



U.S.

With Data and Resolve, Tacoma Fights Pollution

By FELICITY BARRINGER JUNE 12, 2014

TACOMA, Wash. — Last year, environmental engineers working for this city had an unnerving worry. After a decade and tens of millions of dollars devoted to a fastidious cleanup of its corner of Puget Sound, Tacoma’s shore front was in danger of being contaminated with a highly toxic chemical.

Working their way upstream, the engineers discovered the source of the problem: a storm drain in a residential neighborhood. Black goo stuck to its sides was old grout that contained large concentrations of polychlorinated biphenyls, or PCBs. Used in local road building in 1975, PCBs, odorless and carcinogenic, were outlawed soon thereafter. Yet they were swept up and sent mostly through drain pipes on their way to Puget Sound.

More than four decades after the 1972 passage of the federal Clean Water Act and after years of expensive cleanups like the one here, industrial water pollution from factory pipes is closely monitored and, by many measures, on the way to being vanquished.

But a menace is coming from a surprising source: rain, and the storm water it produces. It scours all corners of a watershed, carrying with it things like leftover industrial pollutants, airborne toxins, automotive oil and grease, pesticides from lawns, and pharmaceuticals from leaky septic tanks.

As Seth P. Brown, an engineer with the Water Environment Federation, said, normal storm water runoff “is the only source of water

pollution in the country that's getting worse.”

Quoting from figures used by William D. Ruckelshaus, a former Environmental Protection Agency administrator, Mr. Brown said that while 40 years ago industrial pipes contributed 85 percent of water pollution, now 85 percent comes from storm water and the runoff from farmers' fields. These flows end in bodies of water like the Chesapeake Bay and Puget Sound.

As localities all over the country try to deal with this largely ignored element of environmental protection, Tacoma's approach, a combination of science and sheer doggedness, is being studied by officials from as far away as Brazil, Thailand, Italy and Russia.

The critical tool for the city is data — a detailed, continuing and chemically specific picture of what is in seven outlets that flow into the Foss Waterway and then into the Puget Sound, as well as what is in nearly 30 sediment traps that hold storm water from various parts of the city.

New pollution is detected when it shows up as a change in chemical maps of storm water. Basic forensics — knowing how water gets from point A to point B to point C — create a fingerprint-like reliability in knowing where it came from. That is how the PCBs in the neighborhood drain were discovered.

Tacoma has other means at its disposal, including the willingness to heavily fine polluters who are caught, persistent pipeline scrubbing and a plan to create so-called rain gardens, something popularized in the Washington, D.C., suburb of Prince George's County, Md., in the early 1990s. In a rain garden, storm water, along with the toxins it carries, is reabsorbed in the soil as it was before pavement covered the landscape, keeping the water out of storm drains. The pollution does not travel and is likely to remain harmless.

Rain gardens turn the thinking of mid-20th-century engineers on its head. Their goal, said Jeff Lape, the deputy director of science and technology at the E.P.A., was “to get water off a site as quickly as possible.” It was particularly true in industrial areas, where classic pollutants like

lead, zinc, mercury, arsenic, copper and PCBs were flushed with it.

Rain gardens, depressions often filled with plants with absorbent root systems, keep water from traveling and are now a common feature in plans for suburban development nationwide.

“This is a very powerful way of working with storm water — controlling it at the source,” said Larry Coffman, who was a top engineer for Prince George’s County.

As the thinking changed about how to engineer the removal of water from cities and suburbs, the concerns about pollutants have also been evolving. Classic industrial pollutants, like PCBs, are still a matter of serious concern. But so are the products of leaking septic systems, including pharmaceuticals like estrogen and antiseizure medication.

“What we’re worried about is what’s recontaminating the system,” said Joel Baker, the science director at the Center for Urban Waters in Tacoma, a joint city-academic nonprofit research center. He also said that the forensic work of the scientists and the city changed the ability to enforce antipollution laws.

“We talk about being able to go to anyone — an individual, a house, a business — who is discharging something,” Dr. Baker said, “and unambiguously trace back to them. That gets you into a whole different conversation with people about responsibilities and remedies.”

Tacoma’s aggressiveness stems from the city’s determination to never again face the headaches and expense that go with being a designated Superfund site, which was done to Commencement Bay in Tacoma by the E.P.A. Under a 1980 law, Congress authorized the E.P.A. to create a priority list of sites where oozing toxic chemicals posed a hazard to human health and the surrounding environment.

Rather than assigning blame to individual industries, Tacoma took on the responsibility of cleaning the site and keeping it clean. It now also honors legal agreements it has signed promising the federal government that it will stay clean.

“Having invested \$105 million, the city is serious about not cleaning

up again,” said Mike Slevin, the city’s chief environmental engineer, who controls an annual budget of at least \$3.5 million to monitor 440 miles of storm water pipes.

Mr. Slevin can get tough. When someone recently noticed a white cloud billowing through the seawater, Mr. Slevin’s staff traced it upstream to a catch basin near where wrecked cars are stored. A big rig full of coffee creamer had been towed there after an accidental fire. A local towing company had cleared up the accident and taken the debris to the impoundment center.

But by accident or design — accounts differ — the treads of a small tractor cleaning up the mess crushed a good portion of the creamer containers, sending gallons of the substance into the ocean. The result: a \$10,000 fine for the towing company, Bill’s Towing, for its messy cleanup.

“That was our first encounter” with the environmental enforcers, said Tom Lomis, an owner of Bill’s Towing. Now accident cleanups are his passion.

“I’m not going to be fined again for not cleaning up a mess,” Mr. Lomis said. He added: “This problem of runoff is relatively new to our industry. Some places really don’t care, but Tacoma is on top of it.”

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