ENVIRONMENTAL WORKING GROUP

1436 U Street NW, Suite 100
Washington, DC 20009
T: 202.667.6982
F: 202.232.2592

Protecting Public Health from Drinking Water Pollutants Will Require EPA to Set Enforceable Standards for Contaminant Candidate List Chemicals

Statement of Olga Naidenko, Ph.D., Senior Scientist
Environmental Working Group

To the Environmental Protection Agency
Science Advisory Board (SAB)
Public Teleconference on the EPA SAB Drinking Water Committee report
on EPA's draft Drinking Water Contaminant Candidate List 3

August 13, 2008

Environmental Working Group (EWG) is a not-for-profit public health and environmental research and advocacy organization based in Washington, DC. Toxic chemicals that pollute the nation's air, food, and water are the primary focus of EWG's research. With this letter, we provide detailed comments and recommendations to the EPA's Science Advisory Board (SAB) Drinking Water Committee regarding its review of the EPA's draft Drinking Water Contaminant Candidate List 3 (CCL3) (US EPA 2008a).

EWG stresses the urgent need for the EPA to promulgate drinking water standards for widespread chemical pollutants that pose health risks to millions of Americans. Specifically, we urge the SAB Drinking Water Committee to advise the EPA to:

- Move beyond simply listing water contaminant chemicals by establishing regulatory standards for CCL3 pollutants in drinking water;
- Include in the CCL3 perfluorooctanoic acid (PFOA) and other perfluorochemicals that have been found in drinking water, in the environment, and in people and establish drinking water standards for these chemicals;
- Use the CCL process effectively so as to protect drinking water supplies from pollution by pharmaceuticals and antimicrobial chemicals.

Details and our rationale for these recommendations are provided below.

1. Establish regulatory standards for CCL3 pollutants in drinking water.

The Safe Drinking Water Act (SDWA) requires EPA to publish an updated Contaminant Candidate List every five years, detailing currently unregulated drinking water contaminants that may pose human health risks. From this list, EPA must determine whether to establish tap water standards for at least five contaminants. The draft CCL3, now under review by the SAB Drinking Water Committee, includes 93 chemicals or chemical groups (US EPA 2008a). We

support the EPA's decision based on the National Academy of Sciences' National Research Council's recommendations to use a multi-step approach for developing a draft CCL3 from a broadly defined "chemical universe" of potential drinking water contaminants. However, EWG is very concerned that so far the CCL process did not result in an establishment of even a single national primary drinking water regulation. EWG analysis of nationwide tap water found almost 100 percent compliance with enforceable health standards on the part of the nation's water utilities. The problem, however, is EPA's failure to establish enforceable health standards and monitoring requirements for scores of widespread tap water contaminants.

The track record of the CCL program raises many reasons for concern, because in twelve years of this program's existence, EPA has not developed drinking water standards for even a single chemical listed in the CCL. The CCL1 issued in 1998 included 50 chemicals (US EPA 2008b). After a five-year review period, the Agency published its decision to *not* regulate nine CCL1 contaminants, including insecticides aldrin and dieldrin, herbicide metribuzin, and industrial chemicals hexachlorobutadiene and naphthalene (US EPA 2003). The CCL2 issued in 2005 included 42 chemicals; this list was nearly identical to CCL1, except that it excluded those CCL1 chemicals that the Agency decided not to regulate (US EPA 2008b). Recently, the Agency has published its decision to *not* regulate eleven of 42 CCL2 chemicals, instead merely updating health advisories for seven of them (US EPA 2008c). Taken together, these actions of the EPA suggest that the CCL process has been primarily used by the Agency as a way to shield toxic water pollutants from regulatory scrutiny by deciding to *not* issue Regulatory Determinations.

The list of eleven CCL2 contaminants now exempted from EPA regulations includes degradation products of pesticides dacthal and DDT, insecticide Fonofos, herbicides Terbacil and *s*-ethyl dipropylthiocarbamate (EPTC), soil fumigant 1,3-dichloropropene (Telone), and industrial chemicals dinitrotoluene and tetrachloroethane (US EPA 2008d). While the EPA claims that none of these contaminants "were found nationally at levels of public health concern in public water systems" (US EPA 2008c), EWG's national tap water quality database indicates the opposite. According to data collected by hundreds of water utilities around the country, the chemicals that the EPA decided to not regulate are present in drinking water sources that serve hundreds of thousands of people (EWG 2005). For example, between the years 1998 and 2003, 486 thousand Americans in five states were served tap water contaminated with herbicide dacthal; 286 thousand Americans in six states were exposed to tap water contaminated with dieldrin; 113,428 people were drinking water contaminated with 1,3-dichloropropene and 37 thousand Americans in four states were served tap water contaminated with aldrin.

Furthermore, in the CCL2 Final Regulatory Determination, EPA deferred on the regulation of perchlorate, toxic rocket fuel chemical that contaminates water supplies in at least 28 states nationwide (GAO 2005). EPA also avoided making any regulatory determination on fuel additive methyl tert-butyl ether (MTBE), another frequent ground water pollutant (US EPA 2008d). For perchlorate and MTBE, the Agency has simply transferred these chemicals from CCL1 (US EPA 2003) to CCL2 (US EPA 2008d) and now to draft CCL3 (US EPA 2008a, b), without establishing enforceable drinking water standards for these pollutants. And in both cases the contamination problem is enormous. Between 1998 and 2003, 32.7 million people in 632

communities drank water contaminated with MTBE. In 18 of these communities, tap water was contaminated at levels above health-based thresholds (EWG 2005). In the same period, 26.2 million people in 86 communities drank water contaminated with perchlorate (EWG 2005). In eight of these communities, tap water was contaminated at levels above health-based thresholds. Perchlorate can alter thyroid hormone levels critical to a child's healthy development (reviewed in EWG 2006 and references therein). Moreover, a landmark 2006 study from the Centers for Disease Control (CDC) found significant effects at perchlorate levels five times lower than EPA's current "safe" dose (Blount 2006). This new research indicates that many Americans are likely exposed to levels of perchlorate that pose potential health risks.

In its review of EPA's draft CCL3, SAB Drinking Water Committee already expressed a strong concern that "the number of contaminants on the CCL keeps increasing in every iteration and yet regulatory determinations are only made for 5-10 contaminants every five years" (SAB 2008). The SAB comments indicate a significant weakness in the current CCL approach: It is not sufficient for the EPA to merely list unregulated pollutants. Rather, the Agency needs to move forward and set enforceable standards for these drinking water contaminants. EWG urges the SAB Drinking Water Committee to provide strong guidance to the EPA on the need for greater protection of the nation's tap water supplies and for increased health protections from a number of pollutants that are commonly found but currently unregulated. Public health protection can only be ensured by establishing regulatory standards for CCL3 pollutants in drinking water.

2. Along with perfluorooctanoic acid (PFOA), include additional perfluorochemicals in the CCL3 that have been found in drinking water, the environment, and people, and establish drinking water standards for these chemicals.

In comments recently provided to the EPA, EWG urged the Agency to list a full range of perfluorochemicals (PFCs) on the CCL3, including not only perfluorooctanoic acid (PFOA), but also perfluorooctanesulfonic acid (PFOS), perfluorobutanoic acid (PFBA), and other PFCs found in drinking water, environment and people, and to establish drinking water regulations for these chemicals, especially PFOA (EWG 2008a). PFCs are persistent, long-lasting industrial chemicals that have been utilized in a variety of manufacturing applications such as production of non-stick Teflon cookware, stain-proof Scotchgard products, grease-resistant food packaging and other types of paper materials, as well as carpets, water-proof textiles, and fire-fighting foam. In addition to the major fluorochemical producers (DuPont and 3M in the United States), many secondary manufacturers have used PFCs for decades in their products. Industrial wastewater discharges and air emissions of PFCs from businesses that produce stain- and grease-resistant paper, carpets, textiles, and furniture likely contributed to the PFC pollution of drinking water supplies across the country. Due to their extraordinary stability, PFCs last in the environment for thousands of years. PFCs accumulate in bodies of both wildlife and humans, recirculating through groundwater, lakes, rivers, and oceans, and coming back to expose people via water, food, air and dust. These toxic chemicals are now found in many areas of the country, in many bodies of water, and in blood of more than 98% of all Americans (Calafat, Kuklenyik 2007; Calafat, Wong 2007). EWG review found that at least 11 different states have documented

drinking or ambient water contamination with PFCs (EWG 2008a) and a national survey is critically needed to reveal the full extent of PFC water contamination.

Dozens of studies in humans and in animals have linked PFC exposure with impaired fetal and neonatal development, changes in reproductive and thyroid hormones, compromised immune and liver function, increased blood cholesterol levels, and potential predisposition to chronic diseases later in life (Apelberg 2007; Fei 2007; Frisbee 2008; Lau 2007; Leonard 2007; Lundin 2007). Given the widespread use of PFCs in industrial applications and consumer goods ranging from food packaging to carpets and textiles, as well as detection of multiple PFCs in bodies of 98% of Americans, PFC contamination of drinking water requires thorough scrutiny in order to meet current scientific and regulatory standards for safety.

Without federal health standards for PFCs, individual states have been forced to set their own standards so as to protect their citizens. For example, PFOA standards or risk-based levels have been established by North Carolina (2 μg/L) (NCDENP 2008), Minnesota (0.5 μg/L) (MDH 2007) and New Jersey (0.04 μg/L) (NJDEP 2007). The 2006 consent order between EPA and DuPont required the company to offer alternative drinking water source or treatment for both public and private water users living near the Washington Works plant in Parkersburg, West Virginia whenever PFOA levels in their drinking water exceed 0.5 μg/L (US EPA 2006). When confronted with such regulatory patchwork and the lack of guidance from the EPA, many states do not know how best to proceed, leaving the health of Americans in jeopardy (Hawthorne 2008; Sohn 2008). Many other states do not have the resources or expertise to establish and enforce drinking water standards for PFCs. Most states and the people who live in them depend on the EPA to protect them from drinking water contaminants. A failure to act will leave the residents in those states drinking tap water contaminated with highly toxic and persistent PFC pollutants for many years to come.

We urge the SAB Drinking Water Committee to use this meaningful opportunity to promote EPA regulation of PFOA and other PFCs that are commonly detected in people and the water sources. Inclusion of PFCs in the CCL3 and subsequent establishment of health-protective standard for PFC contamination of drinking water will safeguard the health of millions of people, especially children and set a much-needed standard for regulation of industrial chemicals in nation's water sources.

3. Use the CCL process effectively so as to protect drinking water supplies from pollution by pharmaceuticals and antimicrobial chemicals.

EWG analysis of water utilities' tap water test results shows that nationwide, drinking water contaminated with 260 chemicals is being served to 210,528,000 people in 42 states (EWG 2005b). Fifty six percent of those people drink water with one or more contaminants present at levels above non-enforceable EPA guidelines. Of especial concern is drinking water pollution with pharmaceuticals and antimicrobial chemicals. As highlighted by the recent national investigation by the Associated Press, a wide range of pharmaceuticals that include antibiotics,

sex hormones, and drugs used to treat epilepsy and depression, are contaminating the drinking water supplies of at least 41 million Americans (Mendoza 2008).

Pharmaceutical residues contaminate drinking water supplies when people take various prescribed and over the counter medications. While their bodies absorb and metabolize some of the chemicals, the rest is flushed out of the body and down the drain. Wastewater plants are not equipped to fully remove these persistent contaminants that eventually end up in the streams and then in our drinking water. Pharmaceuticals, hormones, pesticides, and anti-microbial ingredients from personal care products contaminate many streams around the entire United States (Kolpin 2002). As a result, millions of Americans are being exposed to low-level mixtures of these highly potent compounds via their drinking water every day. All of the pharmaceuticals reported in drinking water supplies are unregulated in treated tap water. So far, the federal agencies have failed to set standards for pharmaceuticals which are generally exempted by the FDA from any environmental assessment (FDA 2008).

While developing the present version of CCL3, EPA took a positive initial step of including 287 pharmaceuticals in the "chemical universe" of potential drinking water pollutants. However, in the end, nitroglycerin was the only pharmaceutical listed in the draft CCL3 (US EPA 2008a). This nearly complete elimination of pharmaceuticals from consideration under the CCL process stands in stark contrast with the EPA's acknowledgement that the Agency "is aware of concerns regarding the potential presence of pharmaceuticals in water supplies" (US EPA 2008a) and the findings by the U.S. Geological Survey (Kolpin 2002) that veterinary and human antibiotics, as well as prescription and nonprescription drugs, are frequently found in our streams, many of which serve as important sources of drinking water. This situation urgently needs to be remedied. EPA needs to require water utilities to test for the presence of pharmaceuticals and antimicrobial chemicals. The Agency should also set health-protective standards for these chemicals in ambient and drinking water sources.

EWG calls on the SAB to guide EPA's regulation of antimicrobials and pharmaceuticals in tap water so as to protect the health of all Americans. EPA needs to show leadership and act with utmost dedication to protecting public health by mandating monitoring and setting enforceable health standards for these hazardous contaminants. With the SAB support, the CCL process can become an effective vehicle for protecting drinking water from pharmaceutical residues and other contaminants. The SAB guidance will serve as the first, much needed step for ensuring the long-term health of our tap water – and the people who drink it.

Conclusion

In summary, EWG urges the SAB to push the EPA to (1) move beyond simply listing chemicals on the CCL3 and actually establish enforceable drinking water standards for a significant number of the contaminants on the list; (2) include not only PFOA but also other commonly found members of the incredibly persistent perfluorochemicals on the CCL3, and move to establish enforceable standards for these compounds; and (3) protect drinking water supplies from

contamination by pharmaceuticals and antimicrobials by listing these chemicals in the CCL3 and subsequently establishing health-protective standards for these pollutants.

Federal drinking water policies and regulations should be set to ensure that vulnerable populations, including pregnant women and children, are protected from chemical contaminants in drinking water. Most states do not have the resources to establish or enforce their own drinking water standards, and people in these states depend on strong protections from the EPA. Regulation of these pollutants on the national level will assure equitable and uniform protection for the health of all Americans.

References

Apelberg BJ, Witter FR, Herbstman JB, Calafat AM, Halden RU, Needham L, et al. 2007. Cord Serum Concentrations of Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoate (PFOA) in Relation to Weight and Size at Birth. Environ Health Perspect 115(11): 1670-6.
Blount BC, Pirkle JL, Osterloh JD, Valentin-Blasini L, Caldwell KL. 2006. Urinary perchlorate and thyroid hormone levels in adolescent and adult men and women living in the United States. Environ Health Perspect 114(12): 1865-71.
Calafat AM, Kuklenyik Z, Reidy JA, Caudill SP, Tully JS, Needham LL. 2007. Serum concentrations of 11 polyfluoroalkyl compounds in the u.s. population: data from the national health and nutrition examination survey (NHANES). Environ Sci Technol 41(7): 2237-42.
Calafat AM, Wong LY, Kuklenyik Z, Reidy JA, Needham LL. 2007. Polyfluoroalkyl chemicals in the U.S. population: data from the National Health and Nutrition Examination Survey (NHANES) 2003-2004 and comparisons with NHANES 1999-2000. Environ Health Perspect 115(11): 1596-602.
EWG. 2005. Environmental Working Group: National Tap Water Quality Database. Available: http://www.ewg.org/tapwater [accessed May 21 2008].
EWG. 2006. Under Proposed Rocket Fuel Standards, Many Women Would Need Treatment To Protect Baby. Available: http://www.ewg.org/reports/thyroidthreat [accessed July 28 2008].
EWG. 2008a. EWG Urges Drinking Water Standards for Teflon Chemical. Available: http://www.regulations.gov/fdmspublic/component/main?main=DocumentDetail&d=EPA-HQ-OW-2007-1189-0128 [accessed July 28 2008].
EWG. 2008b. Pesticide in Soap, Toothpaste and Breast Milk - Is It Kid-Safe? Available: http://www.ewg.org/reports/triclosan [accessed July 23 2008].
FDA. 2008. Food and Drug Administration Office of Pharmaceutical Science: Environmental Impact Review at the Center for Drug Evaluation and Research. Available: http://www.fda.gov/cder/ops/environment.htm [accessed May 21 2008].
Fei C, McLaughlin JK, Tarone RE, Olsen J. 2007. Perfluorinated Chemicals and Fetal Growth: A Study within the Danish National Birth Cohort. Environmental Health Perspectives 115(11): 1677-82.
Frisbee S. 2008. The C8 Health Project: How a Class Action Lawsuit Can Interact with Public Health - History of Events. Available: http://www.hsc.wvu.edu/som/cmed/ophp/grandRoundsWebcast.asp [accessed May 12 2008].
GAO. 2005. Perchlorate: A system to tract sampling and cleanup results is needed. GAO-05-462. 20 May 2005.
Hawthorne M, Elejalde-Ruiz A. 2008. Tribune Special Report: What's in your water? Chicago Tribune April 17, 2008.
Kolpin DW, Furlong ET, Meyer MT, Thurman EM, Zaugg SD, Barber LB, et al. 2002. Pharmaceuticals, hormones, and other organic wastewater contaminants in U.S. streams, 1999-2000: a national reconnaissance. Environ Sci Technol 36(6): 1202-11.
Lau C, Anitole K, Hodes C, Lai D, Pfahles-Hutchens A, Seed J. 2007. Perfluoroalkyl acids: a review of monitoring and toxicological findings. Toxicol Sci 99(2): 366-94.
Leonard RC, Kreckmann KH, Sakr CJ, Symons JM. 2007. Retrospective Cohort Mortality Study of Workers in a Polymer Production Plant Including a Reference Population of Regional Workers. Ann Epidemiol 18(1): 15-22.
Lundin JI, Alexander BH. 2007. Mortality of Employees of an Ammonium Perfluorooctanoate Production facility. Final Report to US EPA Office of Pollution Prevention and Toxics (OPPT) Docket No AR-226.

MDH. 2007. Minnesota Department of Health: Groundwater Health Risk Limits for Perfluorochemicals. Available: http://www.health.state.mn.us/divs/eh/groundwater/perfluorohrls.html [accessed May 20 2008].
Mendoza. 2008. Experts Drink in the Data. Associated Press March 16, 2008.
NCDENP. 2008. North Carolina Department of Environment and Natural Resources: Recommended Interim Maximum Allowable Concentration for Perfluorooctanoic Acid (PFOA or C8). Available: h2o.enr.state.nc.us/admin/emc/documents/03wqc01c.doc [accessed May 20 2008].
NJDEP. 2007. New Jersey Department of Environmental Protection: Guidance for PFOA in Drinking Water at Pennsgrove Water Supply Company Available: http://www.state.nj.us/dep/watersupply/pfoa.htm [accessed May 20 2008].
SAB. 2008. US EPA Science Advisory Board Drinking Water Committee Review of EPA's Contaminant Candidate List (CCL3): Committee Members' Comments 4/23/2008. Available: http://yosemite.epa.gov/sab/SABPRODUCT.NSF/MeetingCal/C990CC0808123428852573C4007A5B6F?OpenDocument [accessed July 28 2008].
Sohn P. 2008. Sampling of drinking water to track emerging chemical. Chattanooga Times Free Press Monday, February 11, 2008.
US EPA. 2003. Fact Sheet: Announcement of Regulatory Determinations for Priority Contaminants on the Drinking Water Contaminant Candidate List. EPA 815-F-03-007. Available: http://www.epa.gov/safewater/ccl/reg_determine1.html [accessed July 28 2008].
US EPA. 2006. Fact Sheet: EPA, DuPont Agree on Measures to Protect Drinking Water Near the DuPont Washington Works. Available: http://www.epa.gov/region03/enforcement/dupont_factsheet.html [accessed December 28 2007].
US EPA. 2008a. Drinking Water Contaminant Candidate List 3--Draft. EPA-HQ-OW-2007-1189 FRL-8529-7. Federal Register: February 21, 2008 (Volume 73, Number 35). Available: http://www.epa.gov/fedrgstr/EPA-WATER/2008/February/Day-21/w3114.htm [accessed July 28 2008].
US EPA. 2008b. Drinking Water Contaminant Candidate List and Regulatory Determinations. Available: http://www.epa.gov/safewater/ccl/index.html [accessed July 28 2008].
US EPA. 2008c. EPA Determines Regulation Not Needed for 11 Potential Drinking Water Contaminants. Available: http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/d80fd6bad5f072f685257490006075 80!OpenDocument [accessed July 28 2008].
US EPA. 2008d. Fact Sheet: Final Regulatory Determinations for the Second Drinking Water Contaminant Candidate List (CCL 2). EPA 815-F-08-005 Available: http://www.epa.gov/safewater/ccl/reg_determine2.html [accessed July 28 2008].