; and (4) forest canopy pest control. It does not cover terrestrial applications to control pests on agricultural crops or forest floors. EPA is soliciting public comment on whether additional use patterns should be covered by this general permit.

This requirement would impact the use of chemical controls for algae in drinking water sources. The annual treatment threshold for aquatic weed and algae control will be 20 acres. Operators with usage below annual treatment thresholds would not need to provide EPA with a Notice of Intent to be covered by the permit. These low volume users would be automatically covered by the provisions of the permit. The PGP does not authorize coverage for (1) discharges of pesticides or their degradates to waters already impaired by these specific pesticides or degradates; or (2) discharges to outstanding national resource waters (also known as Tier 3 waters). Those types of discharges will require coverage under individual NPDES permits.

The Agency plans to finalize the permit in December 2010. It will take effect April 9, 2011. Once finalized, the pesticide general permit will be used in states, territories, tribal lands, and federal facilities where EPA is the authorized permitting authority. In the remaining 44 states, states will issue the pesticide general permits. EPA has been working closely with these states to concurrently develop their permits.

EPA will hold three public meetings, a public hearing and a webcast on the draft general permit to present the proposed requirements of the permit, the basis for those requirements and to answer questions. These meetings will take place over the next few weeks. A schedule of the events is included on the website referenced below. EPA will accept written

comments on the draft permit for 45 days after publication in the Federal Register.

More information on the draft permit:

http://cfpub.epa.gov/npdes/home.cfm?program_id=410.

Effects of Urban Development on Stream Health

A new USGS study examines effects of urban development on stream ecosystem health. Findings show that aquatic insect communities demonstrate little, if any, initial resistance to low levels of urban development that were previously thought to be protective of aquatic life. By the time a watershed reaches about 10 percent impervious cover in urban areas, aquatic insect communities are degraded by as much as 33 percent in comparison to aquatic insect communities in forested watersheds.

Comparisons among the nine metropolitan areas show that not all urban streams respond in a similar way. Land cover prior to urbanization can affect how aquatic insects and fish respond to urban development and is important to consider in setting realistic stream restoration goals in urban areas.

The USGS determined the magnitude and pattern of the physical, chemical, and biological response of streams to increasing urbanization and how these responses vary throughout nine metropolitan areas, including Portland, OR; Salt Lake City, UT; Birmingham, AL; Atlanta, GA; Raleigh, NC; Boston, MA; Denver, CO; Dallas, TX; and Milwaukee, WI.

For more information, including access to **USGS reports** and **video podcasts**, please visit <http://water.usgs.gov/nawqa/urban/>.

Nutrient Problems in the U.S. Call for Urgent Action

May 3, 2010

The following article was jointly authored by representatives of the U.S. Environmental Protection Agency (Ephraim King, Office of Science and Technology); the Association of State and Interstate Water Pollution Control Administrators (Ellen Gilinsky, Marcia Willhite); and the Association of State Drinking Water Administrators (Jill Jonas, Jim Taft).

Background

Nitrogen and phosphorus, two chemicals that healthy plants need to grow, can, in excess amounts, cause serious problems for the water we swim in, fish in, and drink. And, despite our collective best efforts, the problem is not getting better. As the United States population expands, nutrient pollution from urbanization and stormwater runoff, municipal wastewater discharges, air deposition, and agricultural livestock and row-crop activities is expected to grow as well. Increased public health risks and treatment costs from contamination of drinking water supplies, in particular, is a major concern.

Nationally, nutrient pollution is one of the top causes of water quality impairment and is linked to over 14,000 water segments in the U.S. listed as impaired. Over two million acres of lakes and reservoirs across the country are impaired and not meeting the standards set for those waterbodies due to excess nutrients. Seventy-eight percent of the assessed continental U.S. coastal areas exhibit symptoms of eutrophication (i.e., too much nitrogen and phosphorus). The sidebar illustrates numerous well documented impacts from this pollution.

Documented Impacts of Nutrient Pollution:

- Disinfection by-product & methemoglobinemia (blue baby syndrome)
- Co-occurring contaminants (pathogens, pesticides, industrial chemicals)
- Toxic algal blooms (neuro-toxins, paralytic, & diarrhetic effects)
- Increased treatment costs
- Recreation and tourism economic impacts
- Widespread water quality impairments
- Low dissolved oxygen levels (hypoxia/anoxia)
- Decreased species diversity and increased species vulnerability
- Significant habitat loss (seagrasses & submerged aquatic vegetation)

The spreading environmental degradation associated with excess levels of nitrogen and phosphorus in the nation's waters has been studied and documented extensively. The *costs* of these impacts across the country have not been comprehensively estimated, but we know they're enormous. The Chesapeake Bay is a national example of research, information collection, analysis, voluntary partnerships, stakeholder involvement, extensive outreach and collaboration, and a collective investment of over \$10 billion that, to date, has achieved only about 27% of the water quality targets for dissolved oxygen, water clarity, and chlorophyll-a. The estimated remaining cost of restoration for the Chesapeake Bay exceeds \$25 billion.

EPA and the States Recognize the Need to Take Action

In October 2008, state and EPA water quality and drinking water directors and national program managers formed a State-EPA Nutrient Innovations Task Group (Task Group) to review past nutrient control efforts and evaluate the potential for creating a new combination of existing tools and innovative approaches for addressing nutrient pollution. The Task Group

Examples of Recent Key Reports on Nutrient Pollution:

- ✓ EPA SAB: Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options (USEPA, 2009)
- ✓ EPA SAB: Hypoxia in the Northern Gulf of Mexico (USEPA, 2007c)
- ✓ NRC: Mississippi River Water Quality and the Clean Water Act: Progress, Challenges, and Opportunities (NRC, 2008)
- ✓ NRC: Urban Stormwater Management in the United States Draft (NRC, 2008b)
- ✓ EPA: National Coastal Condition Report III (USEPA, 2008)
- ✓ EPA: Wadeable Streams Assessment (USEPA, 2006b)
- ✓ NOAA: Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change. (Bricker et al, 2007)

recognized that eutrophication and nutrient overloading are significant environmental problems, not just for aquatic resources, but also for drinking water supplies. The Task Group identified and framed key nutrient issues and options on how to improve nutrient pollution prevention and reduction at the state and national level. The Task Group's recent report presents a summary of scientific evidence and analysis that characterizes the scope of nutrient sources and impacts.. Key findings include:

- The problem of nutrient pollution is nationally significant, expanding, and likely to substantially accelerate.
- Knowledge, collaboration, and substantial financial incentives, alone, are failing and will continue to fail at the state-wide and national level without greater focus and a common framework of responsibility and accountability for all point and non-point sources
- Current tools -- such as numeric nutrient criteria for waterways, water quality assessments and listings of impaired waters, urban stormwater controls, wastewater treatment plant nutrient limits, and animal feedlot controls -- are underutilized and lack coordination.
- Current regulations address certain sources (e.g. municipal sewage treatment) to the exclusion of others (e.g., row crop agriculture).
- Specific aspects of state non-point source programs have been highly successful in addressing individual sources of nutrients, but broader application has been undercut by the absence of a common multi-state framework of mandatory point and non-point source accountability within and across watersheds.

Task Group Recommendations

The Task Group believes that a coordinated and innovative synthesis of existing regulatory authorities and voluntary tools must be used across all sources and sectors of nutrient pollution. The Task Group made these primary recommendations:

- **Use Existing Tools:** The Federal government and states have a suite of existing tools that could be used more effectively. Some tools are only partially utilized and others could be expanded in scope.
- **Hold Pollution Source Accountable:** A national framework of accountability for nonpoint sources is necessary to make significant and essential difference.
- **Explore and Use Innovative Tools:** Broader reliance on incentives, trading, and corporate stewardship within a multi-state framework of public transparency, common responsibility, and point/non-point source accountability for meeting water quality and drinking water goals is needed.

Call to Action

Combating the challenge of widespread nutrient pollution will require a renewed emphasis on prevention and a profound change in how we share accountability and responsibility between sources, within watersheds and across state lines. The Task Group believes that national leadership is vital to supporting and requiring a more consistent and fuller utilization of existing tools from state to state and source to source. Establishment of a cross-state enforceable framework of responsibility and accountability for all point and non-point pollution sources is central to assuring balanced and equitable upstream and downstream environmental protection.

Innovation in the context of nutrient pollution means *acting* on what we know, fully *utilizing* the tools we have, exploring new authorities that we need, and *demanding* of each other stronger multi-sector cross-state accountability and support for a joint commitment to environmental protection, public health and shared economic opportunities.

Next Steps

We all agree that a suite of State and Federal Actions need to take place. Some of the first things to do are as follows:

- **Better Engage Agricultural Community:** The agricultural community is doing a lot already, but can do more through a combination of voluntary, incentive-based programs, as well as, where appropriate, regulatory approaches. Having a strong farm economy and clean water are not mutually exclusive. We need to work together, developing incentive-based programs to support farmers in reducing nutrients, while at the same time considering “precision regulations.” Rather than sweeping, broad-based regulations, we need to target problem areas and practices to protect our health, economy, and environment.
- **Better Use of Nonpoint Source Tools:** Build on methods and practices that have been proven to be effective. Also work on ways to develop enforceable alternative accountability frameworks or provide “reasonable assurance” that nonpoint pollution source controls are achieving desired results.

More details about these suggested next steps will be provided by the Task Group in the near future. The Task Group report can be found online at www.epa.gov/waterscience.