

Oil and Grease and the River----Sherry Sass 4/18/06

The water's flowing in the Santa Cruz River between Rio Rico and Tubac, but it still stinks. Since the multi-year drought we've had, the bulk of the flow is currently effluent, treated wastewater from the bi-national treatment plant in Rio Rico. So how can we help reduce that smell, and help the river heal? In this time of focus on renewable energy development, part of the answer may have to do with turning waste into energy.

The plant is now scheduled for a serious make-over, thanks in part to FOSCR and community pressure as well as many years of good government work, so that stink should be well on its way to disappearing in a few years. However, even a state-of-the-art sewage treatment plant has limitations on what it can properly handle. Some substances flowing into almost any plant can seriously degrade the treatment process and result in poor-quality effluent. Even when our new plant comes on-line, we need to protect it from these bad actors.

One of the major headaches for the Rio Rico plant is oil. Not the industrial kind (although that kind is certainly toxic to the plant); I mean the cooking kind. Even though it's an organic, bio-degradable substance, it clogs both sewer pipes and the treatment plant pipes and lagoons, wreaking havoc on the bacterial processes that do the hard work of purifying the wastewater coming in. And since over 2/3 of the sewage flowing into the plant is from the huge city of Nogales, Sonora, the majority of cooking oil messing up the treatment plant is likely from across the line. Oil and grease can also block sewage pipes, and are one cause of sewage overflows from manholes. At times, these raw sewage flows run right down the Nogales Wash on both sides of the border.

So how can this nasty waste disposal problem be fixed? Not only restaurants, but also the cafeterias in maquiladoras (large factories assembling parts from the U.S. with cheap Mexican labor) and other industrial sites and households contribute to the problem. Deep-fat frying is a time-honored and popular cooking method in our region, but proper disposal is problematic (especially in Mexico), so most waste oil goes down the drain.

Enter a creative team of problem-solvers from the Border Programs Unit of the Arizona Department of Environmental Quality (ADEQ). Hans Huth, the hydrologist of the group, saw an opportunity in the cooking-oil dilemma. Why try for heavy-handed regulation (which would have to be acceptable to and enforced by Mexican officials) when a money-saving energy source was waiting to be exploited? Hans had been running his own diesel vehicle on "biodiesel" (which is a much cleaner-burning energy source than regular, petroleum-based diesel) for the past six months. He made it himself, cheaply and easily, out of waste cooking oil. Why not do the same for the industrial sites, which could blend the eco-friendly fuel in their own vehicle fleets, and offset the cost of commercial diesel

fuel? That might make this “waste” oil suddenly too valuable to pour down the drain.

Hans approached the University of Arizona, the Rio Rico Fire District, and the Instituto Tecnológico de Nogales (Sonora: ITN) with the idea and suggested they submit a proposal to the EPA Border 2012 program. Border 2012 provides funding for projects that help solve binational environmental problems. These applicants proposed a “capacity building project” which would train and educate binational stakeholders in the production of this clean-burning alternative fuel from waste materials. As of this writing, the proposal has been approved by EPA and will document how to process waste oils for the production of biodiesel for an estimated sixty-seven cents per gallon (!). More importantly, the project will help educate the binational community on the proper disposal and recycling of waste oils. If this process catches on—and local industrial managers are sure to see its merits—a serious water quality problem will have been transformed into a renewable energy source.

Friends of the Santa Cruz River has funded \$1200 worth of equipment purchases so the ITN can get started, removing problematic waste food oils and grease from Mexican sewage and creating a renewable, clean-burning fuel. This process directly helps the river by improving the Rio Rico sewage plant’s functioning, which improves the quality of effluent it discharges into the river. That will have a big impact on the river’s water quality, and helps protect the shallow river aquifer from which we in Santa Cruz County get most of our drinking water. It is an investment FO SCR is proud to make in our binational watershed, and in our shared future.

Many of our current environmental problems may have similarly creative, economically- as well as ecologically-friendly solutions. We have but to support the scientists that are exploring more sustainable ways for us to live, the creative souls who think “outside the box”, and the wisest of our public servants, who really do work for the “greatest good for the greatest number”. It is good to know that in this political climate, such people still exist.

[Sherry Sass was trained as a biologist, and is President of Friends of the Santa Cruz River (FO SCR), a volunteer group dedicated to protecting the flow, water quality, and riparian habitat of the river. Visit www.friendsofsantacruzriver.org and http://www.epa.gov/r6border/az_so.htm for more information.

If you want to help this project do even more good, donate a Home Depot/Lowes/Harbor Freight gift card so the grant money can be stretched further. Contact Hans Huth at hjh@azdeq.gov if you’d like to made a donation.]