Florida Department of Environmental Protection
Pretreatment Program
Chapter 62-625, F.A.C.

Local Limits Plan of Study Summary

The following is a summary of the necessary steps to develop a plan of study (POS) for the development or re-evaluation of local limits. For additional information on developing local limits, please refer to Chapter 4 of the *Florida Guidance Manual for Pretreatment Programs*.

Section 1: Plan of Study Basics

The first section of a POS contains the information from which the sampling plan (Section 2) is based upon. The first section contains the finalized list of pollutants of concern (POCs) and a summary of the steps taken to determine the final list of POCs. A POC is any pollutant that might reasonably be expected to be discharged to the WWF in sufficient amounts to pass through or interfere with the unit processes, contaminate its residuals or reclaimed water, cause problems in its collection system, or jeopardize its workers.

The results of priority pollutant scans of wastewater facility (WWF) influent, effluent, and residuals conducted during the previous two years can help identify pollutants discharged to the WWF and determine which are potentially POCs. If priority pollutant scans have not previously been done, as is typically the case when initially developing local limits, a minimum of one influent, effluent and residual scan must be done prior to determining the final list of POCs.

In general, if any of the following criteria are met, the pollutant should be designated a POC, unless adequate justification is provided in the POS for not doing so:

- The maximum pollutant concentration in a WWF effluent is more than one-half the allowable effluent concentration required to meet water quality criteria or permit discharge limits.
- The maximum pollutant concentration in the sludge is more than one-half the applicable residual disposal standards.
- The maximum pollutant concentration in a WWF influent grab sample is more than one-half the inhibition threshold.

- The maximum pollutant concentration in a WWF influent 24-hour composite sample is more than one-fourth the inhibition threshold.
- The concentration in the plant influent, adjusted through simple dilution analysis, exceeds water quality criteria or permit discharge limits by any amount.

In order to determine if there are additional potential POCs beyond those identified from the priority pollutant scans, the Control Authority must review:

- The environmental standards and other statutory and regulatory requirements that it must meet,
- Industrial user and other non-domestic discharges to assess which discharges, and which pollutants in those discharges, pose potential problems and,
- WWF historical data.

In order to benefit from the historical data, the Control Authority should, at a minimum, use the previous two years of historical data to determine which pollutants should be considered POCs for the local limits monitoring program and headworks analysis. Historical data includes industrial waste surveys, IU permit applications, Baseline Monitoring Reports, the results of IU self-monitoring, results of hauled wastewater monitoring, WWF compliance monitoring (including priority pollutant scans), and the results of the Control Authority's inspections of IUs. The historical data also includes all other data concerning past and present operations and maintenance of the WWF which may provide evidence of reductions in removal efficiency, pass through incidences, interferences, degradation of the collection system, emergencies such as sewer blockages, excessive corrosion, unusual odors, explosion hazards, explosion or fires, violations of NPDES permit conditions, water quality degradation or fish kills attributed to the WWF's discharge. The historical data may provide evidence of the cause of the problems identified, such as equipment failures, improper operation and maintenance, improper discharges of hauled wastewater, or industrial discharges.

Keep in mind the Control Authority may need to develop local limits to reduce aquatic toxicity. If whole effluent toxicity (WET) testing has shown the Control Authority's effluent is toxic, the pollutants responsible should be identified and designated POCs.

In addition to the POCs identified at this point, the Control Authority must include any pollutant for which the Control Authority has a pre-existing local limit, has a FDEP-issued domestic wastewater permit limit (including those designated "monitor only"), has an applicable residuals disposal standard, has caused operational problems or inhibitions at the WWF (including conventional pollutants and nutrients) in the past. Air quality standards are generally not the basis for POCs. However, a POTW or WWF may be required to control emissions to comply with the National Ambient Air Quality Standards or National Emission Standards for Hazardous Air Pollutants, which may impact POC selection. Other POCs will include EPA's list of 15 pollutants (arsenic, mercury, cadmium, molybdenum, chromium, nickel, copper, selenium, cyanide, silver, lead, zinc, 5-day BOD, TSS, and ammonia), unless it can be demonstrated the pollutant is not a POC.

Even though a pollutant is considered a POC, does not necessarily mean that a local limit must be developed for that particular pollutant. The final decision as to whether a local limit is necessary will depend on the results of headworks analysis.

This section of the POS must also contain a WWF process flow diagram with basic hydraulic and engineering design criteria. In order to properly schedule the sampling events, the hydraulic detention time between influent and effluent, and between any unit processes being analyzed, must be included in the POS.

Section 2: Sampling Plan

The second section of the POS outlines the local limits monitoring plan. The plan establishes, at a minimum, one sample point each for influent, effluent, and residuals within the WWF and sample points for the collection system. If the unit processes are to be sampled, the sampling plan will include those locations as well. The monitoring plan will establish the analytes to be sampled for at each sampling location. In the initial development of local limits, and most re-evaluations, all POCs will be sampled for at each location. In addition, the following information, which can be presented in tabular form, for each POC must be provided:

- the number of samples to be taken;
- the sample type (grab, flow/time-composite);
- the analytical method and method detection level for each POC, and
- the number of sampling events.

The number of sampling events for initial local limit development and re-evaluations consist of at least seven consecutive days of sampling from the collection system and the WWF influent and effluent sampling points; and, at least two days of sampling from the residuals sampling point. Programs not developing initial local limits may augment the required number of sampling events with data that has already been collected, provided the historical data is representative of current conditions at the WWF. Data from the previous two years is typically considered representative of current conditions.

Please keep in mind, while developing the monitoring plan, the purpose of any sampling is to accurately characterize the wastewater stream being sampled. Samples of wastewater are one of three types: flow-proportional composites, time-proportional composites, or grab samples. Each type has its use in the local limits development process, but the 24-hour, flow-proportional composite samples are recommended, where feasible. If, for logistical reasons, a flow-proportional sample can not be taken, the use of the time-proportional method should be justified in the POS.

At least four grab samples within a 24-hour period should be used for the following analytes: pH, cyanide, VOCs, total phenols, oil and grease, total petroleum hydrocarbons, sulfides, flashpoint, and temperature.

Also keep in mind the purpose of sampling the collection system is to determine residential and commercial (background) pollutant loadings in order to calculate maximum allowable industrial loadings. The recommended method to measure pollutant loadings from these uncontrollable sources is to collect samples from points within the collection system that isolate residential and commercial sources from industrial sources. It is recommended the Control Authority designate sampling locations within its collection systems based on the following considerations:

- The size of the service area or collection system (larger service areas may require more sampling locations).
- The variability of pollutant concentrations and loadings from one sector of the collection system to another. (For example, newer areas of a collection system may have higher concentrations of copper, while older areas may have higher concentrations of lead and zinc because of changes in plumbing materials over the years.)
- Types of commercial establishments represented.
- Whether more than one drinking water system operates within the WWF' service area. (Different water systems may have different water sources, or may add different chemicals for corrosion control such as polyphosphates.)

The final components of the second section is the identification of the NELAC certified laboratory that will perform the analyses and a sample chain-of –custody form showing the data to be recorded for each sample.

Section 3: Development Schedule

The third, and final, section of the POS is a schedule for completing the local limits development or re-evaluation. The schedule should at least show the sampling start date and the expected date for the draft local limits submission, including the results from Local Limits Information Development System (LLIDS), or similar software. The timeframe from sampling to submitting the results should not exceed six months. It is important to leave time in the schedule to allow for re-sampling should the need arise.