

## **Evanston Water Utility participates in the data collection for the Unregulated Contaminant Monitoring Rule (UCMR)**

Recently, there have been media reports regarding pharmaceutical and personal care products (PPCP) in drinking water.

In May, 2008, the Evanston Water Utility analyzed its water to determine which products were present and at what level. Samples were collected from the finished tap water (after the water had gone through the treatment process) and from the raw or untreated Lake Michigan water.

Underwriters Laboratories (UL), certified by the United States Environmental Protection Agency (USEPA), analyzed the water for the presence of 55 different compounds. A list of all the compounds tested and those detected can be found in Table 1. The results of these tests are reported in concentrations of **parts-per-billion (ppb)**. As a reference, a part-per-billion is equal to one pinch of salt in 10 tons of potato chips or one cent in ten million dollars.

All three compounds found in the Evanston water samples were detected at levels less than one ppb. The compounds detected are discussed below:

### **Nicotine**

Nicotine was detected in the raw untreated water only at a trace concentration of 0.007 ppb. This compound was not detected in the finished tap water. Nicotine is a natural compound in tobacco plants and may also be released to the environment due to its use as an insecticide.<sup>1</sup>

### **Cotinine**

Cotinine was detected in the finished tap water at a trace concentration of 0.003 ppb and in raw, untreated water at 0.002 ppb. Cotinine is a metabolite of nicotine; a byproduct of nicotine as it is processed by the human body.<sup>2</sup>

### **Gemfibrozil**

Gemfibrozil was detected in the finished tap water at a trace concentration of 0.0010 ppb and in raw, untreated water at 0.0017 ppb. Gemfibrozil is a lipid and cholesterol modifying medicine. It is sold under the brand name Lopid®.<sup>3</sup>

To put the levels of the compounds detected into perspective, Gemfibrozil has a recommended dosage of 600 mg twice per day. Based on the level detected in Evanston's finished tap water, a person would have to drink 64 ounces of water per day for 16,000 years to achieve a single dosage.

Currently, neither the USEPA nor the Illinois Environmental Protection Agency (IEPA) regulates the levels of PPCP in drinking water. Some of these compounds are a part of the USEPA Unregulated Contaminant Monitoring Rule (UCMR), which is designed to

determine what level of regulations, if any, should be required with regards to levels found in drinking water.

The Evanston Water Utility proudly participates in the data collection for the UCMR and remains confident that compliance will be achieved to any new regulations that may be put in place in the coming years.

The most important thing to remember is there are ways to prevent these compounds from entering Lake Michigan. First and foremost is the proper disposal of unused and expired drugs. The City of Evanston Department of Health and Human Services in cooperation with the Solid Waste Agency of Northern Cook County (SWANCC) gives residents the opportunity to dispose of their expired and unused medications.

Residentially-generated unused and expired prescriptions and expired over-the-counter drugs are collected. No other hazardous or special wastes will be accepted. Residents should follow these guidelines when bringing in their prescriptions: medicines will be accepted only if in labeled containers; personal information on labels should or can be marked out with black felt tip pens.

Evanston residents can bring their items in to the cashier of the Department of Health and Human Services (847) 866-2969 between 9 a.m. to 4 p.m., Mondays through Fridays only.

For more information on these SWANCC Programs, contact SWANCC (847) 724-9205, [info@swancc.org](mailto:info@swancc.org) or visit [www.swancc.org](http://www.swancc.org).

The Evanston Water Utility is committed to providing water which meets or exceeds all governmental regulations for public water supplies. Please contact the Water Treatment Facility at (847) 866-2942 if you have any additional questions or concerns.

#### Work Cited

<sup>1</sup><http://www.speclab.com/compound/c54115.htm> Retrieved 7/18/2008

<sup>2</sup><http://www.cotinine.com> Retrieved 6/10/2008

<sup>3</sup><http://www.medicinenet.com/gemfibrozil/article.htm> Retrieved 7/18/2008

Soucie, Bill. *Pharmaceutically Active Compounds in Untreated Lake Michigan Water*, Central Lake County Joint Action Water Agency, April 2008.

Table 1. Results of Pharmaceutical and Personal Care Product Samples collected in May 2008.

Compound	What is it?	Detected in Finished Tap Water ?	Detected Untreated Lake Michigan Water?	What is the lowest level you can detect?	Units
acetaminophen	analgesic	No	No	0.005	parts-per-billion
antipyrine	decongestant	No	No	0.001	parts-per-billion
aspirin	pain relief	No	No	0.05	parts-per-billion
azithromycin	antibiotic	No	No	0.001	parts-per-billion
bacitracin	antibiotic	No	No	0.5	parts-per-billion
bezafibrate	cholesterol control	No	No	0.0005	parts-per-billion
caffeine	stimulant	No	No	0.05	parts-per-billion
carbadox	antibiotic (animal)	No	No	0.05	parts-per-billion
carbamazepine	anti-convulsant	No	No	0.001	parts-per-billion
chloramphenicol	antibiotic	No	No	0.005	parts-per-billion
chlorotetracycline	antibiotic	No	No	0.05	parts-per-billion
ciprofloxacin	antibiotic	No	No	0.05	parts-per-billion
clofibrin acid	cholesterol control	No	No	0.0005	parts-per-billion
cotinine	nicotine metabolite	Yes, 0.003	Yes, 0.002	0.001	parts-per-billion
DEET (N,N-diethyl-m-toluamide)	insect repellent	No	No	0.005	parts-per-billion
diclofenac	anti-inflammatory (NSAID)	No	No	0.0005	parts-per-billion
dilantin	anti-epileptic	No	No	0.002	parts-per-billion
diltiazem	hypertension treatment	No	No	0.001	parts-per-billion
doxycycline	antibiotic	No	No	0.05	parts-per-billion
enrofloxacin	antibiotic (animal)	No	No	0.5	parts-per-billion

erythromycin	antibiotic	No	No	0.001	parts-per-billion
fluoxetine (Prozac)	antidepressant	No	No	0.001	parts-per-billion
gemfibrozil	lipid reduction	Yes, 0.001	Yes, 0.0017	0.0005	parts-per-billion
ibuprofen	anti-inflammatory (NSAID)	No	No	0.05	parts-per-billion
lasalocid	growth promoter (animal)	No	No	0.001	parts-per-billion
levothyroxine (synthroid)	thyroid hormone replacement	No	No	0.002	parts-per-billion
lincomycin	antibiotic	No	No	0.0001	parts-per-billion
monensin	antibiotic (animal)	No	No	0.0001	parts-per-billion
naproxen	anti-inflammatory (NSAID)	No	No	0.002	parts-per-billion
narasin	growth promoter (animal)	No	No	0.0001	parts-per-billion
nicotine	alkaloid found in tobacco	No	Yes, 0.007	0.005	parts-per-billion
norfloxacin	antibiotic	No	No	0.5	parts-per-billion
oleandomycin	antibiotic	No	No	0.001	parts-per-billion
oxytetracycline	antibiotic	No	No	0.5	parts-per-billion
paraxanthine	caffeine metabolite	No	No	0.005	parts-per-billion
penicillin G	antibiotic	No	No	0.002	parts-per-billion
penicillin V	antibiotic	No	No	0.002	parts-per-billion
prednisone	steroid	No	No	0.002	parts-per-billion
roxithromycin	antibiotic	No	No	0.001	parts-per-billion
salinomycin	antibiotic (animal)	No	No	0.0001	parts-per-billion
simvastatin	cholesterol reduction	No	No	0.001	parts-per-billion

sulfachloropyridazine	antimicrobial	No	No	0.005	parts-per-billion
sulfadiazine	antibiotic	No	No	0.005	parts-per-billion
sulfadimethoxine	antibiotic (animal)	No	No	0.0001	parts-per-billion
sulfamerazine	antibiotic (animal)	No	No	0.005	parts-per-billion
sulfamethazine	antibiotic	No	No	0.001	parts-per-billion
sulfamethizole	antibiotic (animal)	No	No	0.005	parts-per-billion
sulfamethoxazole	antibiotic	No	No	0.002	parts-per-billion
sulfathiazole	antibiotic (animal)	No	No	0.005	parts-per-billion
theobromine	stimulant	No	No	0.05	parts-per-billion
theophylline	bronchodilator	No	No	0.005	parts-per-billion
triclosan	antibacterial in soap	No	No	0.005	parts-per-billion
trimethoprim	antibiotic	No	No	0.001	parts-per-billion
tylosin	antibiotic (animal)	No	No	0.001	parts-per-billion
virginiamycin M1	antibiotic (animal)	No	No	0.0005	parts-per-billion