



# Inside Pretreatment Newsletter

February 27, 2008

## When is a SIU a SIU?

Over the years at EPA, I think this issue was the one where EPA provided the least guidance. It seemed that the decision was made on a case-by-case basis by POTWs. The POTW would provide the updated list of SIUs on the annual report. When it deleted a SIU, the explanation was typically “no identified pollutants of concern”, “flow less than 25,000 gpd”, “we are big enough that we can take their pollutant loading”, “pH was never measured below the local limit”, etc. Of course, the POTW expected that unless my office formally objected to the delisting, then a de facto approval had happened. The actual interpretation was that the POTW is responsible to evaluate and regulate SIUs and if one was delisted, that information would be evaluated during audits.

It is important to remember that the only time silence from an Approval Authority is an active decision, is where the POTW has submitted a non-substantial modification under 40 CFR §403.18(d) or equivalent. Under 40 CFR §403.8(f)(6) the initial list of Significant Industrial Users is a modification of the POTW's approved pretreatment program, requiring Approval Authority review and approval (as a non-substantial modification). After that, any change to the SIU listing is reported pursuant to 40 CFR §403.12(i)(1). That is for everyone who likes to read the regulations. Whether or not EPA or a state is your Approval Authority, these requirements are fairly consistently applied.

EPA (and states) has not been effective at following up on this issue because of the lack of resources. I think that it would be easy for Approval Authorities to design a system of POTW oversight procedures and boilerplate information requests (§308 of the CWA) if they desired. However, because of the absence of specific guidance for POTWs on how to collect and evaluate SIU data to make this decision, there is no National consistency and many POTWs have delisted SIUs without a framework to make a sound decision. This *lack of consistency* makes oversight difficult and time-consuming (similar to what Streamlining Regulations will cause in POTW oversight) and leaves POTW pretreatment staff wondering what data really needs to be collected and evaluated to make these decisions.

I think it is somewhat complicated to generalize on the type of data needed to demonstrate that a SIU is not a SIU. Each type of business has its quirks. However a few concepts are important (I always like to list concepts in newsletters).

- ✓ POTWs with approved programs are required to regulate SIUs.
- ✓ POTWs with non-approved programs (all other POTWs) are required to

- report SIUs to the NPDES permitting authority (see your NPDES permit).
- ✓ All POTWs are required to prevent IUs (any non-domestic discharger) from causing Pass-Through or Interference.
  - ✓ Delisting a SIU is not done through Best Professional Judgment only. The decision must be based upon analytical data and information relevant to the industry.
  - ✓ Many emerging pollutants of concern (mercury, nonylphenols, pharmaceuticals, etc) are discharged by businesses that many programs have sought to deregulate or delist.
  - ✓ You do not delist SIUs because you have a resource shortage and need to decrease your workload.
  - ✓ The delisting is not based upon flow from the IU only (do not decide delisting on the 25,000 gpd criterion only).

### **Data to Support Listing or Delisting**

The really important questions to answer here are: “What data do I need to collect and review?” and “How much data do I need to make a decision?”. The answers are relatively simple: You need all of the data necessary to make a technically-based decision.

Reiteration: This newsletter is directed at IUs that need to be evaluated as SIUs or those SIUs that the POTW is pondering to delist.

In general, the data you should have available for any SIU you are considering delisting should include:

- ✓ All historical monitoring data for specific pollutants.
- ✓ Flow data for the facility over the last 3 years. If you only have water usage, it is important to evaluate winter and summer water use to account for irrigation.
- ✓ A listing of all raw materials that the facility uses (trade names are not a great help here).
- ✓ Specific information on what and how much is discharged to the POTW.

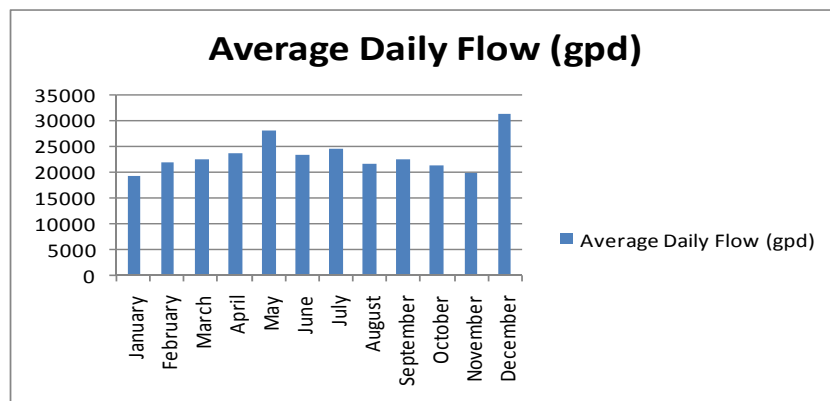
The most common businesses that POTWs tend to deregulate are hospitals (medical facilities), industrial laundries (Krispy Kreme facilities?), etc. Most of the delisting that POTWs reported to EPA Region 8 did not appear to be based upon adequate or complete data.

I think that EPA should provide examples of how to evaluate a SIU for listing or delisting.

## SIU Example

Example Facility: Hospital (This is based upon a facility for which I am currently designing a source control program)

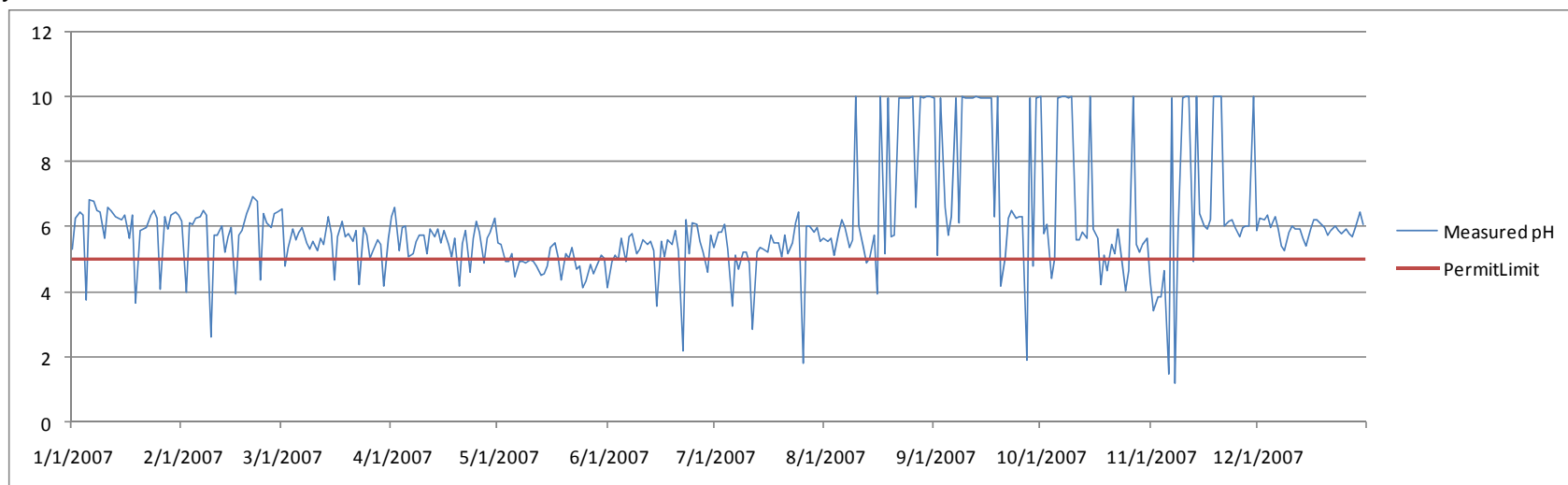
### Facility Flow:



As shown, the flow stays below 25,000 gpd except for 2 months: May and December. If the IU discharges above 25,000 gpd on any day, does this make it an SIU? Is this evaluated on a monthly basis? May and December were heavy watering months (spring and winter). The actual process wastewater was estimated to be less than 25,000 gpd, but this could not be verified. No separate metering. Is this facility an SIU based upon flow?

### pH measurements:

This facility has occasional pH excursions. The chart below is based upon approximately 525,600 data points (not fun crunching this amount of data). This data represents the minimum pH measured on any given day over the period of a year.



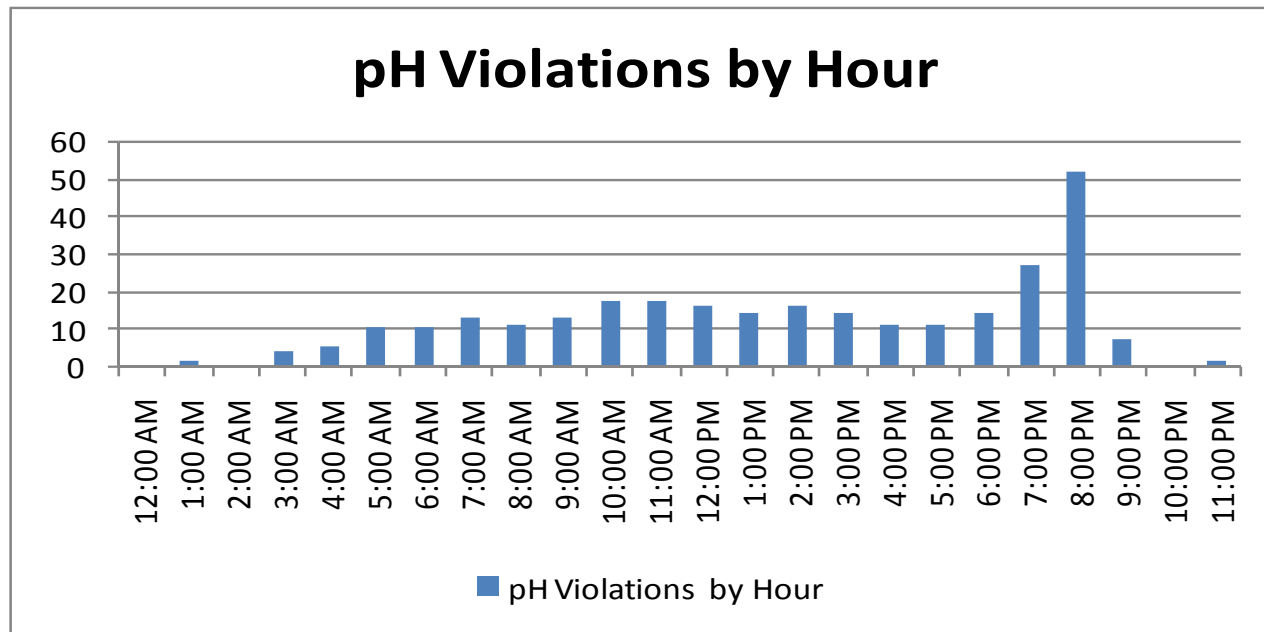
Data represents 365 days. pH measurements taken at 1 minute intervals, 24/7. The number of days where pH was less than 5: 63 days. This was 17% of the days. The total minutes of violation was during 2007 was 2300 minutes or 0.4% of the time.

Data considerations: If you based your decision on grab samples for pH at this facility, do you think you really had adequate data to make a decision? In this case, 99.6% of the time, the discharge was above a pH of 5. Continuous pH measurements give a different picture. Would you have detected the pH<2 discharges that occurred and would have triggered reporting under 40 CFR 403.12(p)? These discharges only occurred for 36 minutes total or 0.000069% of the

time (4 events and the total mass of wastewater discharged triggered reporting). Odds are you would have no idea these occurred, nor would the hospital if continuous pH monitoring was not required.

### Time of Discharges

When during the day (operating day) did the low pH discharges occur? The chart indicates that 55% of the violations occurred outside of the 8am - 5pm working hours. Would that narrow down your ability to detect a violation even more where you were using grab samples for pH while visiting the facility during the day?



## Chemical Inventory

On-going compilation and date review indicates that this facility has over **800 chemical raw materials**. Of the 816 chemical raw materials, 300 have a pH that is available (others are solids, gases or unknown). **67 of the 300** chemical raw materials with a measureable pH have a pH<5. That is 22% of the (primarily liquids) have a pH<5. Of the 67 chemical raw materials, at least 16 were disclosed to be discharged to the sewer. Of the 16 low pH products used and discharged to the sewer, at least 5 had the potential to cause a low pH in the final effluent. As investigation has shown since data was originally collected, this number is low, as is the number of total chemical raw materials.

Currently, for the 816 total chemical raw materials, it is estimated that there are over **2200 specific chemicals** that show up on the MSDSs as being present in significant quantities (trade names are of little use). This can be useful when trying to track down the discharge of specific pollutants. MSDSs only list component chemicals that are present at greater than one or five percent. Some also list particularly hazardous materials that are less than these percentages. Amazingly, some companies indicate that a MSDS is not required even for some questionable products (though they will provide them upon request). Imported products are interesting. Since many chemicals have a variety of common names, the CAS number is usually relied upon. I have found several MSDS where the CAS number was incorrect.

Some pollutants of concern that are not obvious in the trade names include: mercury, silver, osmium tetroxide, nonylphenols, various pesticides and bactericides, molybdenum, endocrine disruptors, etc.

Covering this in depth is beyond the scope of this newsletter.

It should be obvious that a couple of grab samples for pH or specific chemicals will tell you very little when it comes to characterizing some complex discharges. Basing your decision only on flow is even more questionable. In general, I have found that the best method is to have a complete chemical inventory of what is used at the facility and where, when and how much is discharged as a waste. This must be backed up with inspections.

Most facilities do not have this information on-hand. Putting together an inventory of specific chemicals and associated information is complicated and can take many days of effort. I can tell you how long when I wrap up this phase of my project (includes writing a database specific to inputting and tracking raw materials, physical-chemical characteristics,

NFPA ratings, volumes, components, locations, etc.).

Bottom Line (hospitals/medical facilities): Continuous pH monitoring should be conducted for at least one month. For local limits, daily composite samples for one week would be useful. For other pollutants of concern, data review (MSDS, actual on-site inventory) would be necessary. No good way to do that, but the facility would benefit from actually having knowing what is purchased, used and discharged.

I could go on for many pages. However, I wanted to provide an example for one facility and how I am evaluating the data. I am not doing this to delist this facility. As I had mentioned, I was contracted with to develop a computerized source inventory and control program and help eliminated low pH discharges.

There are other items to review, but it is important that a high standard is placed on delisting a SIU. Delisting should require fairly extensive background work before a SIU is delisted. The presumption should be that a discharger such as a hospital is a SIU until and unless a thorough evaluation is completed. Transfer this concept to other types of industries.

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Curt McCormick  
CWA Consulting Services, LLC

[www.CWACS.com](http://www.CWACS.com)  
[Curt@CWACS.com](mailto:Curt@CWACS.com)

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