

CleanConnections

The Envelope, Please

In 2005, the Florida Department of Environmental Protection nominated JEA's Industrial Pretreatment program for a national pretreatment award. This award recognizes pretreatment programs with outstanding performance. The JEA Industrial Pretreatment (IP) program has demonstrated much improvement over the past few years and was honored to be nominated for the award. JEA recognizes that contributions from our Industrial Users (IUs) have been the key to our accomplishments. The IP program would like to celebrate the successes we have achieved through collaborative efforts. Thus, in 2006, the JEA IP program will begin an annual awards program by presenting the following awards:

- Platinum award – given to the Significant Industrial User (SIU) or Categorical Industrial User (CIU) that had no discharge violations in 2005 and demonstrated superior environmental performance.
- Gold award - given to the Non-significant Industrial User (NSIU) that had no discharge violations in 2005 and demonstrated superior environmental performance.
- P2 Award – given to an IU that made significant environmental improvements utilizing pollution prevention methodologies.
- Environmental Stewardship Award – given to all discharging IUs that were violation free in 2005.

By acknowledging industries with superior environmental performance JEA hopes to continue to foster the collaborative spirit that has been vital to improving the environmental quality of our community.

Speaking of Awards

The Florida Water Environment Association (FWEA) has just put out a call for nominations for its 2005 Awards. There is an opportunity to have an employee recognized for their contributions to wastewater treatment. The L.L. Hedgepeth Award is presented to an outstanding industrial wastewater operator. The operator must be a member of the FWEA. More information on this Industrial Pretreatment award can be found at: http://www.fwea.org/cmsitems/attachments/9/Callfor_Nominations.pdf

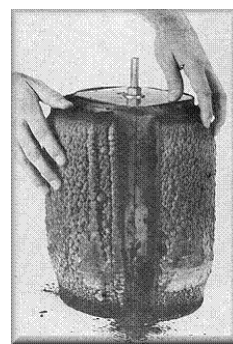
Pollutant of the Month – Hi-Ho Silver and Away!

We are not talking about the Lone Ranger's trusty steed. This is the precious metal used in electroplating, photo processing, x-ray development and commercial imaging. Dissolved silver from these processes discharged to the wastewater treatment plant can be toxic to the treatment plant's microbes at concentrations as low as 0.25 mg/L.

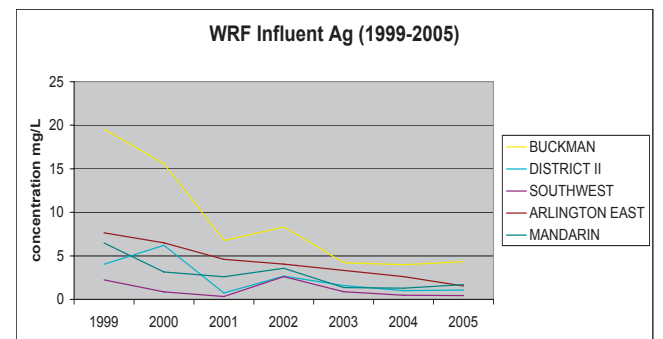
At the treatment plant, silver will take two paths. Most will accumulate in the Biosolids (sludge), while up to 25% can pass through to the river. This occurs because the biological processes of a municipal wastewater treatment facility are not designed to fully remove metals. Entry of silver into waterways at concentrations less than 0.1 mg/L can be toxic to both invertebrates and fish. Biosolids at JEA's Buckman Wastewater Reclamation Facility (WRF) are processed into pellets for land application. High silver concentrations can adversely affect JEA's ability to beneficially reuse this material.

There are several pretreatment options to ensure dissolved silver is not discharged to the sanitary sewer and then to the river. These include:

1. Off site recovery - requires the collection of all silver bearing waste streams and subsequent removal from the facility by a licensed hazardous waste transporter for recycling.
2. Onsite recovery - requires the installation and maintenance of silver recovery units. These units extract silver from the wastewater prior to discharge. These systems have limitations and must be serviced regularly to prevent units from becoming overloaded with silver. The silver is recovered for recycling.



Silver on an onsite recovery unit.



3. pH Precipitation – chemical addition is utilized to convert soluble silver to a solid. The solid form is then gravity separated from the waste stream and hauled off site for disposal as part of sludge.

The choice of pretreatment is generally dependent upon waste stream characteristics and volume. In 2002, JEA implemented the Silver Code of Management Plan (Ag CMP) to reduce silver loadings from commercial facilities that utilize photo and/or x-ray development. By implementing this best management program (see graph), Users have reduced the discharge of silver to the sanitary sewer and helped protect our community and environment.

Regulations – The Only Thing Constant is Change

As Bob Dylan once sang; ...times they are a-changin..., well at least the regulations are. On both local and national fronts changes are being made in the Pretreatment Program.

Local Changes

Local limits are the discharge standards determined by the local control authority (JEA) to be protective of a Water Reclamation Facility (WRF). The first step in evaluating local limits is to calculate the maximum amount of a pollutant that a WRF can receive and not exceed its limits (this is called the Maximum Allowable Headworks Loading or MAHL). Next, the pollutant is allocated to industries so as not to exceed the MAHL.

Industrial Pretreatment programs are required to re-evaluate their local limits every five years and JEA's time was up in 2005. A review of WRF historical data determined that for a few exceptions the current limits have been protective of its five WRFs. JEA evaluated only two pollutants; copper at the District 2 and Southwest WRFs, and molybdenum at the District 2 and Buckman WRFs.

At the District 2 plant, copper was determined to be over allocated and the local limit will be decreased from 3.38 mg/L to 1.0 mg/L. The Southwest WRF had a contrary situation, the copper was under allocated and with only one Industrial User the local limit for copper will be dropped. For molybdenum (Mo), properly allocating the pollutant was a little more problematic. JEA had hoped the establishment of the Cooling Tower BMP would avert a Mo limit. Currently there is no regulatory mechanism that would allow the use of a BMP in lieu of a local limit, so JEA was required to allocate Mo to industries at Buckman and District 2. There are a few options in allocating pollutants to industries. To maximize the allocation of Mo to industries that use it in industrial processes (non cooling tower uses), JEA used the contributory flow method. This method allocates a pollutant to industries that discharge Mo at levels above the domestic contribution. Industries discharging at or below domestic levels do not receive an allocation leaving more molybdenum for those facilities that need it. In the Buckman district, the Mo limit will be 2.66 mg/L. This limit will be allocated to only four industries that data show discharge Mo above domestic levels.

At District 2 only two Users were found to have molybdenum in their effluent. Each User will receive an individual limit established in their permit to ensure Mo allocations meet their needs.

JEA has also proposed the following changes to its regulation:

- Upper pH limit increased from 10.5 to 12.0 SU. This move will benefit JEA WRFs and certain industries:
 - o Help neutralize acidic conditions in the sewer system.
 - o Reduce H₂S production in sewer pipes.
 - o Increased alkalinity will help the WRFs remove ammonia and meet nitrogen limits.
 - o Reduces liability for industries that must store large quantities of sulfuric acid for neutralization.
- JEA BMPs will be enforceable control mechanisms.
- Language detailing proper secondary containment.

None of these changes are set yet. Final approval and adoption must go through the following steps:

1. FLDEP tentative approval – done.
2. JEA Board of Directors adoption of regulation – pending.
3. Public review and comment period.
4. FLDEP formal approval.
5. JEA modifies and re-issues permits.

In proposing these changes, JEA Industrial Pretreatment strives to continue to protect our treatment facilities and our waterways while balancing the needs of our industrial customers.

Federal Changes

The EPA has had a busy Fall and signed two rules that will affect the Industrial Pretreatment program.

The Pretreatment Streamlining Rule rule was signed in September with the intent to reduce administrative burden on both Control Authorities (JEA) and Industrial Users. Most of these changes affect Categorical Industrial Users (CIU). The following highlights many key changes:

- Allow the CA to set mass based limits for CIUs to encourage water conservation.
- Extended significant noncompliance status for late reports from 30 days to 45 days.
- Establishes non-significant CIU classification for CIUs discharging 100 gpd or less. This change will significantly reduce the monitoring requirements for these industries.
- Waive monitoring requirements for CIUs with pollutants not expected to be in the waste stream above intake water concentrations.
- Allow for certain CIUs with flow based mass limits to receive concentration based limits.

The EPA also signed the Cross-Media Electronic Reporting Rule that establishes the conditions for electronic reporting. JEA will be working to meet these requirements so electronic reporting will be available to industries.

As with the local changes the federal rules will go through several steps before they can be implemented:

1. FL Department of Environmental Protection incorporates the changes into the Florida Administrative Code (Chapter 62-625).
2. Adoption into JEA Industrial Pretreatment Regulation
3. Refer to steps 1-5 under Local Limits

Treatment Plant Update

The Buckman Water Reclamation Facility (WRF) has not been significantly impacted by industrial discharges and has been performing well. The molybdenum levels in the biosolid pellets remain low, enabling JEA to continue to beneficially reuse this byproduct.

The District 2 WRF has experienced problems in its primary clarifiers throughout the year. One issue resulted from discharges causing strong objectionable odors to emanate from the clarifiers. This odor was detected by the plant's neighbors and led to JEA receiving a civil penalty by the City of Jacksonville. Industrial Pretreatment has worked with a few local industries to prevent a recurrence and no odor complaints have been made since July 2005. The plant continues to receive discharges that cause the primary solids to rise to the surface. The cause of this phenomenon has yet to be determined.

Congratulations to JEA's Southwest WRF! The facility received the Gold award from the National Association of Clean Water Agencies (NACWA). The facility had no permit excursions in 2004. Great accomplishment operators!



Buckman Biosolids marketed as GreenEdge ©

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For more information about our program, forms, and past issues, please visit the JEA Industrial Pretreatment Website (<http://www.jea.com/business/services/industrialpre/index.asp>).