Final Annual Report for

Louisville and Jefferson County Metropolitan Sewer District

Project XL-Jeffersontown Sewershed/Chenoweth Run Watershed Pretreatment Reinvention Project (Reporting Period: January 1, 2006-May 31, 2007)

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MSD

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EXECUTIVE SUMMARY

The Louisville and Jefferson County Metropolitan Sewer District (MSD) began implementation of Project XL on June 1, 2002. MSD issued permits to four significant industrial users and executed agreements with 12 others in late 2002. These permits and agreements took full effect on January 1, 2003. Industrial savings from being deregulated were channeled toward stakeholder-initiated environmental projects beginning in 2003. Such projects have continued through the life of the project.

During 2006 and 2007, MSD continued the substantial monitoring program required by the Project XL Final Project Agreement and evaluated the collected data in light of Pretreatment Performance Measures. MSD presented the progress of this project to the full Stakeholder group on April 24, 2006 and April 23, 2007.

MSD, with input from the Stakeholder Work Group, had determined pollutants of concern (POCs) for the Jeffersontown sewershed/Chenoweth Run watershed based on criteria established early in the project. The list of POCs established during this project is as follows. A comparison of the plant effluent data from 2006 and 2007 is made to the threshold level (set at 70 percent of the applicable water quality criteria) and to the water quality criteria for each of the POCs:

- **Copper**–The 2006 and 2007 data shows five of 14 samples were at or above the water quality criteria. The appropriate analytical technique to demonstrate compliance with standards was used in 2006 and 2007 and will continue to be used in the future.

- **Cyanide (Amenable)**–Wastewater Treatment Plant (WWTP) effluent cyanide (amenable) was not measured at concentrations higher than the water quality criteria in 2006 or 2007. None of the 2006 and 2007 samples detected cyanide (amenable).

- **Lead**–The 2006 and 2007 data showed WWTP effluent concentrations with one data point just above the 100 percent of water quality criteria benchmark. Lead data collected in 2006 and 2007 was generally analyzed using Graphite Furnace AA except for one sample. The only data point that was above the 100 percent of water quality criteria benchmark was analyzed using an ICP technique (a less sensitive analytical technique), whereas all samples that were below the benchmark were analyzed using the more sensitive GFAA analytical technique. The importance of employing the Graphite Furnace AA is apparent.

- **Mercury** –Mercury was detected in one effluent sample in 2006. The sample was analyzed with the EPA 1631E analytical technique and it was less than the threshold concentration. The actual concentration was only 7 percent of the threshold. Future analytical work will continue to employ EPA 1631E. Mercury was eliminated from the list of POCs in 2007.

- **Cadmium**–Cadmium was added to the list of POCs because of regulatory reduction in the water quality criteria for cadmium changed in 2005 from 4.4 ug/L to 0.5 ug/L. Prior analytical results were insufficient to determine whether the new water quality standard was being met, so MSD and the Stakeholders agreed that additional monitoring should be performed. Cadmium was detected in the effluent only once in 2006 and 2007. Recent data was generated using a less sensitive analytical

procedure (ICP vs. GFAA) which accounts for the apparent increase in baseline concentrations. Cadmium was removed from the list of POCs in 2007.

- **BOD**–Parameter is listed on KPDES permit for the Jeffersontown WWTP. MSD is reliably in compliance.

- **TSS**–Parameter is listed on KPDES permit for the Jeffersontown WWTP. MSD is reliably in compliance.

- **Ammonia**–Parameter is listed on KPDES permit for the Jeffersontown WWTP. MSD is reliably in compliance.

- **Total Phosphorus**–Parameter is listed on KPDES permit for the Jeffersontown WWTP. MSD is reliably in compliance. One violation occurred in 2006 and was attributed to complications with chemical feed equipment. Compliance resumed upon repair.

Two of the pollutants above were taken off the list of POCs based on the most recent data. Recent data has demonstrated that Mercury and Cadmium were reliably in compliance when analyzed by an analytical technique with a low enough detection limit.

The Industrial User Agreements applied in lieu of permits for select industrial users went into effect on January 1, 2003. The work group previously determined eligibility of industries based on several factors, including discharge of POCs and compliance records. The stakeholder work group revisited the eligibility of industrial users annually and determined that one permitted industry was eligible for an IU agreement in lieu of a permit based on 2004 data. This IU was issued an agreement in 2005. No other changes were made based on 2005 or 2006 data.

The stakeholder work group identified supplemental environmental projects where industries that received an agreement in lieu of a permit can donate half of their savings from the previous permit relationship. A list of the projects in 2006 and 2007 follows:

- **Gaslight Festival Booth to Educate Public Regarding Pollutant Reduction** (Project XL)–The project contributed a total of $779 toward this effort. The gaslight festival was held in September 2006. The booth provided an opportunity to engage local residents and discuss stressors to their watershed and connect their actions to an impact. Project funds in the amount of $2,039 were set aside to sponsor a booth at the 2007 Gaslight Festival. In addition to the booth expenses, funding will be used to purchase oak and/or pine tree saplings for distribution to the public.

- **Environmental Education Seminar (University of Louisville)**-Project XL contributed a total of $407 and sponsored a seminar to educate the public on Karst features and their risk to water quality. The seminar was held August 17, 2006.

- **Innovative Educational Materials Regarding Mercury**-Project XL contributed a total of $2,000 and participated in developing educational materials on best management practices for mercury control at dentist offices. The development of a presentation and brochure was a collaborative effort between MSD and Kentucky Pollution Prevention Center (KPPC). The CD educates dentists about pollution prevention and best management practices to keep mercury and silver out of our environment. The project workgroup visited every dentist office within the sewershed to educate dentists about proper mercury disposal. Each dentist was provided a copy of the CD and a magnet to remind them of proper disposal. In addition, 15 pounds of mercury were collected for proper disposal.

- **Stakeholder Work Group Meetings**–Project XL funding in the amount of $241 was used to sponsor materials for two stakeholder meetings in 2006 and 2007.

- **Project Signs**–Project XL funding in the amount of $1,500 will be used to prepare and install permanent signs at two parks along Chenoweth Run. The signs serve to educate the public on the project and promote active participation in efforts to improve Chenoweth Run.

- **Project Banquet and Awards**–Project XL sponsored an award banquet to recognize all of the participants that made the project successful. Funding in the amount of $3,094 was used to sponsor the awards and banquet. The banquet was held on June 4, 2007.

- **Storm Drain Labeling**–Project XL completed a storm drain labeling initiative for the watershed. This project included an education of the volunteers on the direct relationship between storm drains and Chenoweth Run. In turn, volunteers placed door hangers at residences and businesses to educate the public about protecting Chenoweth Run by properly using storm drains. MSD included many of the project's educational and outreach materials in the door hangers. Within the watershed, over 300 storm drains are labeled with the message "No Dumping Drains to Our Creek". Project XL funding in the amount of $7,115 was used to purchase materials for storm drain labeling and to advertise for volunteers.

- **Floyds Fork Environmental Association Brochure and Educational Materials**–Project XL funding in the amount of $1,500 has been committed to offset costs for the Floyds Fork Environmental Association to update, print, and distribute their informational materials concerning the Floyds Fork watershed. Chenoweth Run is a significant tributary to Floyds Fork and members of the association have been active stakeholders in Project XL since its inception.

- **Herbicide and Pesticide Educational Materials**–Project XL funding in the amount of $922 was spent to produce additional copies of this public educational tri-fold brochure titled, 'Is Your Lawn to Die For?'. Copies of the brochure were distributed at the Gaslight Festival and other community events, as well as during the storm drain labeling project.

Review of analytical results from collection system and industrial monitoring indicates that a significant portion of the POCs come from sources other than permitted industries. Therefore, MSD continued efforts to reduce POCs through nontraditional means. Several of the stakeholder-approved environmental projects had pollution prevention themes. The Gaslight Festival booth, University of Louisville environmental education seminar, storm drain labeling, mercury educational initiative, lawn care brochure, and park signs all served to educate the public about ways to reduce pollution, especially POCs.

As Project XL comes to a successful conclusion, MSD is proud of the following accomplishments:

- Cooperative working relationship strengthened with project stakeholders including local environmentalists, industries, USDA NRCS, KPPC, Kentucky EPPC, US EPA, and other local and state agencies.

- Pollution prevention audits performed by the KPPC at industries and at MSD's Jeffersontown WWTP.

- More extensive and better data set that lead to confident identification of POCs and their sources.

- Cost savings realized by industries of $33,120 during the life of Project XL.

- Contributions from industries of $33,120 toward supplemental environmental projects including:

  - Chenoweth Run Creek Clean-up during 2003, 2004, and 2005.

  - Gaslight Festival booth for public education in 2003, 2004, 2005, 2006, and 2007.

  - Mapping of sinkholes in the watershed (2003) and preparation of an educational brochure on sinkholes in the watershed (2004).

  - Backyard Habitat Workshops were held in 2004 and 2005.

  - Streamside corridor habitat restoration maintenance at the Clem Farm on Chenoweth Run (2005).

  - Investigation of background concentrations of copper and lead in typical water supply including an educational component for students from Jeffersontown High School.

  - Educational seminars at U of L on POCs and their toxicology in 2005 and Karst features in 2006.

  - Development and distribution of educational materials for dental offices for mercury waste in 2006 and 2007.

- Production and distribution of a public informational brochure on the subject of pesticides/herbicides/fertilizers for lawn care (2005).

- Storm drain labeling and public education campaign in 2007.

- Placement of two project signs at parks along Chenoweth Run to educate the public and promote stewardship of Chenoweth Run (2007).

- Sponsorship of stakeholder meetings (2005, 2006, 2007) and a project awards banquet (2007).

- Update of FFEA educational materials (2007)

Implementation of this project offered many opportunities for lessons learned. Some of the significant lessons include:

- The method of data collection employed during this project resulted in much more useable information. Concentration and mass loading information was simultaneously collected at industries, at key locations in the collection system, at the WWTP influent, effluent, and biosolids. The approach allowed mass-balancing and a better understanding of the system. This approach is more resource-intensive and more expensive, but more meaningful data was considered worth the investment.

- The active stakeholder process resulted in integration of more ideas and a more successful and broadly endorsed project.

- Extensive data collection benefited MSD when local limits were being reevaluated, in particular for copper, which MSD demonstrated was not the result of industrial discharges because of the data collected via Project XL.

- Selection of the correct analytical procedure can help generate useful data. MSD routinely struggled with having the correct analytical procedures employed and some data collected at certain times in the project were of little benefit. In particular, MSD learned that the following parameters require special consideration during sampling and analysis:

  - Mercury–MSD conducted a clean sampling/clean analysis demonstration that underscored the importance of using extensive sampling QA/QC and a laboratory technique with the lowest possible detection level (1631E). When effluent and stream data was collected using this technique, mercury concentrations could be confidently quantified and shown to be less than the very low water quality criteria.

  - Lead–MSD learned that employing the Graphite Furnace AA technique was necessary to reliably report lead concentrations in the effluent and stream. When ICP techniques were employed, less useful results were obtained.

- Cadmium–MSD learned that employing the Graphite Furnace AA technique was necessary to reliably report cadmium concentrations in the effluent and stream. When ICP techniques were employed, less useful results were obtained. This was particularly important when the water quality criteria for cadmium was lowered significantly.

- Plotting data on trend charts was an effective method for presenting results.

- A better understanding of industrial discharges within the collection system was obtained throughout the project. MSD was able to prepare guidance for emergency response technicians to track unusual discharges from the treatment plant back into the collection system.

- Collection of mass loading data by installing flow meters at key sampling locations led to an assessment of relative magnitude of POCs. In the absence of mass loading information, decisions may be made to regulate a truly insignificant user or not regulate a truly significant user.

- Most industrial users embraced the project because it allowed them to save money. A few industries preferred to work under the umbrella of a permit in lieu of a less regulatory mechanism, a way to avoid change. All industries were cooperative and seemed to appreciate the better understanding of the actual POC in their discharge.

- Public education and awareness proved to be a central theme of this project. Many grass-roots opportunities exist to deliver pollution prevention education and the public was open to the message. Many activities focused on educating children with the added benefit of having the parents overhear and embrace the message.

- One intended outcome of this project was to demonstrate a measurable reduction in the loading to the environment as a consequence of the approach. The environmental data collected demonstrate conditions in Chenoweth Run are no worse than before the project, but on the flip side, are not measurably better. Some industries with more focused regulation on their POCs were able to reduce them over the life of the project (White Castle–BOD, TSS; Lantech–Phosphorus). Lack of regulatory oversight on other industries did not result in increased mass loadings of pollutants. Education of the industries was necessary to achieve both of these outcomes.

- Many elements of this project approach were transferable to other regional sewersheds at MSD and can be transferred to other utilities. Among the transferable elements are:

  - Method of data collection, trending, and analysis.

  - Selection of the appropriate analytical techniques for the data quality objective.

  - Identification of POCs for a particular system.

  - Educating industries on the actual POCs and employing pollution prevention initiatives targeted at those POCs.

- Educating the public since many of the POCs are not exclusive to industrial discharges.

MSD is very pleased to report that this project will receive the Kentucky Outstanding Watershed Management Award from the Kentucky-Tennessee WEA at their July 2007 meeting. The unique approach to addressing stressors to the environment and enhancing public awareness were key factors in being selected for this award. It would not have been possible without the regulatory opportunity to try something different and the dedicated project stakeholders that guided this project from its inception. MSD is grateful for this opportunity and the help obtained from all on this five year journey. We have achieved much by working together.

SECTION 1
INTRODUCTION

Louisville and Jefferson County Metropolitan Sewer District (MSD) completed an EPA Grant project for the development of pretreatment performance measures. The objective of that project was to develop, implement, and assess specific performance measures designed to measure the environmental impact of the pretreatment program in the Jeffersontown Sewershed/Chenoweth Run Watershed area. MSD was also selected to participate in the Project XL (e**X**cellence in **L**eadership) program.

With information gained from the performance measures, and with the regulatory flexibility provided by this pilot project, resources were shifted to address the greatest environmental concerns in the watershed. MSD's strategy was to utilize better information and reallocate resources with this XL pilot program to create environmental benefits according to a specific prioritization strategy.

The USEPA approved XL projects for five publicly owned treatment works (including MSD) on October 3, 2001, as documented in the Federal Register. MSD modified their Wastewater Discharge Regulations (WDRs) on October 1, 2002 to provide the local authority for the project. In addition, the KPDES permit was reissued for the Jeffersontown facility, including authorization to implement the XL project on June 1, 2002. Statutes were passed at the Kentucky legislature providing the state regulatory authorization on December 12, 2002. MSD has used June 1, 2002 as the official start of this XL project. The five year project was officially completed as of May 31, 2007.

As part of Project XL, MSD has committed to produce an Annual Report for EPA, Kentucky Department of Environmental Protection (KYDEP), and project stakeholders. MSD has prepared annual reports for 2002, 2003, 2004, and 2005 and submitted them on April 1 of each following year. This report serves as the final project report and includes the annual report summaries for 2006 and in 2007 to the end of the project (YTD).

MSD continued to implement the project approach for data collection as detailed in the Final Project Agreement (FPA) through May 31, 2007. This report will document the continued data collection and interpretation for 2006 and 2007 (YTD). The modifications to the pretreatment program have been in effect since January 1, 2003, therefore, all data collected in 2006 and 2007 was used to continue gauging progress with pollutions of concern (POC) reduction initiatives. This report provides a progress report on the status of the environment as of May 31, 2007 resulting from this experimental approach to MSD's pretreatment program.

Data presented in this report reflect findings for the years 1999 through 2007. However, data evaluation will focus on 2006 and 2007 information.

SECTION 2
BACKGROUND

MSD operates the Jeffersontown (J-Town) Regional Wastewater Treatment Plant (WWTP). The facility has a rated capacity of 4 MGD and serves all of J-Town including several industrial parks. MSD operates a pretreatment program for the WWTP that includes permitting industries with categorical and local limits. Prior to the implementation of this project, there were seven Significant Industrial Users (SIUs) and 22 industries with general permits. Of the seven SIUs, three were regulated as categorical industries. Several of the companies ceased operation in the baseline monitoring stage of the project. The locations of all industries were shown in the 2002 annual report. This treatment plant sewershed is contiguous with the upper half of the watershed of a small stream called Chenoweth Run.

Project XL is a national pilot program that allows state and local governments, businesses, and federal facilities to develop (with EPA) innovative strategies to test better or more cost-effective ways of achieving environmental and public health protection. In exchange, EPA will issue regulatory, program, policy, or procedural flexibilities to conduct the experiment. There were eight Project XL selection criteria as listed below:

1. Produce superior environmental results beyond those that would have been achieved under current and reasonably anticipated future regulations or policies.

2. Produce benefits such as cost savings, paperwork reduction, regulatory flexibility, or other types of flexibility that serve as an incentive to both project sponsors and regulators.

3. Receive support from stakeholders.

4. Achieve innovation/pollution prevention.

5. Produce lessons or data that are transferable to other facilities.

6. Demonstrate feasibility.

7. Establish accountability through agreed upon methods of monitoring, reporting, and evaluations.

8. Avoid shifting the risk burden, i.e., do not create worker safety or environmental justice problems as a result of the experiment.

The Final Project Agreement (FPA) for MSD's XL project was signed by MSD, USEPA, and KYDEP on September 28, 2000. The FPA documents the enforceable commitments, voluntary commitments, and aspirations for the project. The FPA calls for a five-year effort and requires annual reporting that will include:

- Assessment of the Pretreatment Program (as it applies to the J-Town WWTP) relative to the Pretreatment Performance Measures.

- Reevaluation of the list of Pollutants of Concern (POCs) based on current data and criteria identified in Section VII.B.1 of the FPA.

- Reevaluation of the SIU status based on current data and criteria identified in Section VII.B.2 of the FPA.

- Preparation and submittal of a Performance Assessment Report to EPA and KYDEP (now known as KYEPPC–Kentucky Environmental and Public Protection Cabinet).

In addition, the annual report will address the following items required on a semiannual basis:

- A summary of data collection efforts.
- Updated trend charts of all monitored pollutants.
- Narrative discussion on trends.

SECTION 3
ENFORCEABLE COMMITMENTS

3.1 MONITORING

Substantial monitoring data was collected during 2006 and 2007. Treatment plant influent and effluent data was generally collected three days per week for conventional pollutants in accordance with KPDES permit requirements. Special quarterly sampling took place in April, June, August, and October 2006, as well as March 2007. The quarterly sampling events were one week long and included sampling at the treatment plant influent, effluent, biosolids, collection system manholes, and significant industrial users. Industrial users not considered significant by MSD were not sampled in 2006 and 2007 in accordance with their industrial user agreements. Stream samples from upstream and downstream were collected on one day during each of the quarterly sampling events. Specifics on the sample locations, parameters, and dates are included in Appendix A.

3.2 INDUSTRIAL USER (IU) AGREEMENTS

MSD developed indirect user agreements with stakeholder involvement for IUs that meet the criteria for less regulatory oversight. The process of developing these IU Agreements was documented in the minutes from five stakeholder workgroup meetings conducted in 2002. A copy of the minutes from these meetings was included in the 2002 Annual Report.

MSD issued IU Agreements in lieu of SIU permits to 12 eligible industries. Of the 12, two of the industries received Noncategorical Industrial User (NCIU) Agreements. One industry eligible for an IU agreement elected to have a SIU permit. There were three industries who did not qualify for IU agreements. Four industries were issued SIU permits. Copies of the four SIU permits were included in the 2002 annual report. The effective date for all 12 IU Agreements, and 4 SIU Permits was January 1, 2003. Russtech transitioned from an SIU permit to an IU Agreement in 2005.

MSD did not issue any new IU agreements or SIU permits in 2006 or 2007.

3.3 REALLOCATION OF RESOURCES

MSD has committed to developing a plan for reallocation of freed industrial resources with the involvement of stakeholders. Since changes to the pretreatment programs were implemented in 2003, the approach resulted in freeing over $33,000 in resources that were invested in stakeholder-approved supplemental environmental projects. Industries with IU agreements are committed to investing half of their annual savings (compared to their previous permit relationship) toward stakeholder approved environmental projects. Industries were allowed to keep the other half savings totaling over $33,000.

In 2006 and 2007, MSD continued to collect the industrial contributions directly and allocate them to environmental projects. Funding was received from all 13 industries in 2006 and 2007. Invoices sent to the companies for 2007 were for half of the typical annual amount to reflect the project's completion in mid-2007. Table 3.3-1 identifies the reallocated resources expended in 2006 and 2007.

TABLE 3.3-1

REALLOCATION OF RESOURCES

No.	Project Name	Project Sponsor	2006-2007 Funding Provided
1	Gaslight Festival Booth to Educate Public Regarding Pollutant Reduction (06)	Project XL	$779
2	Project Signs at Parks	Project XL	$1500
3	Project Banquet & Awards	Project XL	$3094
4	Storm Drain Stenciling	Project XL	$7115
5	University of Louisville Educational Seminar (Karst)	Project XL:	$407
6	Stakeholder meetings	Project XL	$163
7	Mercury Pollution Prevention Materials for Dentists (committed in 2005 but spent in 2006)	Project XL/KPPC	$2000
8	FFEA Brochure and educational materials reprint	FFEA	$1500
9	Printing of Herbicide & Pesticide Educational Materials	Project XL	$922
10	Gaslight Festival Booth to Educate Public Regarding Pollutant Reduction (07) including tree sapling give aways	Project XL	$2039
		Spent in 2006-7	$19,519
		Unspent in 2005, Carry into 2006	$6,458
		Total funds added in 2006-7	$13,061
		Total funds available in 2006-7	$19,519

In lieu of contributing to the above projects, industries could choose to donate half of their savings to an internal Supplemental Environmental Project as approved by MSD. None of the industries chose this option.

3.4 SEMI-ANNUAL REPORTS

MSD prepared and submitted semi-annual reports in October 2001, 2002, 2003, 2004, 2005, and 2006. The reports acknowledged data collection efforts and data management concerns. Copies are available on MSD's website: http://www.msdlouky.org/insidemsd/pretreat_projectxl.htm.

3.5 ASSESSMENT OF PERFORMANCE MEASURES

A. Effluent Measures

1. Conventional Pollutants vs. NPDES Limits

The treatment plant influent, effluent, and biosolids were sampled for four consecutive days each quarter and otherwise three days per week for conventional pollutants. The performance of the J-Town WWTP with respect to conventional permit limits is shown on Figures 3.5-1 through 3.5-8. The figures depict the plant performance against the monthly average limits and weekly average limits. The monthly average limits are compared to a 30-day moving average and the weekly average limits are compared to the seven-day moving average. CBOD, TSS, and NH_3-N limits were in effect for the entire period. The effluent limit for total phosphorus has only been in effect since November 2000. Both ammonia and phosphorus effluent limits vary seasonally. The data trend line plotted in the figures represents a moving average of the data. If a single data point is above the limit line, it may not constitute a violation unless that data point coincided with the end of a calendar week or month.

In 2006 and 2007, the facility had one permit limit violation for phosphorus (monthly average) in September 2006. There were no violations for BOD, TSS, and Ammonia. The permit limit violation was caused by complications with the chemical feed equipment at the treatment plant. The violation was not caused by the discharge of industrial wastewater.

2. Biomonitoring vs. NPDES Limits

Table 3.5-1 presents the results of quarterly biomonitoring for the J-Town WWTP. The facility has not experienced toxicity during 2006 or 2007.

B. Metals and Organics vs. Water Quality

The treatment plant effluent was sampled for two consecutive days each quarter for metals. Composite samples were collected and analyzed for metals and cyanide (amenable to chlorination). Samples for mercury in the effluent were only collected on one occasion in 2006. The mercury samples were analyzed by an independent laboratory using the most sensitive analytical method (EPA 1631). The

FIGURE 3.5-1

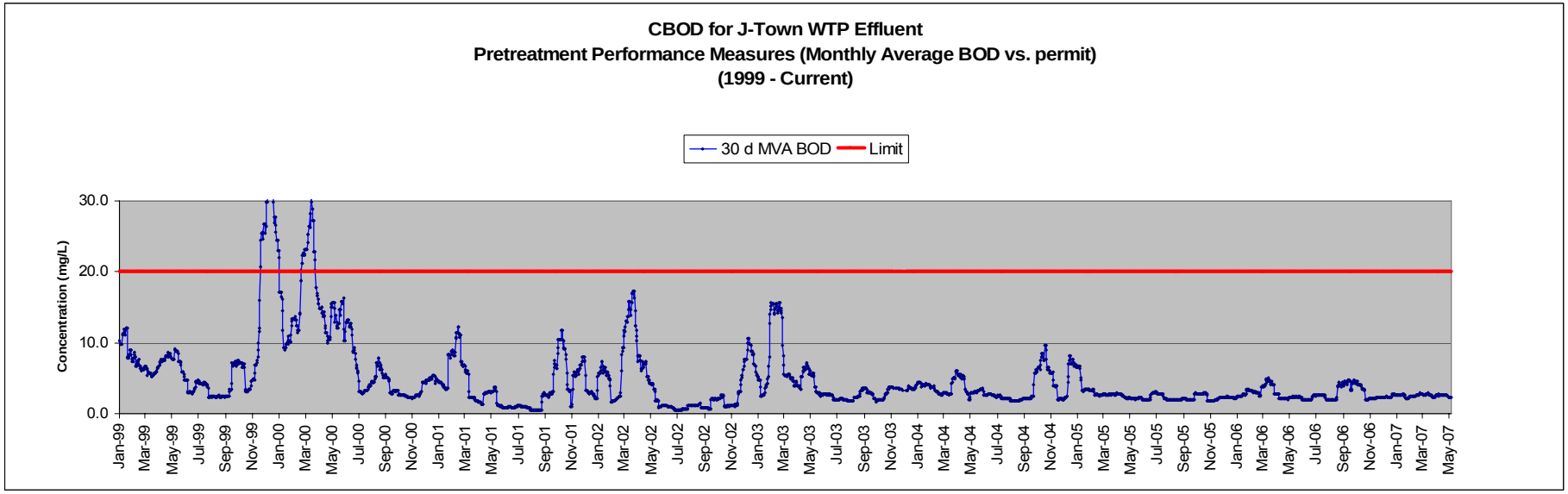


FIGURE 3.5-2

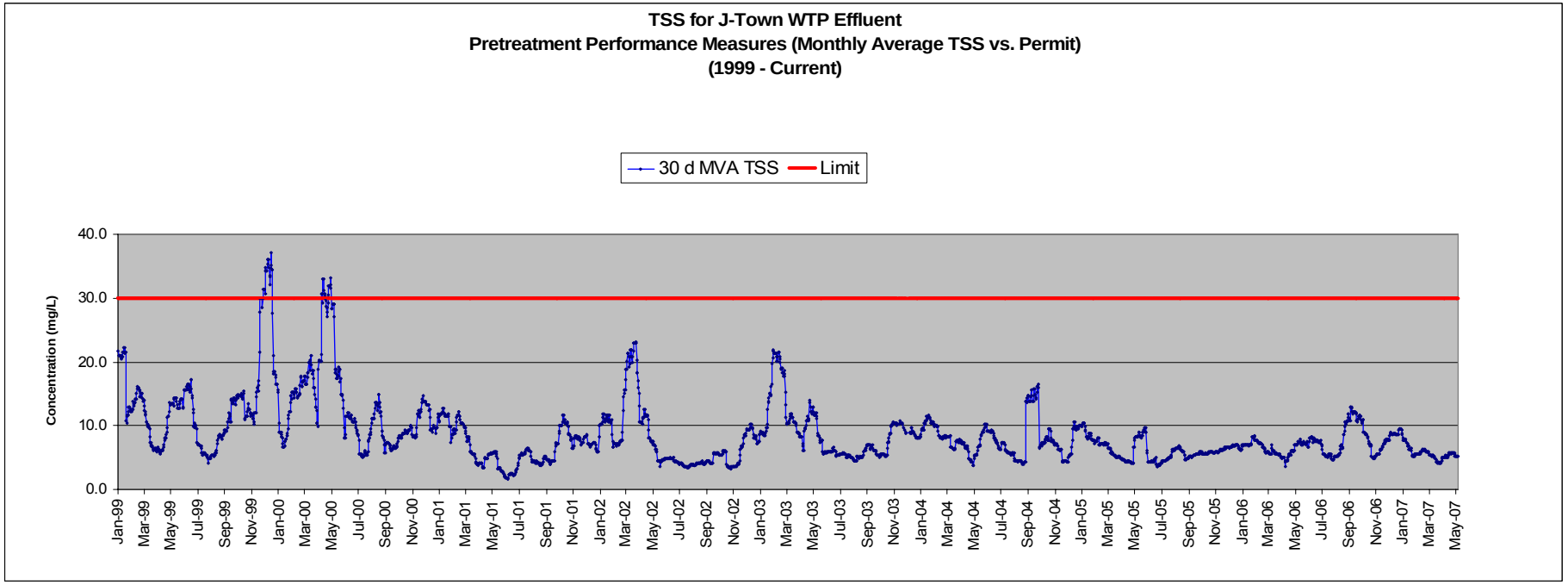


FIGURE 3.5-3

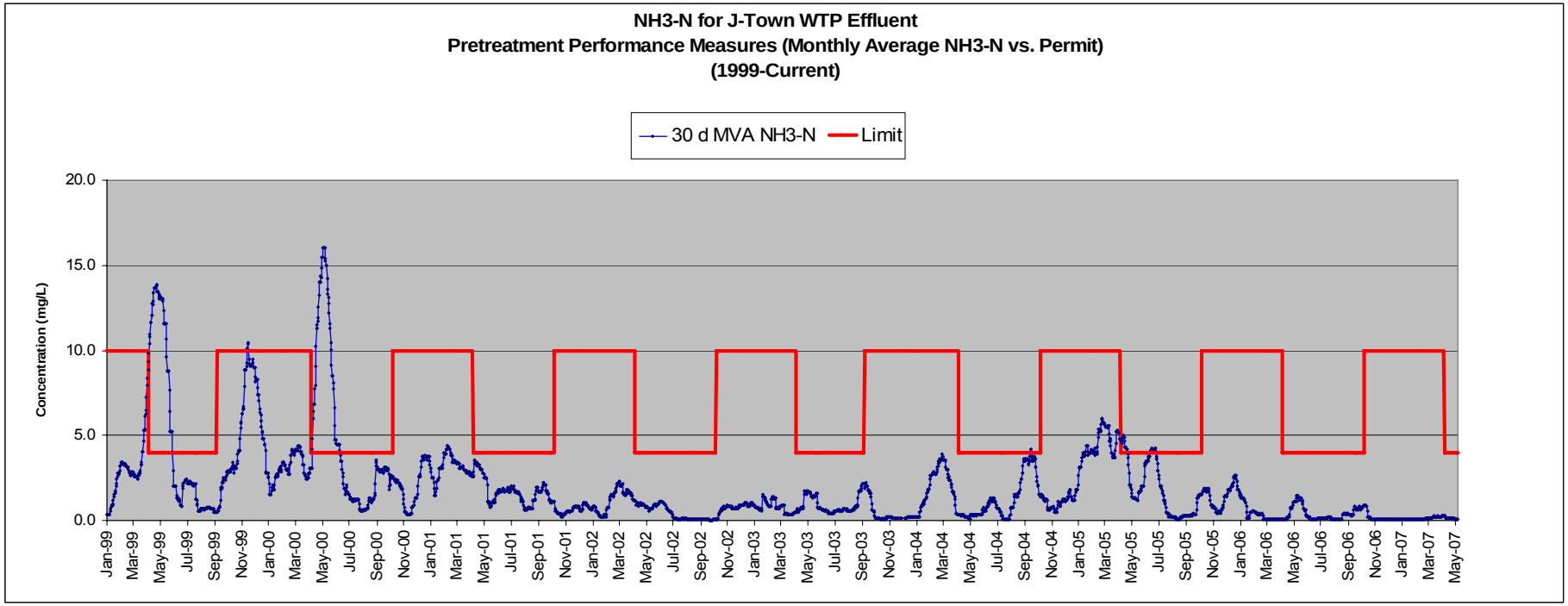


FIGURE 3.5-4

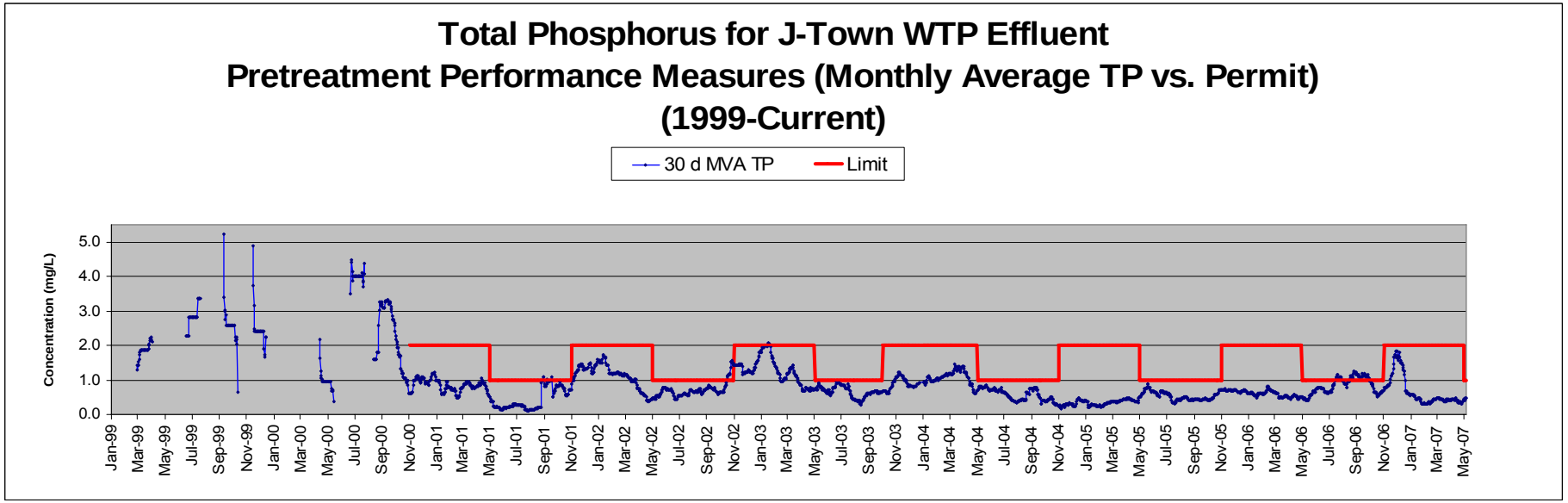


FIGURE 3.5-5

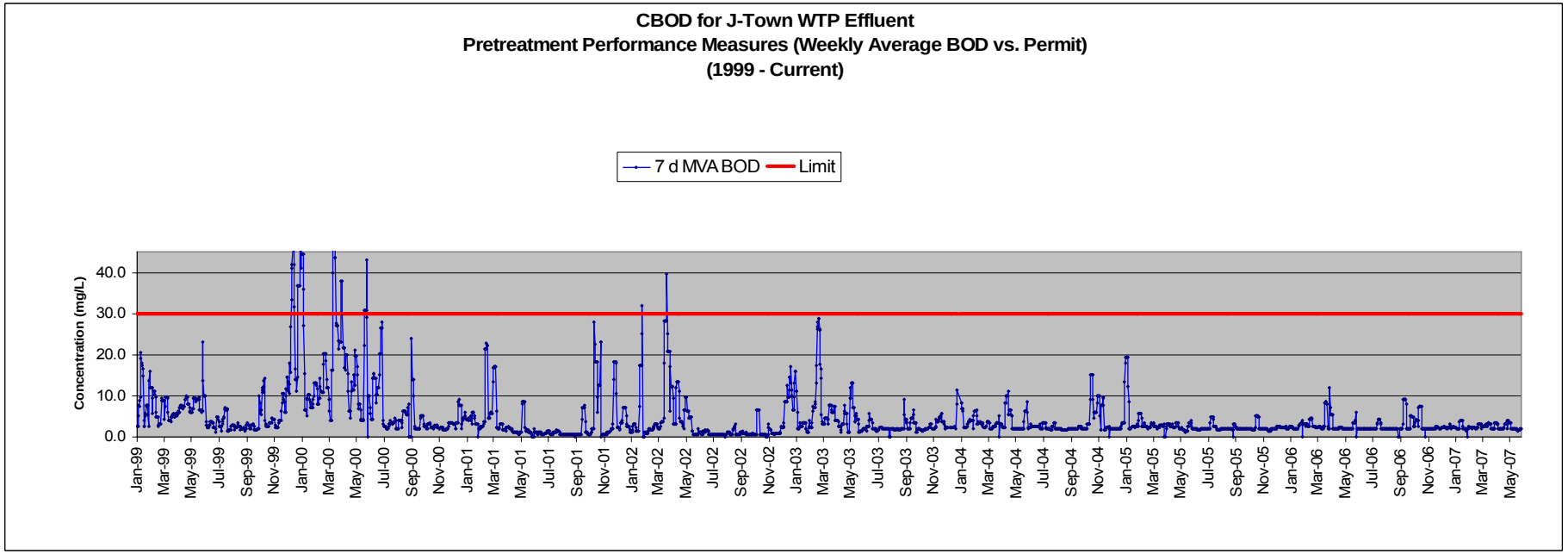


FIGURE 3.5-6

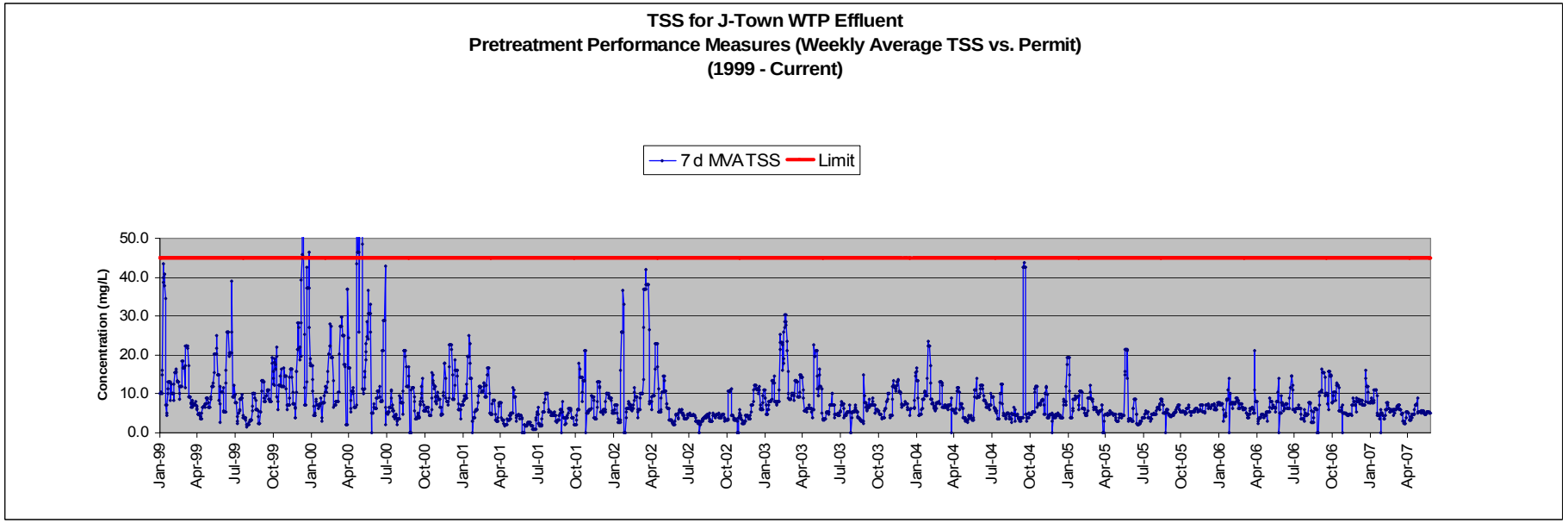


FIGURE 3.5-7

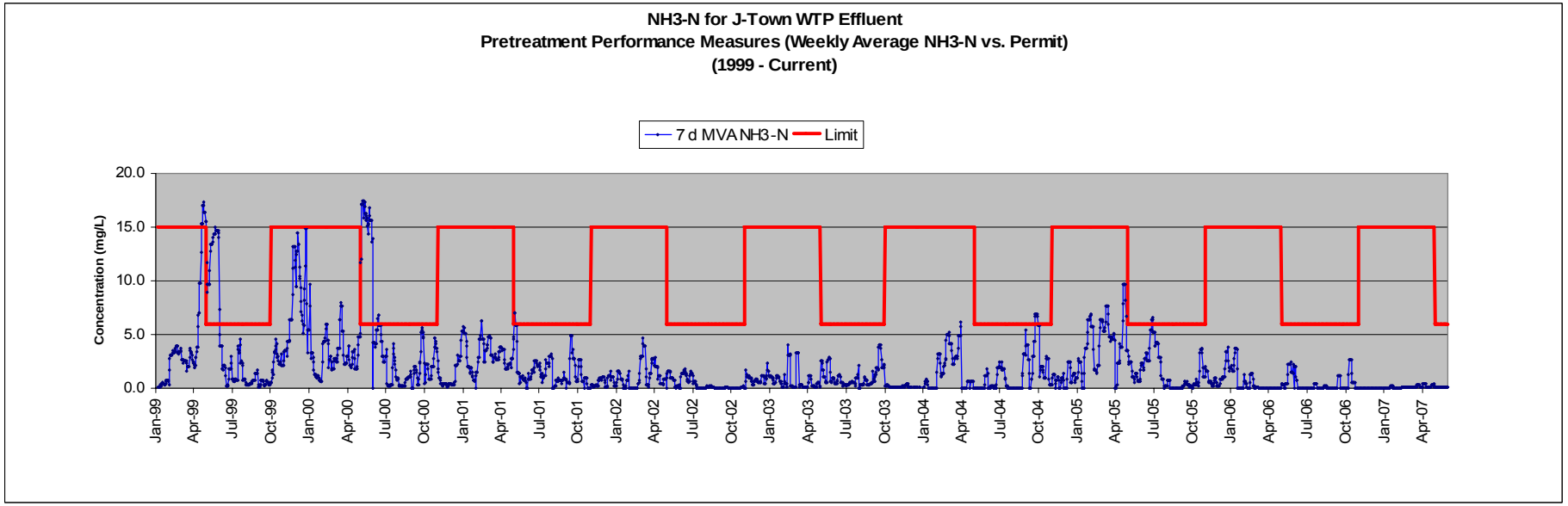


FIGURE 3.5-8

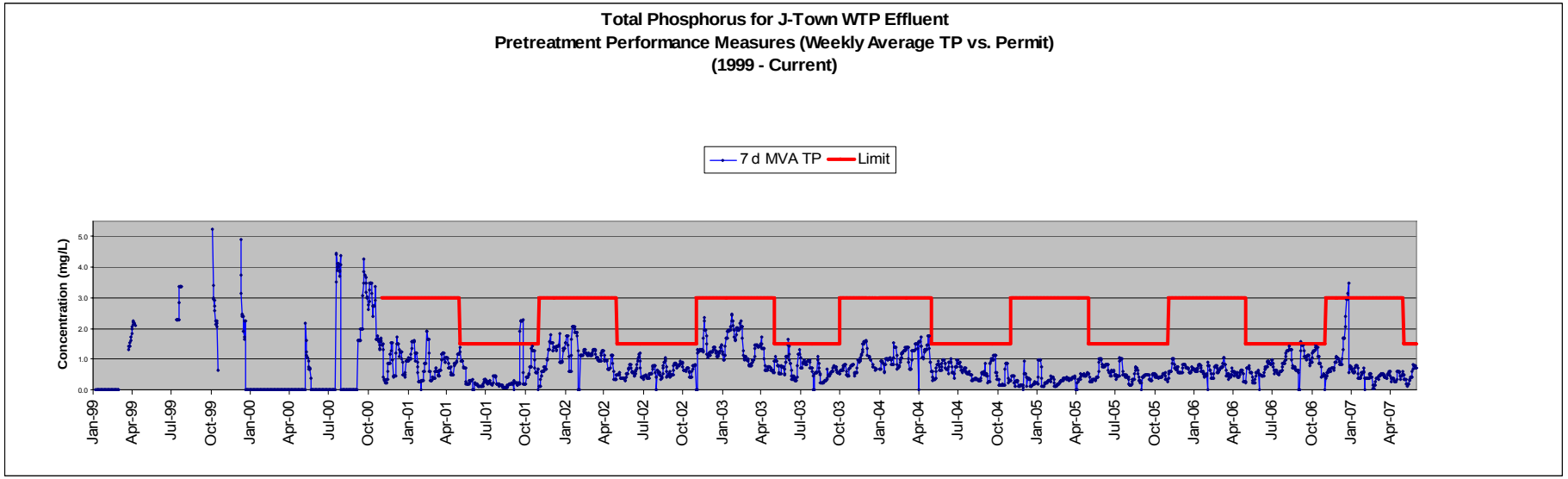


TABLE 3.5-1

BIOMONITORING FOR J-TOWN WWTP

Date	Chronic		Acute	
	Water Flea	Fathead Minnow	Water Flea	Fathead Minnow
Jan-98	N/A	PASS	N/A	N/A
Jun-98	N/A	PASS	N/A	PASS
Sep-98	N/A	PASS	N/A	N/A
Dec-98	N/A	PASS	N/A	N/A
Mar-99	N/A	PASS	N/A	N/A
Jun-99	N/A	FAIL (1.4)	N/A	N/A
Sep-99	N/A	FAIL (4.4)	N/A	N/A
Jan-00	N/A	PASS	N/A	N/A
Feb-00	N/A	PASS	N/A	N/A
Mar-00	N/A	PASS	N/A	N/A
Apr-00	N/A	PASS	N/A	N/A
May-00	N/A	PASS	N/A	N/A
Jul-00	N/A	PASS	N/A	N/A
3rd Qtr 2000	N/A	PASS	N/A	N/A
4th Qtr 2000	N/A	PASS	N/A	N/A
1st Qtr 2001	N/A	PASS	N/A	N/A
2nd Qtr 2001	N/A	PASS	N/A	N/A
3rd Qtr 2001	N/A	PASS	N/A	N/A
4th Qtr 2001	N/A	PASS	N/A	N/A
1st Qtr 2002	N/A	PASS	N/A	N/A
2nd Qtr 2002	PASS	PASS	N/A	N/A
3rd Qtr 2002	N/A	PASS	N/A	N/A
4th Qtr 2002	N/A	PASS	N/A	N/A
1st Qtr 2003	N/A	PASS	N/A	N/A
2nd Qtr 2003	N/A	PASS	N/A	N/A
3rd Qtr 2003	N/A	PASS	N/A	N/A
4th Qtr 2003	N/A	PASS	N/A	N/A
1st Qtr 2004	N/A	PASS	N/A	N/A
2nd Qtr 2004	N/A	PASS	N/A	N/A
3rd Qtr 2004	N/A	PASS	N/A	N/A
4th Qtr 2004	N/A	PASS	N/A	N/A
1st Qtr 2005	N/A	PASS	N/A	N/A
2nd Qtr 2005	N/A	PASS	N/A	N/A
3rd Qtr 2005	N/A	PASS	N/A	N/A
4th Qtr 2005	N/A	PASS	N/A	N/A
1st Qtr, 2006	N/A	PASS	N/A	N/A
2nd Qtr, 2006	N/A	PASS	N/A	N/A
3rd Qtr, 2006	N/A	PASS	N/A	N/A
4th Qtr, 2006	N/A	PASS	N/A	N/A
1st Qtr, 2007	N/A	PASS	N/A	N/A

data was assembled into a database and trend charts were created to display the concentration of specific metals against the lowest water quality criteria. The facility discharges into Chenoweth Run, a zero flow stream during dry weather. No allowable dilution of the effluent can be included when computing typical water quality thresholds for toxic compounds. The lowest water quality criteria was presented in the J-Town Background Report and was based on an average WWTP effluent hardness of 211 mg/L.

Figures 3.5-9 through 3.5-14 display the metals and cyanide data collected since 1999. The data was normalized by dividing the concentration in the effluent by the lowest water quality criteria. Any data point that was reported as not detected is represented on the graph at one half of the reported detection limit. The figures demonstrate Arsenic, Chromium, Iron, Nickel, Selenium, Silver, and Zinc were not typically present in the effluent above water quality criteria and thus are not pollutants of concern. Any deviations for these are discussed below:

- Silver was detected in the effluent on three occasions in 2006 above the water quality criteria. No source was identified.

- Zinc was detected in the effluent on one occasion above the water quality criteria, but was considered an anomaly.

The following parameters were pollutants of concern and had multiple exceedances above the threshold set in this project (which is 70 percent of the water quality criteria):

- Copper has been historically above the threshold and occasionally above the water quality criteria. The 2006 and 2007 data shows five of 14 samples were at or above the water quality criteria (100 percent). The appropriate analytical technique to demonstrate compliance with standards will continue to be used in the future.

- Lead data collected in 2006 and 2007 was generally analyzed using Graphite Furnace AA (a more sensitive analytical technique) except for one sample. The one data point that was above the 100 percent water quality criteria benchmark was analyzed using an ICP technique (a less sensitive analytical technique), whereas all samples that were below the benchmark were analyzed using the more sensitive GFAA technique. The importance of employing the Graphite Furnace AA (more sensitive analytical procedure) is apparent.

- Mercury was detected in the one effluent sample in 2006. The sample was analyzed with the EPA 1631E analytical technique and it demonstrated the absence of mercury relative to the threshold concentration. The actual concentration was only 7 percent of the threshold. Future analytical work will employ EPA 1631E.

- Cyanide (amenable) was not measured at concentrations higher than the water quality criteria in 2006 or 2007. This is an improvement compared to past years. None of the 2006 and 2007 samples detected cyanide (amenable).

FIGURE 3.5-9

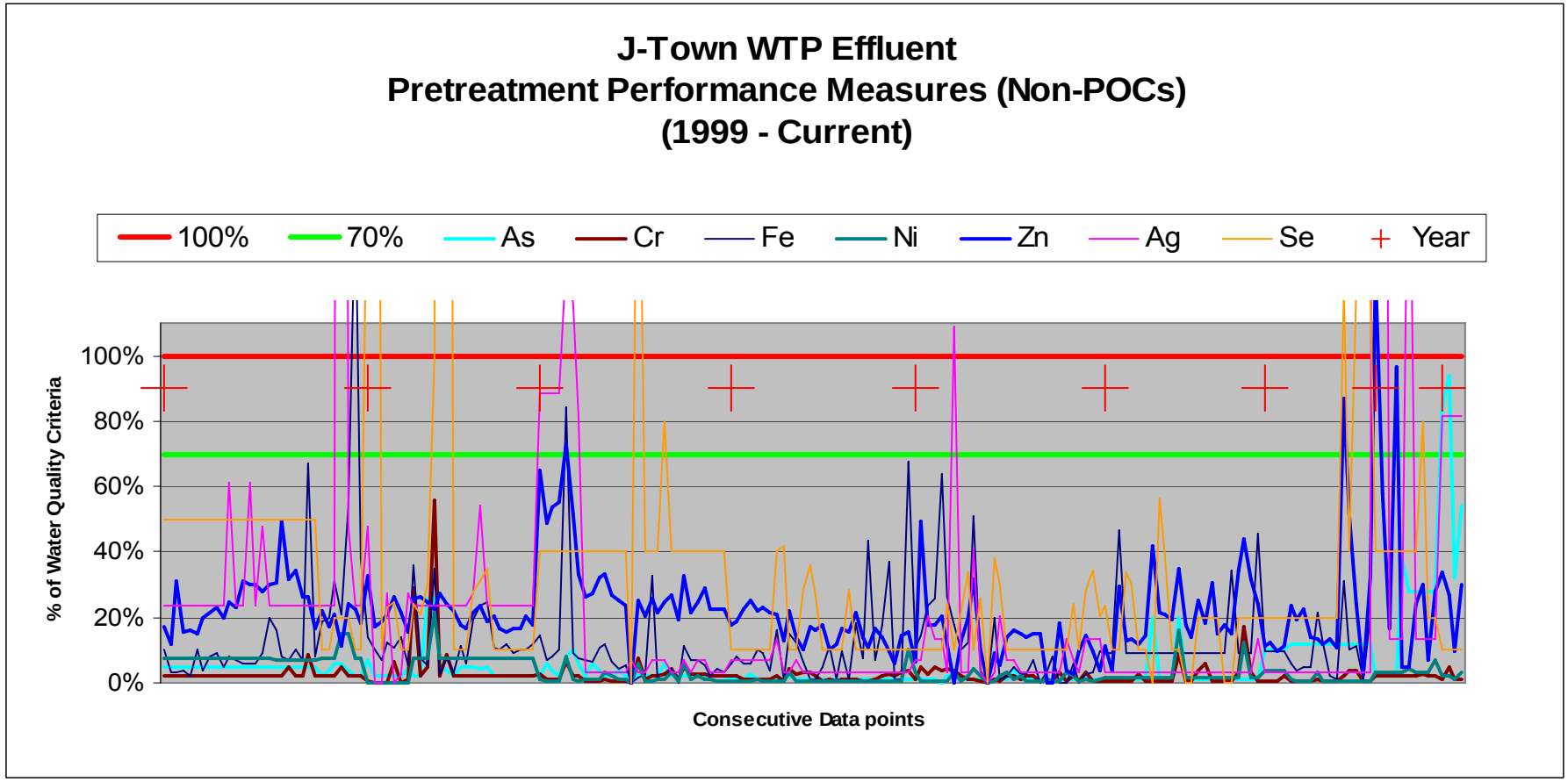


FIGURE 3.5-10

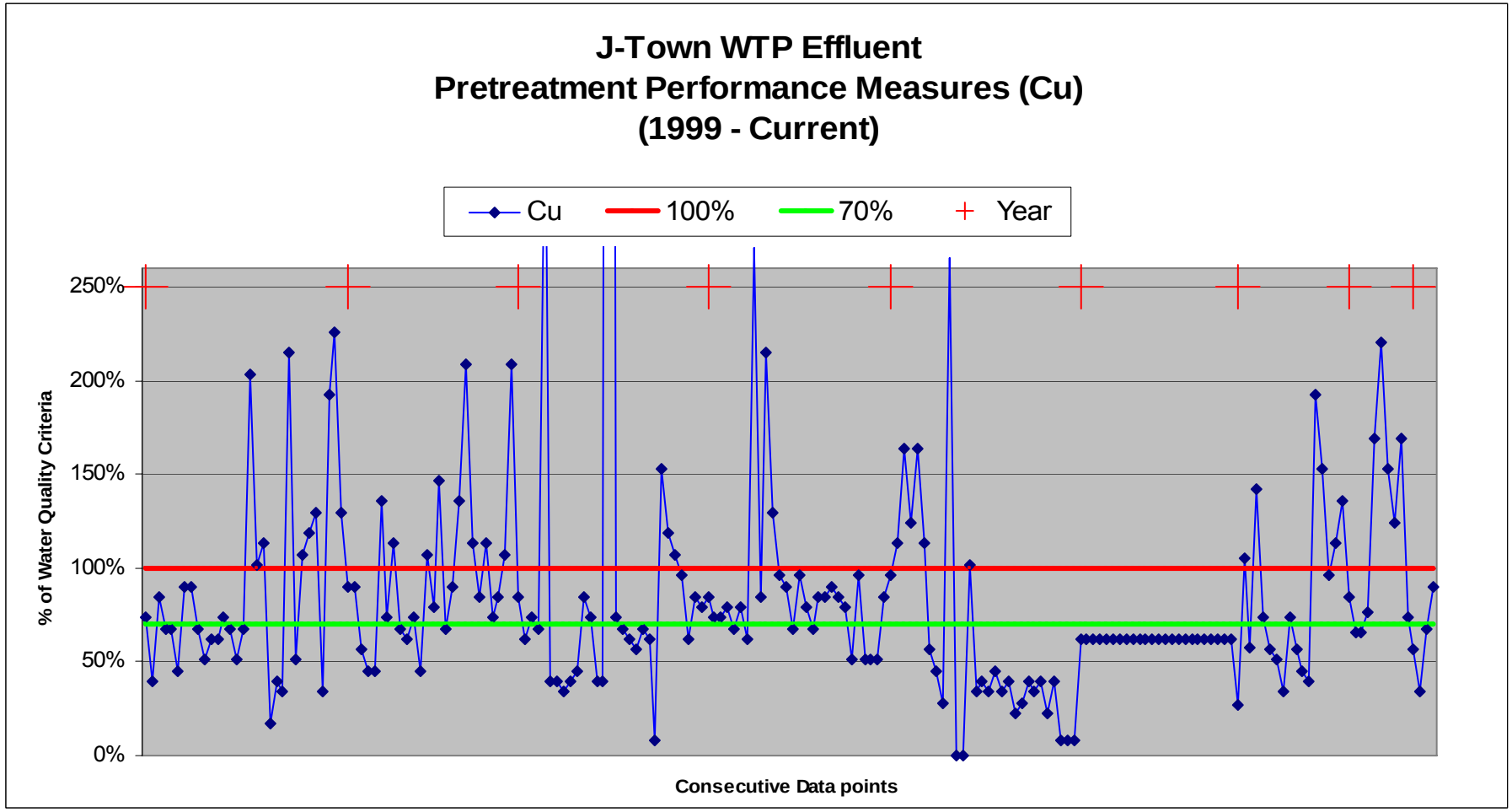


FIGURE 3.5-11

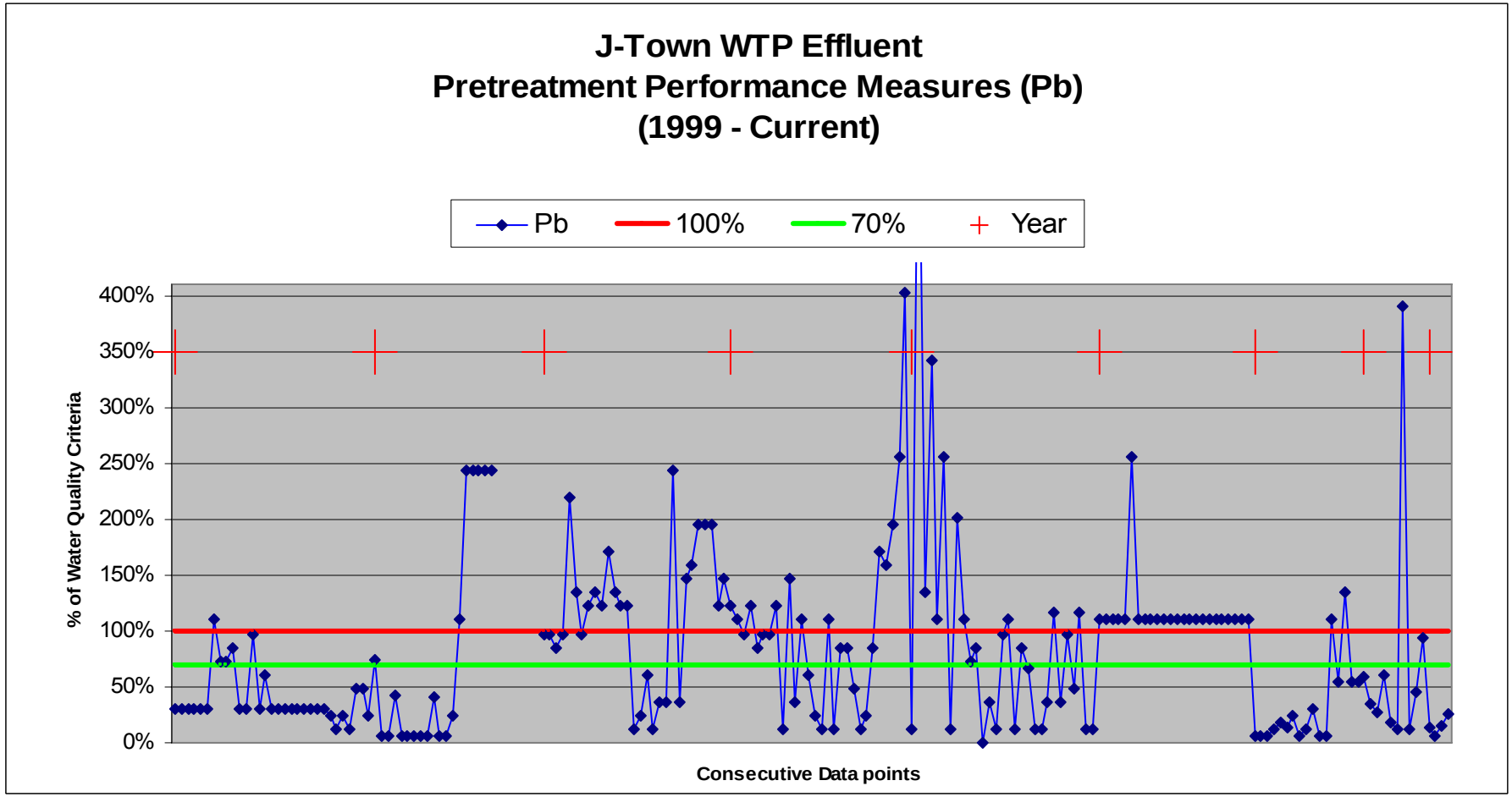


FIGURE 3.5-12

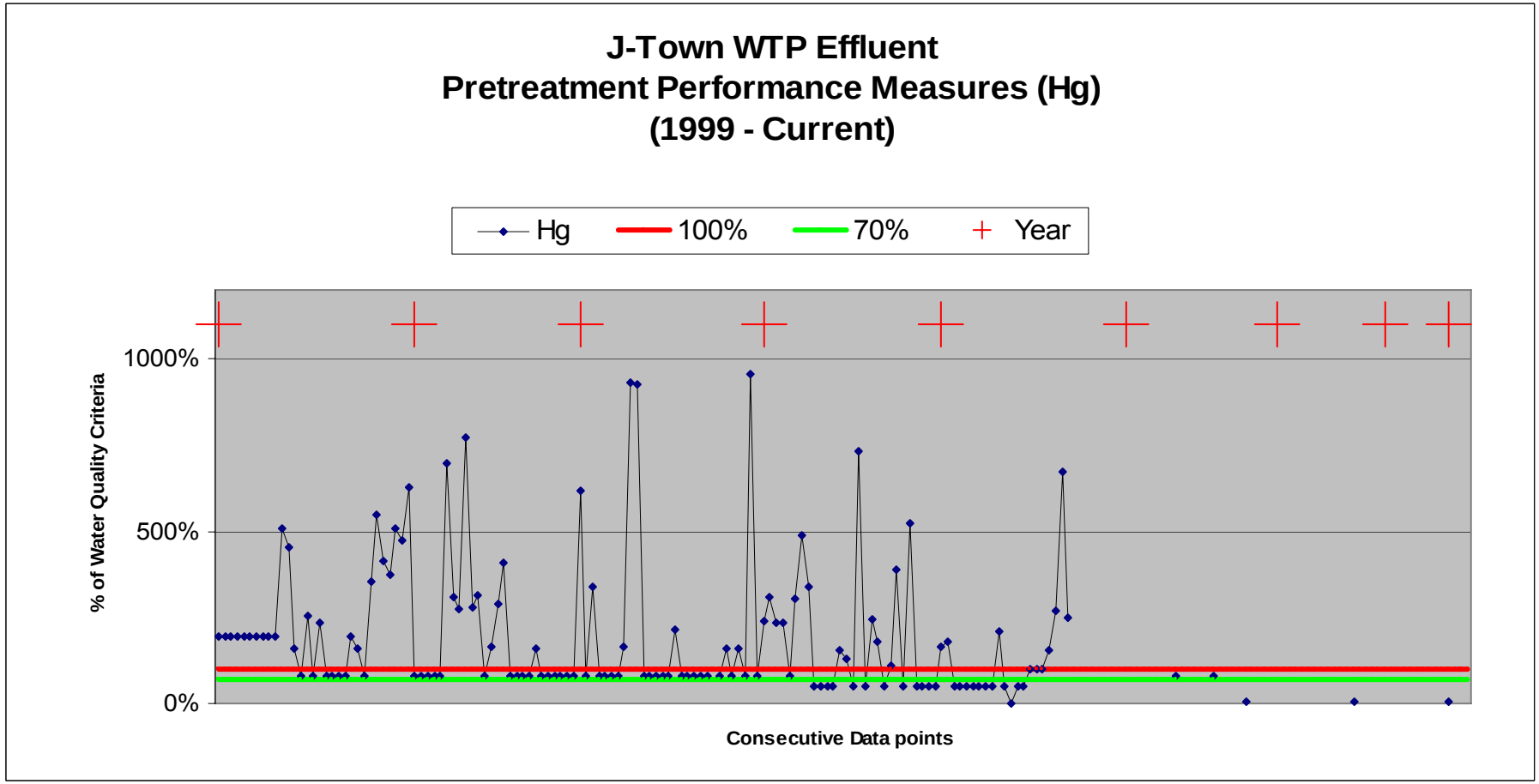


FIGURE 3.5-13

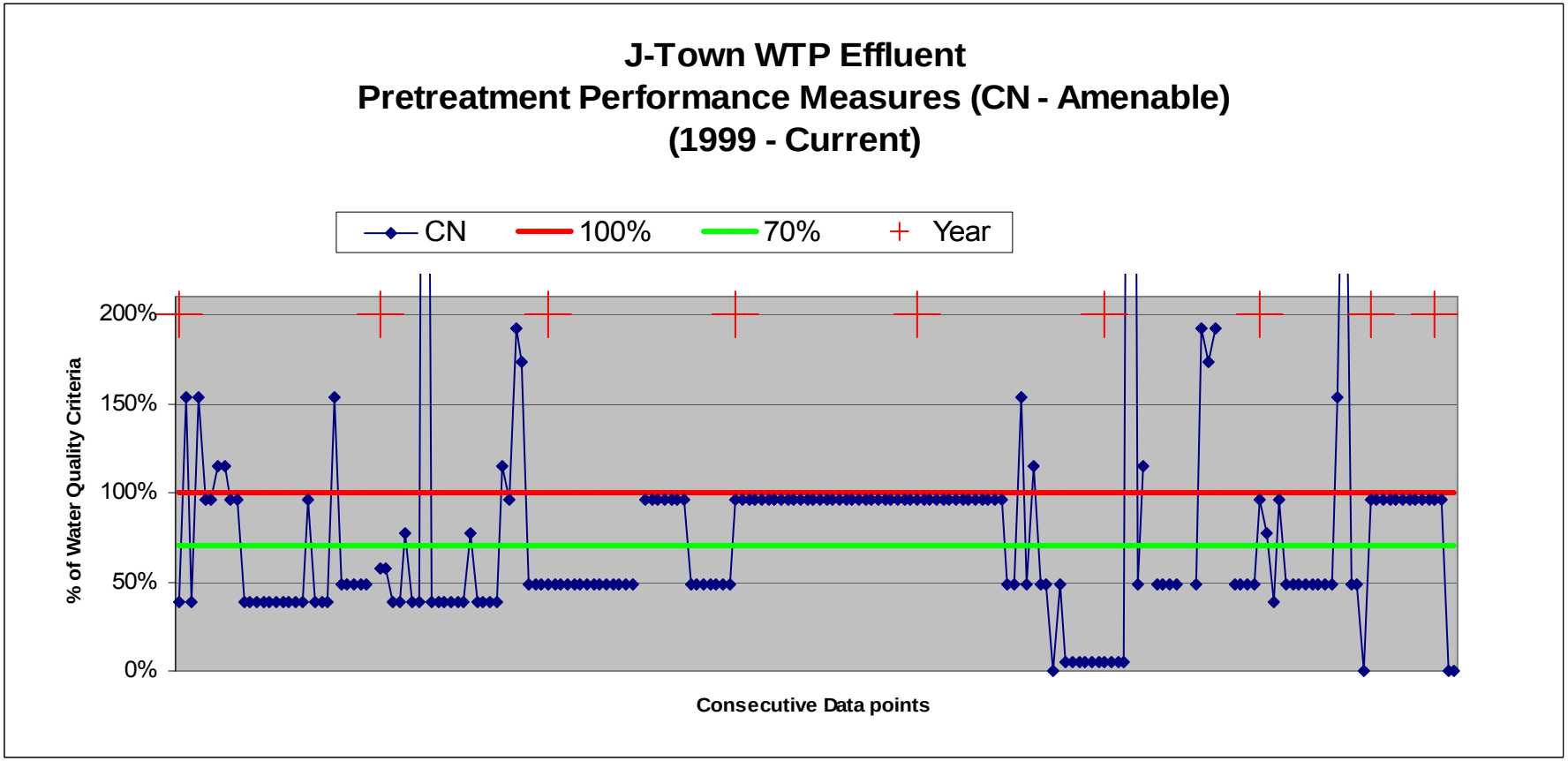
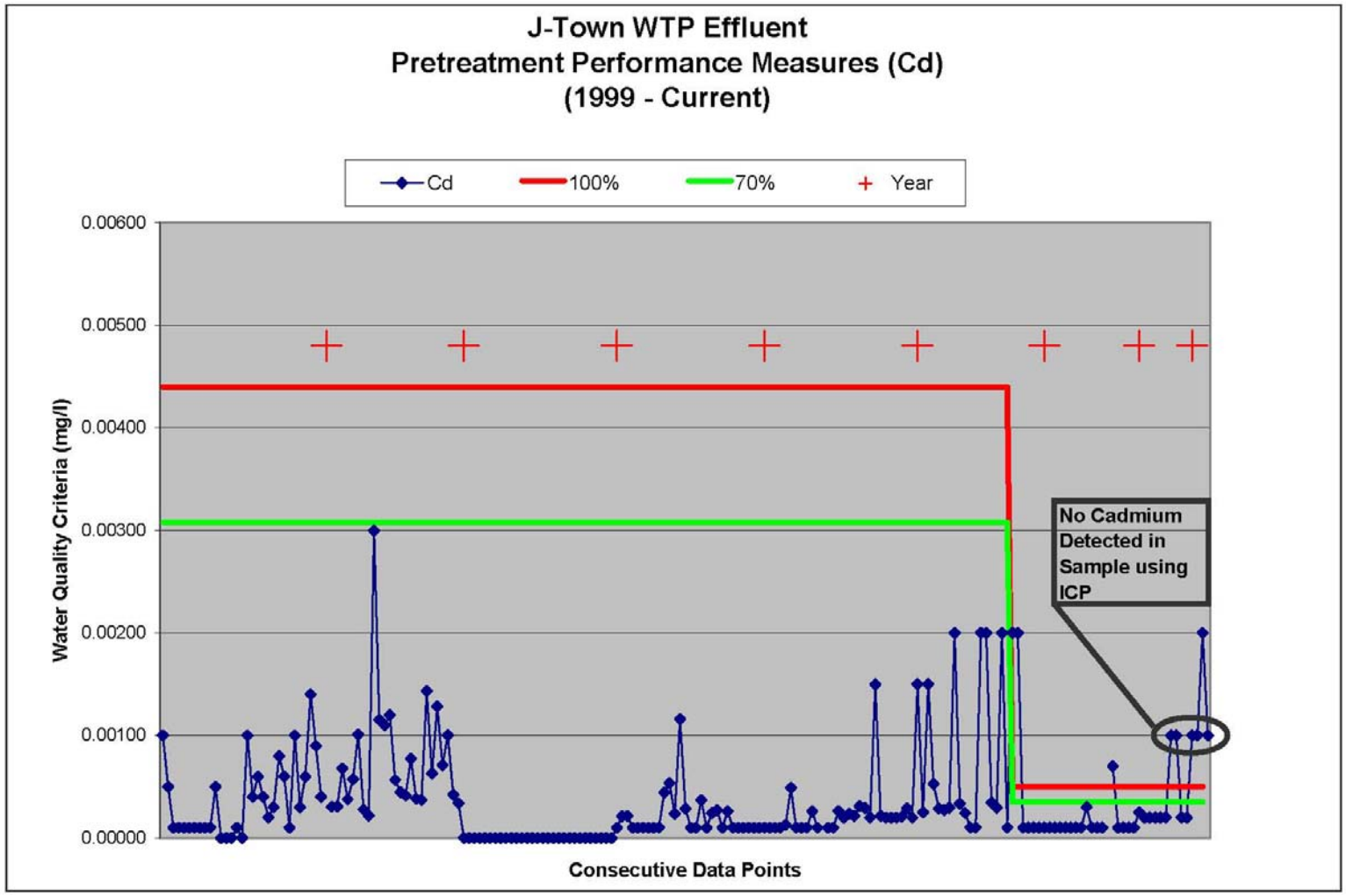


FIGURE 3.5-14



Any result of less than detection limit is graphed as one half the MDL.

- Cadmium was detected in the effluent only once in 2006 and 2007. Recent data was generated using a less sensitive analytical procedure (ICP vs. GFAA) which accounts for the apparent increase in baseline concentrations. The water quality criteria for cadmium changed in 2005 from 4.4 ug/L to 0.5 ug/L. The cadmium graph reflects the sudden change in water quality criteria. The graph displays the significant reduction in the water quality standard. To highlight the recent reduction in the water quality standard, Figure 3.5-14 is plotted with the vertical axis in concentration versus percentage of water quality criteria.

One effluent sample was collected for priority pollutant organics in 2006. No specific organic compounds were detected at concentrations of concern.

C. Aesthetic Quality

The operators of the J-Town WWTP will note any aesthetic concerns over the effluent quality in their daily log book. MSD operations staff did not report any compromises to the aesthetic quality of the effluent in 2006. One incidence of white foam on the aeration tanks and trace amounts in the effluent was observed in May 2007, but was not attributed to any user. Occasionally, color and/or foam were observed in the WWTP influent, but not observed in the effluent.

D. Biosolids Measures

1. Metals vs. 503 Regulations

Samples of the biosolids generated at the J-Town facility were taken one day during each quarterly sampling event. The samples were analyzed for metals and total solids. The results were converted into mg/KG concentrations for direct comparison to exceptional quality criteria in the EPA 503 regulations. Biosolids from this plant are removed and processed at the Morris Forman Wastewater Treatment Plant. MSD is not required to meet any standards. MSD does not directly land-apply biosolids from the J-Town WWTP. MSD selected the 503 regulation concentrations in lieu of the state regulations since they offer a more national perspective in this study. Data collected over the last five years were entered into a database and trend charts were prepared.

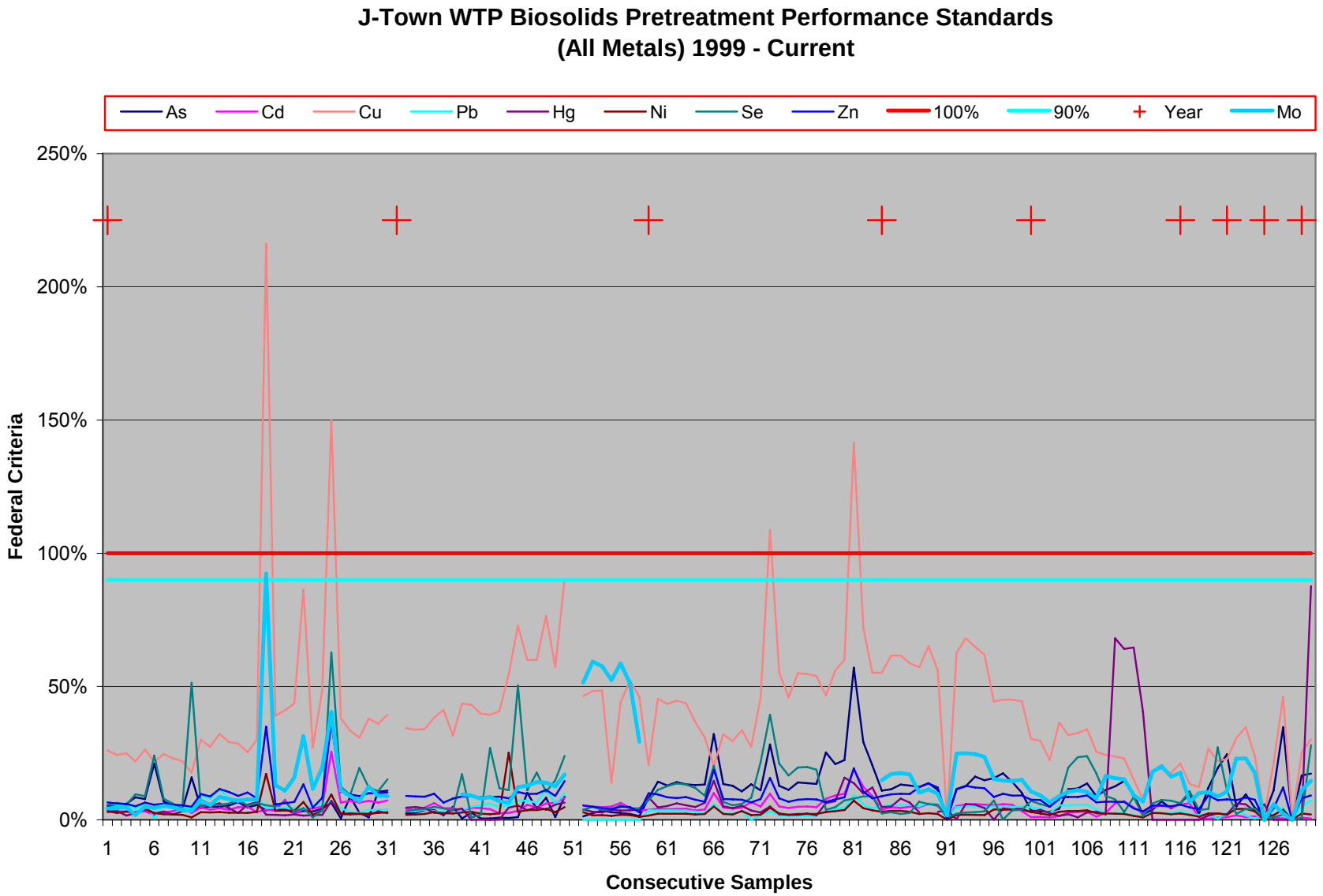
Figure 3.5-15 displays the normalized concentration of all metals in the J-Town biosolids. The threshold selected for biosolids was 90 percent of the exceptional quality sludge criteria from the 40 CFR 503 regulations.

E. Other Measures

1. Chronic Maintenance Concerns in Collection System

Operations personnel did not note any complaints or maintenance concerns for the collection system in 2006 or 2007.

FIGURE 3.5-15



2. Chronic Maintenance Concerns at WWTP

No maintenance concerns at the WWTP in 2006 or 2007 were attributed to industrial discharges.

3.6 REEVALUATION OF POLLUTANTS OF CONCERN

"Pollutants of concern" (POC) is a phrase coined for this project for parameters in the wastewater for which the utility should exercise heightened concern due to the data evaluation from the performance measures review. The following criteria for the determination of POCs were established with stakeholder involvement.

A parameter is considered a POC if:

1. There were multiple exceedances of any of the performance measures.

2. The data shows an increasing trend for that parameter toward any of the performance measures.

3. Concentrations of that parameter in the receiving stream are near water quality criteria (even though the pollutant source may not be pretreatment related).

4. Parameter is listed as a reason for the stream to be on the state's 303d list.

5. The parameter has a numeric limit on the WWTP's NPDES permit.

Table 3.6-1 identifies the current J-Town POCs based on these criteria and the data collected over the past five years.

Stream data collected in 2006 and 2007 is included in Appendix B. None of the parameters have elevated concentrations in Chenoweth Run when using the most sensitive analytical technique.

Based on data collected from 1999 through 2007, the POCs for the J-Town system are:

- Copper
- Cyanide (amenable)
- Lead
- BOD
- TSS
- Ammonia
- Total Phosphorus

TABLE 3.6-1

J-TOWN POLLUTION OF CONCERN SELECTION

Parameter	Frequent Exceedances of the PM	Increasing Trend Toward PM	Approaching Stream WQ[1]	Parameter Noted on 303d list	NPDES Permit Limit
Arsenic	No	No	No	No	No
Cadmium	No[2]	No	No	No	No
Chromium	No	No	No	No	No
Copper	**Yes**	No	No	No	No
Cyanide, A	**Yes**	No	**Yes**[2]	No	No
Iron	N/A	N/A	No	No	No
Lead	**Yes**[2]	No	**Yes**[2]	No	No
Mercury	No	No	No[2]	No	No
Nickel	No	No	No	No	No
Selenium	No	No	No	No	No
Silver	No	No	No	No	No
Zinc	No	No	No	No	No
BOD	No	No	N/A	No	**Yes**
TSS	No	No	N/A	No	**Yes**
Ammonia	No	No	N/A	No	**Yes**
Phosphorus	No	No	N/A	**Yes**	**Yes**

[1]Approaching stream water quality is considered true if there have been multiple exceedances in past two years.
[2]Detection limit issue.

Cadmium was added as a POC in 2005 based on the regulatory reduction in water quality criteria. When Graphite Furnace AA procedures (having a lower detection limit) were used to quantify the effluent concentration, the most recent data did not support cadmium as a POC.

Mercury was once considered a POC based on early data collection using a less sensitive analytical procedure. However, all data collected with the EPA 1631E procedure (having a lower detection limit) has supported taking mercury off the list of POCs.

MSD charted the POC mass loadings to the influent of the treatment plant. Appendix C contains influent mass loading figures for POCs.

3.7 REEVALUATION OF SIUS

Criteria selected by MSD and stakeholders to determine if an industrial user is a SIU includes any of the following:

- If the user discharges greater than 5 percent of flow or loading of a POC to the WWTP.
- If the user has been in significant noncompliance (SNC) at any time during the preceding two years.
- If the user has a reasonable potential to adversely impact the WWTP.
- If the user has the potential to discharge uncontrolled slug loads.

Table 3.7-1 displays the industrial contributions as a percentage of the treatment plant influent. The industries that contribute greater than five percent of the plant influent are identified. Based on a review of the data collected in 2006 and 2007, no new SIUs were identified, and JCK Enterprises, a current SIU, was eligible for an IU agreement as long as they did not discharge more than 5 percent of the influent phosphorus loading.

With the addition of cadmium to our POC list in 2005, industrial data revealed only one industry (Jones Plastic) that discharges more than 5 percent of the historical influent mass loading of cadmium.

3.8 PERFORMANCE ASSESSMENT REPORT

MSD has shown its commitment in providing a Performance Assessment Report to EPA and KYEPPC on an annual basis. Annual reports were submitted in April 2001, April 2002, April 2003, April 2004, April 2005, and April 2006, as well as this report dated June 2007.

TABLE 3.7-1

INDUSTRY CONTRIBUTIONS TO J-TOWN WWTP-2006 (POLLUTANTS OF CONCERN)

	Flow (mgd)	BOD (lbs/d)	TSS (lbs/d)	Ammonia N (lbs/d)	Total Phosphorus (lbs/d as P)	Copper (lbs/d)	Lead (lbs/d)	Mercury (lbs/d)	Cyanide, Amenable (lbs/d)
Company	*Conventional Pollutants*			*Nutrients*					
Tributary to MH 1									
Jones Plastic & Engineering	0.41%	0.62%	0.43%	0.47%		0.41%	0.77%		0.66%
Lantech	0.03%		0.01%	0.03%	2.29%	0.10%	0.06%		
Tributary to MH 2									
White Castle Distributing	0.43%	6.54%	0.73%			1.91%	0.32%		
Tributary to MH 3									
Tributary to MH 4									
JCK Enterprises	0.18%	0.06%	0.03%			0.05%	0.04%		

Above 5%

3.9 BIENNIAL REPORT ON COSTS AND REALLOCATION

MSD tabulated the baseline costs incurred to perform the project monitoring for the past several years. Details of the cost assessment appear in Appendix D of this report. Table 3.9-1 summarizes the cost differences.

Description of Program	Monitoring Costs
MSD's Historical Program (Prior to Grant Project)	$40,600
MSD's Revised Program (Since Initiation of Grant Project)	$217,700 in 1999 $212,000 in 2000
MSD's New Streamlined Program (Project XL)	$113,600 in 2001 $127,400 in 2002 $102,000 in 2003 $78,100 in 2004 $59,200 in 2005 $25,000 in 2006
MSD's Future Program (following Project XL	$11,700 in 2007

Table 3.9-1 Cost Assessment Differences

The cost of monitoring and data collection actually increased as a consequence of this new performance measure approach. MSD's historical program included only limited industrial and minimal treatment plant influent, effluent, and biosolids monitoring. No collection system or stream monitoring was included. The revised and streamlined programs include more extensive monitoring of the treatment plant influent, effluent, and biosolids; new monitoring of the collection system; more (but refined) monitoring of industrial discharges; and receiving stream monitoring. The revised and streamlined programs include both concentration and flow determinations at each location to allow calculation of mass loadings. MSD initiated an extensive one to two-year data collection effort that enabled MSD to determine actual POCs. The long-term annual costs for the "streamlined" program are less than the costs to establish POCs, but more than MSD's historical approach. The increased investment resulted in better and more meaningful data.

The 2002 monitoring costs were slightly higher than the 2001 monitoring costs because MSD elected to perform more extensive quarterly monitoring for the industries considered SIUs in accordance with the project specific definition.

The 2003 monitoring costs were lower than 2002 costs as MSD only sampled SIUs for one week each quarter and only for the POCs. All other previously permitted industries were not sampled in 2003.

The 2004 monitoring costs were lower than in 2003 as MSD only sampled SIUs for one week each quarter and only for the POCs. All other previously permitted industries were not sampled in 2004. Mercury sampling frequency was reduced in 2004, but a more sensitive and more expensive technique was employed for one of the samples.

The 2005 monitoring costs were lower than 2004 costs as MSD only sampled SIUs for one week each quarter and only for the POCs. All other previously permitted industries were not sampled in 2004. Mercury sampling frequency was reduced in 2005, but the more sensitive and expensive technique was employed for one of the samples.

The monitoring costs for 2006 are less than 2005 costs because experience with the system allowed a sufficient basis to reduce monitoring. MSD only collected industrial samples for POCs known to be significant for those industries and for only one day per quarter or per year.

As the Project XL pilot project concludes, MSD anticipates continuing the basic performance measure approach to collect future data. Less emphasis will be placed on routine collection system monitoring. Table 3.9-2 on the following page lists the industries, parameters, and frequency of sampling proposed after Project XL by MSD and through self monitoring.

TABLE 3.9-2

SIU SAMPLING REQUIREMENTS FOLLOWING PROJECT XL

Self Monitoring

	Pollutants of Concern							Other Pollutants																
Industry Name	Copper	Cyanide (Amenable)	Lead	BOD	TSS	Ammonia	Phosphorous	Flow	pH	Oil & Grease/Hydrocarbon	Oil & Grease Total	COD	Tempature	Cyanide Total	Cadmium	Mercury	Arsenic	Chromium	Nickel	Selenium	Silver	Zinc	TTO
**Jones Plastic & Engineering Corp	Q	Q	Q	Q		Q	Q	Q	Q	Q				Q	Q					Q	Q	Q	
JCK Enterprises, Inc.	Q		Q				Q	Q	Q	Q				Q	Q			Q	Q	Q	Q	Q	S
Lantech, Inc.	Q		Q				Q	Q	Q						Q		Q	Q	Q	Q	Q	Q	S
White Castle Distributing, Inc.				Q	Q			Q	Q		Q												
HL Lyons	Q		Q					Q	Q	Q				Q	Q			Q	Q		Q	Q	S
Papa Johns				S	S			S	S		S	S											
Winston Products	S		S					S	S	S				s	S			S	S		S	S	S
Russtech																							
Beechmont Press																							
Clarke Power Services																							
Cummins Cross Point																							
Dispenser Optical																							
Innovative Electronic Dsn																							
**Bramco/Brandeis																							
Southern Standard Carton																							
**Ryder Truck																							
**Print Tex USA																							

7D = Daily 3d = 3 Days/week M = Monthly Q = Quarterly S = Semiannually A = Annually

MSD Monitoring

	Pollutants of Concern							Other Pollutants															
Industry Name	Copper	Cyanide (Amenable)	Lead	BOD	TSS	Ammonia	Phosphorous	Flow	pH	Oil & Grease/Hydrocarbon	Oil & Grease Total	COD	Tempature	Cyanide Total	Cadmium	Mercury	Arsenic	Chromium	Nickel	Selenium	Silver	Zinc	TTO
**Jones Plastic & Engineering Corp	A	A	A	A	A		A	A	A	A		A			A		A	A	A	A	A	A	
JCK Enterprises, Inc.	A		A				A	A	A	A			A	A	A		A	A	A	A	A	A	A
Lantech, Inc.	A		A				A	A	A					A	A		A	A	A	A	A	A	A
White Castle Distributing, Inc.				S	S			S	S		S		S										
HL Lyons	A		A					A	A	A			A	A	A		A	A	A	A	A	A	A
Papa Johns			S	S	S			S	S		S	S	S										
Winston Products	S		S					S	S	S				s	S			S	S		S	S	S
Russtech	S	S	S	S	S	S			S	S		S			S	S	S	S	S		S	S	
Beechmont Press																							
Clarke Power Services																							
Cummins Cross Point																							
Dispenser Optical																							
Innovative Electronic Dsn																							
**Bramco/Brandeis																							
Southern Standard Carton																							
**Ryder Truck																							
**Print Tex USA																							
Other Sampling																							
Collection System MH 5																							
Collection System MH 6																							
WWTP Influent	Q	Q	Q	3D	3D	3D	3D	7D	7D	Q											Q	Q	Q
WWTP Effluent	Q	Q	Q	3D	3D	3D	3D	7D	7D	Q											Q	Q	Q
WWTP Biosolids	A	A	A		A																A	A	A
Chenoweth Run - Upstream																							
Chenoweth Run - Downstream																							

7D = Daily 3d = 3 Days/week M = Monthly Q = Quarterly S = Semiannually A = Annually

SECTION 4
VOLUNTARY COMMITMENTS

4.1 POLLUTION PREVENTION

MSD has made the voluntary commitment to educate the public regarding pollution prevention (as appropriate). MSD made much progress in 2006 and 2007 toward that end.

In past years, Pollution Prevention (P2) Audits were conducted by independent entities for four SIUs and 11 IU Agreement companies. The P2 Audit recommendations were made to meet specific environmental objectives for each company. The P2 Audits were confidential between the contracted auditor and the IU, however, MSD requested some pertinent information be shared as it related to the wastewater quality of the J-Town WWTP. Some industries elected to submit the entire audit report in its entirety and others submitted only the requested information in letter format.

Overall, a few of the audit recommendations were completed immediately by the industrial users, while other more costly recommendations had to be investigated as to their cost effectiveness. During 2004, MSD determined the percentage of recommendations completed by the facilities. Of the 20 recommendations made in the audits, six were implemented, 13 were still under consideration, and one was not implemented.

MSD is continuing dialog with the Louisville Water Company (LWC) to explore possibilities of further reducing the corrosive properties of the drinking water that result in high copper concentrations. Based on early discussions, it appears there is not much room for adjustment. In 2005, MSD collected tap water samples in the J-Town area to attempt to quantify the extent copper and lead leaching from water lines and plumbing.

Project XL staff introduced the project to over 40 interested students at Jeffersontown High School. These students attended a 50-minute project overview meeting, assisted in collecting samples of their tap water from home, and attended an all day field trip where they saw the production of drinking water at one water treatment plant and treatment of wastewater at two wastewater treatment plants. A total of 42 tap water samples were collected from the area. None of the water samples contained copper or lead in concentrations that exceeded the drinking water criterion. However, 26 of the 42 samples did exceed the treatment plant effluent water quality criteria for copper. The highest copper concentration observed was 30 times higher than the effluent standard. None of the samples contained lead above the treatment plant effluent water quality criteria.

Several of the past stakeholder-approved environmental projects had pollution prevention themes. The Gaslight Festival booth, Backyard Habitat workshop, a public educational meeting held at the University of Louisville, a mercury pollution prevention/best management practices educational information CD for local dentists, and Chenoweth Run clean-up projects served to educate the public about ways to reduce pollution, especially for POCs. MSD participated in these projects by furnishing in-kind expertise and debris disposal.

MSD prepared Pollutant of Concern Fact Sheets for Copper, Lead, Mercury, and Cyanide. These were distributed at all of the public events throughout the project.

MSD performed a pollution prevention audit at the J-Town WWTP. No significant POC reduction opportunities were identified.

MSD prepared several press releases and distributed these releases to various local newspapers. Informative articles were published in the Louisville Courier-Journal, the Jeffersontown Image, and the Jeffersontown News-Leader.

Pollution prevention efforts continued in 2006 and 2007. The following project initiatives all had pollution prevention themes:

- Project XL sponsored a public educational booth at the Gaslight festival. The booth provided an opportunity to engage local residents and discuss stressors to their watershed and connect their actions to an impact.

- Project XL initiated a storm drain labeling initiative for the watershed. This project included an education of the volunteers on the direct relationship between storm drains and Chenoweth Run. In turn, volunteers placed door hangers at residences and businesses to educate the public about protecting Chenoweth Run by properly using storm drains. MSD included many of the project's educational and outreach materials in the door hangers.

- Project XL sponsored a seminar at U of L where Karst features and their risk to water quality was discussed.

- MSD prepared a public educational brochure on the appropriate use of lawn care products titled "Is Your Lawn to Die For?". The tri-fold handout was professionally typeset and distributed at every opportunity.

- MSD expanded on the mercury pollution prevention educational materials prepared for the dental offices in the watershed and attended a statewide meeting of the ADA and is distributing a CD to dental offices throughout Jefferson County.

4.2 STAKEHOLDER MEETINGS

MSD held a general stakeholder meeting on April 24, 2006 and April 23, 2007. Summaries of these meetings are included in Appendix E.

The stakeholder work group assisted MSD by evaluating data to identify POCs, reviewing industrial data to identify SIUs, and collaborating on the 2006-2007 supplemental environmental projects.

MSD made the voluntary commitment to hold one formal stakeholder meeting per year. MSD has already held the annual stakeholder meeting for 2007 on April 23.

SECTION 5
ASPIRATIONS

5.1 REDUCE POC LOADINGS ON AN ANNUAL AVERAGE BASIS

MSD aspires to reduce the annual mass discharge of POCs. Based on the data collected in 2006 and 2007, the POCs for the J-Town system are:

- Copper
- Cyanide (Amenable)
- Lead
- BOD
- TSS
- Ammonia
- Total Phosphorus

MSD eliminated two of the POCs from last year. They are:

- Cadmium (added in 2006 because of new water quality standards, removed in 2007 based on new data).

- Mercury (removed based on most recent data).

MSD monitored the discharge of these POCs during 2006 and 2007 as presented in Section 3. MSD's regulatory modifications became effective on January 1, 2003 with the reissuance of SIU permits and IU/NCIU Agreements.

As the project concludes, MSD is proud to report that the trends for POCs during the course of the project are generally good. MSD's treatment plant performance for conventional parameters (BOD, TSS) and nutrients (Ammonia, Phosphorus) showed stable or improved results. For other POCs, the following trends can be observed when reviewing concentration data presented in Section 3:

- Copper–Concentrations were fairly consistent over the course of the project. Data collected during the middle of the project was supplied by another laboratory and suggests copper may not be as much of an issue as believed.

- Cyanide (Amenable)–Concentrations were fairly consistent to decreasing over the life of the project. Much of the data was non-detects.

- Lead–Concentrations were fairly consistent over the course of the project. Data collected using the Graphite Furnace AA (most sensitive analytical procedure) suggest this POC is a less significant concern.

- Cadmium–Concentrations were fairly consistent over the life of the project. Data collected using the Graphite Furnace AA (most sensitive analytical procedure) suggest this pollutant is not of concern in spite of the order-of-magnitude reduction in the Water Quality Criteria during the project.

- Mercury-One might conclude from reviewing the graph that Mercury has been dramatically reduced, however, it should be noted that project data developed prior to 2004 was analyzed by a different analytical method than has been employed since then. In 2004, MSD completed a Clean Sampling/Clean Analysis experiment that demonstrated the benefit of employing more rigorous sampling QA/QC and using a method designed to eliminate naturally occurring mercury via sampling and analytical procedure. MSD has been using EPA Method 1631E since 2004, in advance of the requirement to do so placed by the Kentucky Division of Water.

  In addition to the improved testing, MSD has taken many steps to reduce the risk of a discharge of mercury into the WWTP through Project XL. Approximately 20 pounds of liquid mercury were removed from homes and dental offices by Project XL activities.

Figure 5.1-1 presents the mass contribution of POCs by collection system manhole. This information was utilized to understand sources of POCs and for targeting specific sources for reduction. As mentioned in Section 4, MSD identified several initiatives aimed at reducing the contributions of POCs.

The average annual mass discharges of the identified POCs are listed in Table 5.1-1.

Pollutant of Concern	Units	Baseline Average (1999-2002)	Year 1 (2003)	Year 2 (2004)	Year 3 (2005)	Year 4 (2006)
Flow	(mil gal)	1,157	1,285	1,489	1,308	1,523
CBOD [2]	(lb/yr)	65,705	57,208	44,565	40,009	36,108
TSS [2]	(lb/yr)	102,469	103,840	98,612	76,202	91,967
NH_3-N [2]	(lb/yr)	24,505	7,768	16,978	26,662	4,983
PHOSPHORUS [2]	(lb/yr)	13,648	9,879	8,837	5,413	10,200
LEAD	(lb/yr)	66	92	106	24	69
COPPER	(lb/yr)	160	124	122	144	236
MERCURY	(lb/yr)	1	1	0.3	0.03	0
SELENIUM	(lb/yr)	22	9	9	41	22
CADMIUM	(lb/yr)	6.3	3.1	7.7	1.5	4
CYANIDE (Amenable)	(lb/yr)	40	34	65	40	56

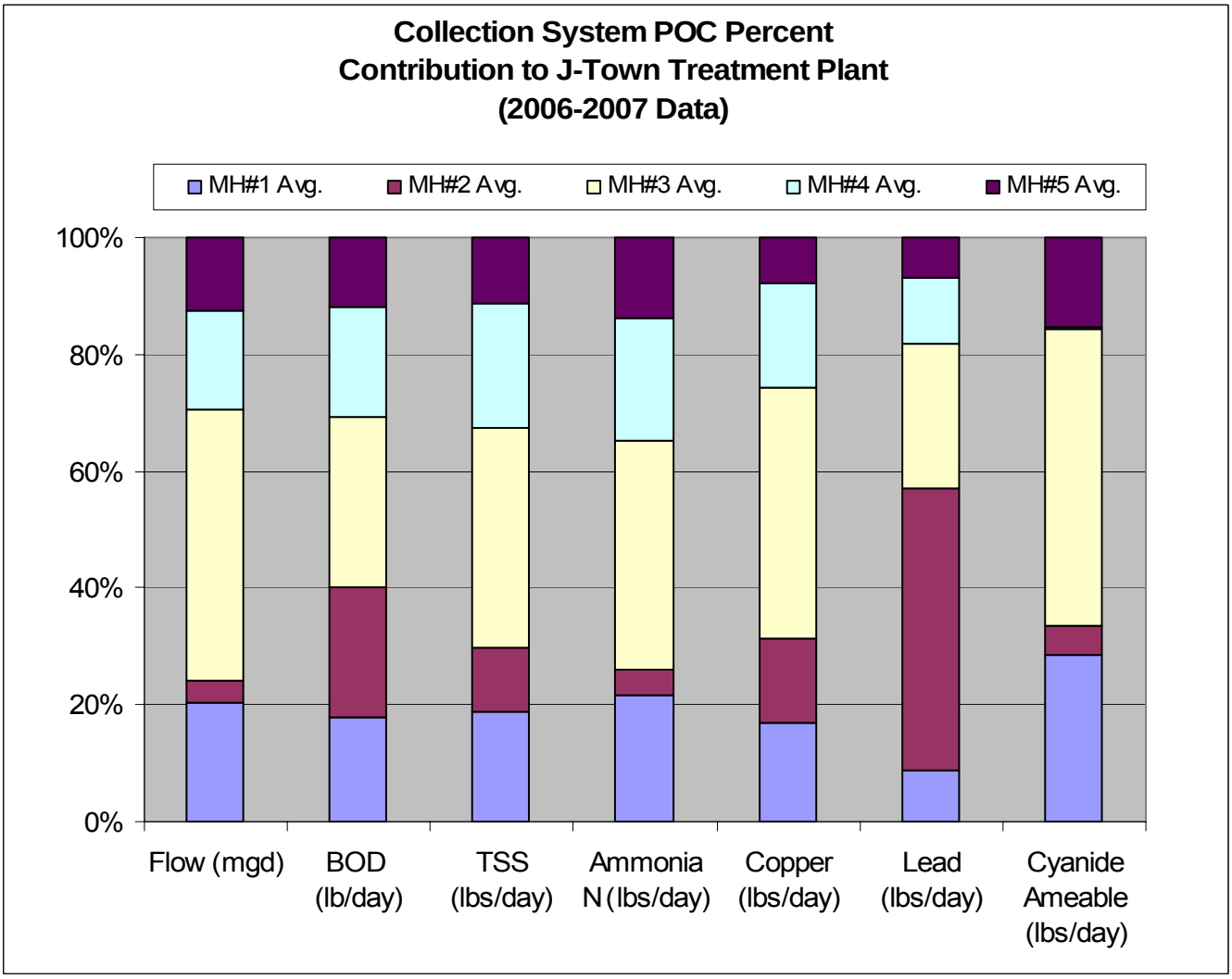
(1) Calculated using average daily loading where data was available x 365 days/yr.
(2) Mass permit limits equate to 243,528 lb/yr BOD, 365,292 lb/yr TSS, 85,235 lb/yr NH_3-N and 18,265 lb/yr for Phosphorus are KPDES monthly average concentrations and 4 mgd rated capacity.

Table 5.1-1 Estimated Annual Average Effluent Loading (lb/yr)[1]

MSD will use these effluent discharges as a baseline to measure the future success of the project. Success will be determined as keeping the conventional and nutrient discharges below KPDES permit limits and by actual reduction of the annual mass discharge of other pollutants.

Year 2006 saw a reduction in most mass discharges from the Jeffersontown WWTP in spite of higher flows. As the table indicates, there is much volatility in the annual mass discharges by year. Project XL has collected better data that may have influenced the long-term reduction in discharge of mercury and cadmium. Operation of the treatment plant was likely responsible for increases or

FIGURE 5.1-1



decreases of conventional pollutants (BOD, TSS, NH_3N, TP). The copper and silver discharges were slightly elevated in 2006 compared to previous years. As the project concludes, one can see that little change was seen as a result of less regulation on industry. Many efforts were expended to reduce the discharge of these POCs which does not show up in the effluent mass loadings. However, these efforts have served to educate industrial customers and the general public about the concern over these pollutants. At a very minimum, the risk of elevated discharges of the POCs has been reduced.

5.2 MAINTAIN NON-POCs BELOW THRESHOLDS

MSD aspires to maintain the discharge of pollutants that do not meet the project definition of a POC below the thresholds established in the EPA grant to study Pretreatment Performance Measures. Based on data collected in 2006 and 2007, all non-POCs were maintained below the set thresholds except for a few anomalies or analytical technique issues. These are discussed below:

- Silver was detected in the effluent on three occasions in 2006 above the benchmark.
- Zinc was detected in the effluent on one occasion above the benchmark, but was considered an anomaly.

For the duration of the project, MSD observed that these non-POCs stayed within their normal limits without the need for substantial regulation on industrial customers.

5.3 HOLISTIC WATERSHED MANAGEMENT APPROACH

This project, along with the EPA grant project to study pretreatment performance measures on a watershed basis, allowed MSD to review the Chenoweth Run watershed on a more holistic basis. MSD evaluated the impact of the WWTP discharge on the watershed and has identified performance measures to regularly monitor the impact. An important aspect of this project includes identification of stressors in Chenoweth Run upstream of the discharge from the J-Town WWTP.

MSD intends to proactively manage their program to address the identified stressors. MSD aspires to expand the holistic approach to watershed health from this project to other watersheds in Jefferson County.

The Project XL team developed a cooperative relationship with other departments within MSD. The MSD Wet Weather Area Team prepares an annual report titled ‘WATERS of Jefferson County’ that summarizes other holistic watershed initiatives. The Project XL team is working with the personnel responsible for preparation of this report to share information collected on the Chenoweth Run. An excerpt from the July 1, 2005–June 30, 2006 MS4 Annual report is included in Appendix F.

MSD is considering an initiative to direct wastewater from one of the service areas pumped into the J-Town sewershed and redirecting the discharge to another regional WWTP. One industrial user with an IU agreement (Papa Johns) may be affected.

Project XL enabled MSD to develop a more holistic approach to managing the pretreatment program. MSD believes that the success of this approach can lead to improved water quality more quickly and in a more cost-effective manner than any other approach.

SECTION 6
PROJECT MILESTONES

6.1 PERFORMANCE MEASURE MONITORING

For the duration of the XL project, MSD is committed to continue its monitoring program for performance measures in the J-Town sewershed as begun with the EPA grant project. As reported in Section 3 of this report, MSD continued its monitoring program during 2006 and 2007 and will continue the program on a more limited basis after Project XL concludes.

6.2 DETERMINATION OF ELIGIBLE IUs

In 2002, MSD identified the IUs that no longer qualify as an SIU under the FPA definition. This effort was accomplished within three months of the effective date (June 1, 2002) or by September 1, 2002. Please refer to our 2002 Annual Report. MSD reevaluated the SIUs each year to determine if they still required a SIU permit or can be issued an industrial user agreement in lieu of their SIU permit. During the life of the project, one of the SIU permitted industries (Russtech) became eligible for an IU agreement. The agreement, in lieu of a permit, was endorsed at the April 2005 Stakeholder Meeting. Russtech was issued an IU agreement in 2005. No other SIUs became eligible for an IU agreement during the five year project term.

6.3 EXECUTION OF SITE SPECIFIC AGREEMENTS WITH ELIGIBLE IUs

MSD executed agreements (in lieu of permits) with 12 of the 13 IUs that no longer qualified as an SIU under the FPA definition. This effort was accomplished within seven months of the effective date (June 1, 2002) or by December 31, 2002. In 2005, one new industry was issued a site specific agreement. None of the users with IU or NCIU agreements were asked to revert back to a SIU permit in 2006 or 2007. As Project XL concludes, all IU Agreements will expire.

6.4 ISSUE NEW SIU PERMITS

MSD executed revised permits with their SIUs and one IU (as redefined in the FPA) in 2002. This effort was accomplished within seven months of the effective date (June 1, 2002) or by December 31, 2002. Please refer to our 2002 Annual Report. In 2004, one new industrial discharger (JCK Enterprises) was issued a SIU permit. No new industrial users were permitted in 2006 and 2007. At the completion of Project XL, several of the industries with IU agreements will be issued SIU permits in accordance with MSD's Wastewater Discharge Regulations.

6.5 REVIEW INDUSTRY COMPLIANCE

MSD reviewed the compliance status of monitored industries for the period ending December 31, 2006. Beginning in 2003, only industries with SIU permits were monitored. The following industries are in good standing according to the XL Project definition of SNC:

- White Castle
- Lantech
- JCK Enterprises

- Jones Plastic

6.6 UPDATED LIST OF POCs

The list for POCs is to be updated annually according to the FPA Section IX.E.

As all recent data was reviewed, MSD determined POCs for the J-Town sewershed/Chenoweth Run watershed as follows:

- Copper–WWTP effluent concentrations were historically above the threshold and occasionally above the water quality criteria. (Note: The threshold for the pollutants was established as 70 percent of the applicable water quality criteria.) The 2006 and 2007 data shows five of 14 samples were at or above the water quality criteria (100 percent). The most sensitive analytical technique will continue to be used in the future.

- Cyanide (Amenable)–Cyanide was not detected in any WWTP effluent samples in 2006 and 2007. This is an improvement to past years where an occasional quantifiable concentration was observed.

- Lead–WWTP effluent concentrations included one of the data points above the 100 percent water quality criteria benchmark in 2006 and 2007. When lead was analyzed using a more sensitive analytical technique, the measured concentration was always below the water quality benchmark. The only sample taken in 2006 and 2007 with an apparent elevated lead concentration was not analyzed with the most sensitive analytical technique. This observation underscores the importance of using the most sensitive analytical procedure.

- BOD–This parameter is listed on the KPDES permit for the J-Town WWTP. MSD is reliably in compliance.

- TSS–This parameter is listed on the KPDES permit for the J-Town WWTP. MSD is reliably in compliance.

- Ammonia–This parameter is listed on the KPDES permit for the J-Town WWTP. MSD is reliably in compliance.

- Total Phosphorus–This parameter is listed on the KPDES permit for the J-Town WWTP. MSD is reliably in compliance. One month of noncompliance resulted from problems with the chemical feed system. Compliance resumed promptly.

Upon review of the 2006 and 2007 data, MSD has removed two metals from the list of POCs. They include:

- Mercury–Mercury was not detected in the effluent samples in 2006 and 2007. The samples were analyzed with the most sensitive analytical technique and it demonstrated the absence of mercury

relative to the threshold concentration. Future analytical work will continue to employ the more sensitive technique.

- Cadmium–Cadmium was added to the list of POCs during the project because of the regulatory reduction in the water quality criteria. Cadmium was detected in the effluent only once in 2006 and 2007. The water quality criteria was lowered from the previous standard. Figure 3.5-14 displays the significant reduction in the water quality standard.

SECTION 7
STATUS OF OTHER REPORTS

MSD prepared several reports in association with the Pretreatment Performance Measures 104(b)(3) Grant project. The reports are titled:

> "Pretreatment Performance Measures in a Watershed-Based Management System Project Summary Report EPA Grant No. CX 0826669-01-0", dated April 2002.
>
> "Report on Pretreatment Performance Measures, West County Sewershed, Report EPA Grant No. CX 0826669-01-0", dated April 2002.
>
> "West County Sewershed Background Report" dated January 2002.
>
> "Jeffersontown Collection System Monitoring Documentation" manual for the Emergency Response Technicians and Pretreatment Inspection Staff dated June 2000.

The Project Summary Report is directly related to the Jeffersontown Sewershed. The two West County reports do not discuss J-Town or Chenoweth Run.

SECTION 8
PROJECT CLOSE OUT

At the end of May 2007, the regulatory flexibility provided by Project XL will draw to a close. MSD and stakeholders discussed the transition and changes required for industrial permitting at the end of Project XL.

8.1 REVIEW OF FUTURE IU PERMITTING

MSD's Wastewater Discharge Regulations require any discharger of greater than 5,000 gallons per day of process wastewater be considered a Significant Industrial User (SIU).

MSD reviewed the industries currently regulated under Project XL. Industries were determined to be a SUI based on the quantity and characteristics of their discharge. Industries that discharged a POC in any significant amount or industries that discharged greater than 5,000 gpd of process flow were sent a permit application in early 2007. MSD pretreatment program staff reviewed the application as they were submitted and determined the list of actual SIUs. For a list of the post-XL permit status see Table 8.1-1.

MSD presented their plan for post-XL permitting at the April Stakeholders meeting. The information presentation described the transition to permits and expected dates of issuance.

8.2 FUTURE SAMPLING

A significant part of the Project XL was sampling and data collection. MSD reviewed the costs and approach to collection of future data in establishing the Post-XL 2007 sampling schedule presented in Table 3.9-2. MSD plans to return to more of the traditional pretreatment program approach, but will maintain the ability to collect data from the collection system manholes, if deemed necessary to track pollutant loadings.

TABLE 8.1-1

INDUSTRIAL PERMITTING STATUS FOLLOWING PROJECT XL

Company	XL Permit Type	Post XL Permit Type
Beechmont Press	IUA	None
Bramco	IUA	TBD
Clarke Power	IUA	None
Cummins Cumberland	IUA	None
Dispenser Optical	IUA	None
HL Lyons	IUA	SIU/CAT
Innovative Electronic Design	IUA	None
JCK Enterprise	SIU	SIU/CAT
Jones Plastic Eng	SIU	SIU
Lantech	SIU	SIU/CAT
P J Food Service	IUA	General
Print Tex USA	IUA	TBD
Russ Tech Admixtures	IUA	TBD
Ryder Truck	IUA	TBD
Southern Standard Carton	IUA	TBD
White Castle	SIU	SIU
Winston Products	IUA	SIU/CAT

KEY

IUA-Industrial User Agreement
SIU-Significant Industrial User
CAT-Categorical
TBD-Permit Application Pending

APPENDIX A
SAMPLE LOCATIONS, PARAMETERS, AND DATES

SAMPLE LOCATIONS, PARAMETERS, AND DATES FOR 2006

Location	Parameter	Year 2006 MSD Data Collection Efforts
J-Town WTP Effluent	Flow	Daily and continuously
	Conventionals	Three days per week per KPDES Permit plus daily samples during weekly events below
	Nutrients	Three days per week per KPDES Permit plus daily samples during weekly events below
	Metals & CN	Two or Four days during weeks of April 10-13, June 19-20, August 16-17, October 16-17
	Organics	One sample (3/2/2006)
	Others (O&G)	None
	Biomonitoring	Tests during months of each quarter
J-Town WTP Biosolids	Flow	Daily volumes
	Nutrients	One sample during weeks of April 10-16, June 19-25, August 14-20, November 6-12
	Metals & CN	One sample during weeks of April 10-16, June 19-25, August 14-20, November 6-12
J-Town WTP Influent	Flow	Daily and continuously
	Conventionals	Three days per week per KPDES Permit plus daily samples during weekly events below
	Nutrients	Three days per week per KPDES Permit plus daily samples during weekly events below
	Metals & CN	Four days during weeks of April 10-13, Jun 19, August 16-17, October 16-17
	Organics	One sample (3/2/2006)
	Others (O&G)	None
Collection System MH1, MH2, MH3, MH4,	Flow	Daily and continuously since approximately July 2000 for MH 1-4, Two days during weeks of April 10-16, June 19-20, August 14-20, October 16-22
	Conventionals	Two days during weeks of April 10-16, June 19-20, August 14-20, October 16-22
	Nutrients	Two days during weeks of April 10-16, June 19-20, August 14-20, October 16-22
	Metals & CN	none
	Organics	
	Others (O&G)	
Industries tributary to CS MH (See lists below)	Flow	Two or Four days during sampling period (see industry list)
	Conventionals	Two or Four days during sampling period (see industry list)
	Nutrients	Two or Four days during sampling period (see industry list)
	Metals & CN	Two or Four days during sampling period (see industry list)
	Organics	none
	Others (O&G)	Two or Four days during sampling period (see industry list)
Chenoweth Run upstream and downstream	Flow	One sample during weeks of April 10-16, June 19-25, August 14-20
	Conventionals	One sample during weeks of April 10-16, June 19-25, August 14-20
	Nutrients	One sample during weeks of April 10-16, June 19-25, August 14-20
	Metals & CN	One sample during weeks of April 10-16, June 19-25, August 14-20
	Others (O&G)	None
		* more upstream samples than downstream- recorded occurrences where both samples taken

Industries tributary to MH1 include:
- Beechmont Press (NA),
- Bramco Brandies (NA),
- Cummins Cumberland (NA),
- Dispensers Optical (NA),
- Jones Plastic & Engineering (Two days per quarter – Conventionals & Metals & O&G),
- Lantech (Four days per quarter – Conventionals & Nutrients & Metals & CN),
- Russtech (NA)
- Southern Std Carton (NA),

Industries tributary to MH2 include:
- Clark Detroit Diesel (NA),
- Ryder Truck (NA),
- White Castle Distributing (Four days per quarter – Conventionals & Metals),
- Winston Products (NA),

Industries tributary to MH3 include:
- IED (NA),

Industries tributary to MH4 include:
- JCK Enterprises, Inc. (Four days per quarter – Conventionals & Metals & O&G & CN),
- H.L. Lyons (NA),
- Papa Johns Foods (NA)

SAMPLE LOCATIONS, PARAMETERS, AND DATES FOR 2007

Location	Parameter	Year 2007 MSD Data Collection Efforts
J-Town WTP Effluent	Flow	Daily and continuously
	Conventionals	Three days per week per KPDES Permit plus daily samples during weekly events below
	Nutrients	Three days per week per KPDES Permit plus daily samples during weekly events below
	Metals & CN	Two days during weeks of March 19-20, May 21-22
	Organics	One sample (incomplete as of June 2007)
	Others (O&G)	None
	Biomonitoring	1st Quarter
J-Town WTP Biosolids	Flow	Daily volumes
	Nutrients	One sample during weeks of March 26- April 1, May 21-27
	Metals & CN	One sample during weeks of March 26- April 1, May 21-27
J-Town WTP Influent	Flow	Daily and continuously
	Conventionals	Two days per week per KPDES Permit plus daily samples during weekly events below
	Nutrients	Three days per week per KPDES Permit plus daily samples during weekly events below
	Metals & CN	Two days during weeks of March 12-18, May 21-27,
	Organics	One sample (incomplete as of June 2007)
	Others (O&G)	None
Collection System MH1, MH2, MH3, MH4,	Flow	Daily and continuously since approximately July 2000 for MH 1-4,
	Conventionals	Two days during weeks of March 19-25, May 21-27
	Nutrients	Two days during weeks of March 19-25, May 21-27
	Metals & CN	Two days during weeks of March 19-25, May 21-27
	Organics	none
	Others (O&G)	
Industries tributary to CS MH (See lists below)	Flow	Two or Four days during sampling period (see industry list)
	Conventionals	Two or Four days during sampling period (see industry list)
	Nutrients	Two or Four days during sampling period (see industry list)
	Metals & CN	Two or Four days during sampling period (see industry list)
	Organics	none
	Others (O&G)	Two or Four days during sampling period (see industry list)
Chenoweth Run upstream and downstream	Flow	One sample during weeks of March 21-27, May 21-27
	Conventionals	One sample during weeks of March 21-27, May 21-27
	Nutrients	One sample during weeks of March 21-27, May 21-27
	Metals & CN	One sample during weeks of March 21-27, May 21-27
	Others (O&G)	None

Industries tributary to MH1 include:
- Beechmont Press (NA),
- Bramco Brandies (NA),
- Cummins Cumberland (NA),
- Dispensers Optical (NA),
- Jones Plastic & Engineering (Two days per quarter – Conventionals & Metals & O&G),
- Lantech (Four days per quarter – Conventionals & Nutrients & Metals & CN),
- Russtech (NA),
- Southern Std Carton (NA),

Industries tributary to MH2 include:
- Clark Detroit Diesel (NA),
- Ryder Truck (NA),
- White Castle Distributing (Four days per quarter – Conventionals & Metals),
- Winston Products (NA),

Industries tributary to MH3 include:
- IED (NA),

Industries tributary to MH4 include:
- JCK Enterprises, Inc. (Two days per quarter – Conventionals & Metals & CN),
- H.L. Lyons (NA),
- Papa Johns Foods (NA)

APPENDIX B
STREAM DATA

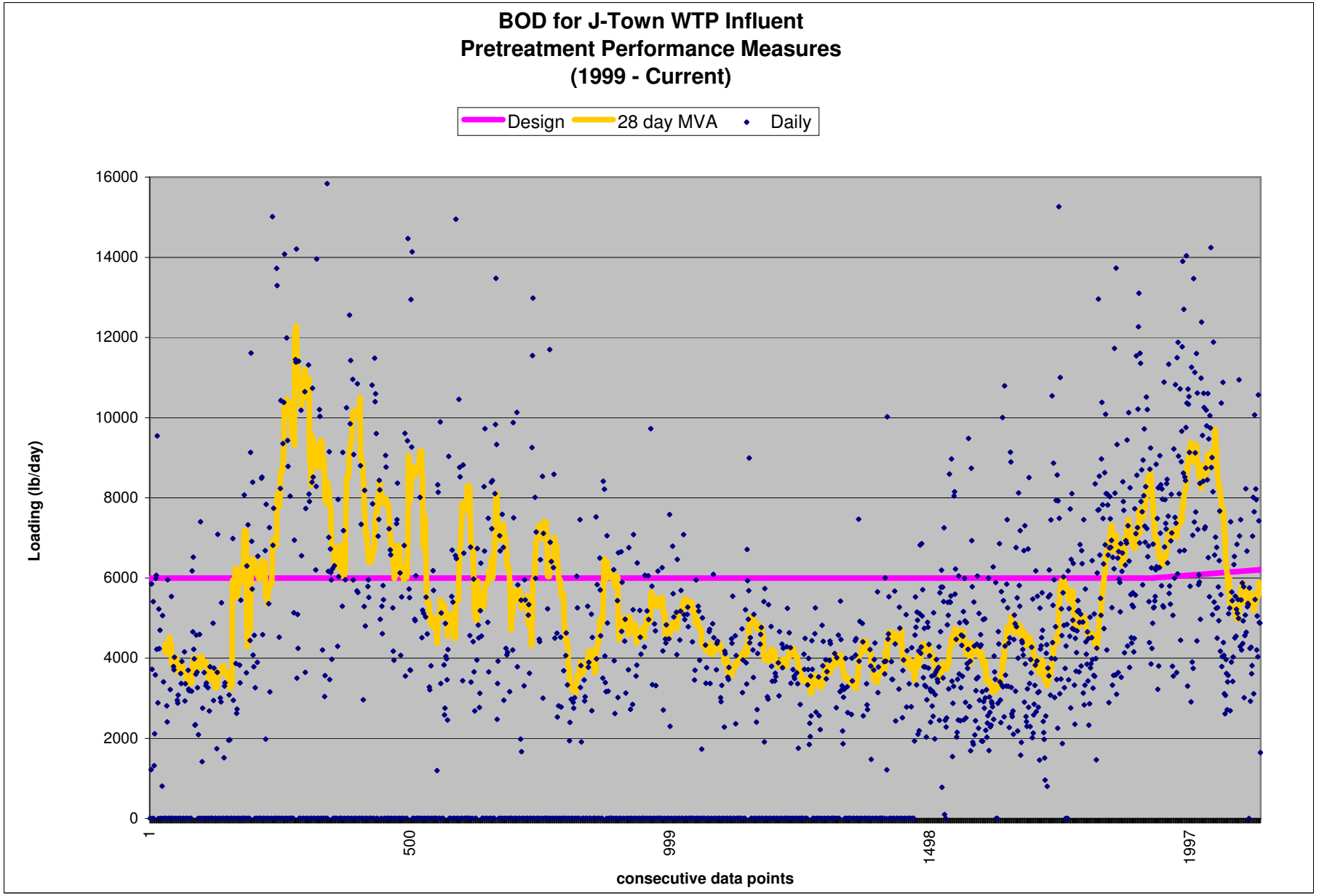
Appendix B

Chenoweth Run Stream Analytical Data
(2002-2007)

Location Code	LOCDESCR	COLDATE	BOD	COD	TSS	Ammonia N	Total Phosphorus	Aluminium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Titanium	Vanadium	Zinc	Cyanide Amenable
WQ		Lowest WQC								0.05			0.0049	0.175		0.0196	1	0.0096		0.00002		0.109	0.005	0.018				0.2498	0.0052
EFFCR002	Upstream	2/15/2002	1	15	26	0.06	0.006	0.15	0.006	0.002	0.08	0.002	0.003	0.005	0.003	0.003	0.27	0.012	0.055	0.000118	0.006	0.001	0.001	0.001	0.05	0.006	0.001	0.013	0.01
EFFCR002	Upstream	6/14/2002	1	5	11	0.17	0.041	0.224	0.006	0.002	0.066	0.002	0.003	0.005	0.003	0.003	0.283	0.015	0.049	0.00005	0.003	0.001	0.0011	0.001	0.05	0.013	0.001	0.008	0.01
EFFCR002	Upstream	8/16/2002	1	45	95	0.06	0.069	1.04	0.006	0.002	0.104	0.002	0.003	0.004	0.003	0.003	1.37	0.008	0.437	0.00005	0.004	0.001	0.00123	0.001	0.05	0.048	0.001	0.022	0.01
EFFCR002	Upstream	11/8/2002	1	15	3	0.34	0.036	0.095	0.006	0.002	0.072	0.002	0.003	0.004	0.003	0.003	0.098	0.014	0.06	0.00005	0.005	0.001	0.001	0.001	0.05	0.001	0.001	0.008	0.01
EFFCR002	Upstream	2/24/2003	13	15	29	0.06	0.632	0.0015	0.003	0.00132	0.071	0.001	0.00029	0.006	0.003	0.004	0.328	0.001	0.057	0.00005	0.005	0.008	0.001	0.0075	0.025	0.008	0.003	0.004	0.01
EFFCR002	Upstream	5/16/2003	2	16	9	5.5	0.024	0.339	0.003	0.001	0.059	0.001	0.0015	0.002	0.0015	0.0015	0.328	0.007	0.057	0.000084	0.003	0.0005	0.00187	0.0005	0.025	0.009	0.0005	0.004	0.01
EFFCR002	Upstream	8/15/2003	2	20	6	0.26	0.033	0.308	0.003	0.001	0.081	0.001	0.0015	0.001	0.0015	0.0015	0.176	0.001	0.069	0.00011	0.004	0.0005	0.001	0.002	0.025	0.0055	0.0005	0.041	0.01
EFFCR002	Upstream	11/13/2003	4	19	15	0.06	0.026	0.627	0.003	0.001	0.059	0.001	0.0015	0.003	0.0015	0.0015	0.67	0.001	0.082		0.004	0.003	0.001	0.001	0.025	0.022	0.0005	0.004	0.003
EFFCR002	Upstream	2/11/04	3	10	16	0.05	0.027		0.003	0.008	0.066	0.001	0.004	0.003	0.0015	0.022	0.281	0.018	0.071		0.003	0.003	0.0026	0.001	0.025	0.008	0.0005	0.018	0.01
EFFCR002	Upstream	5/11/04	2	10	17	0.05	0.033		0.012	0.006	0.081	0.002	0.0002	0.003	0.0015	0.022	0.205	0.018	0.056	0.000082	0.006	0.003	0.001	0.001	0.025	0.008	0.008	0.018	0.01
EFFCR002	Upstream	8/10/04	1.94	19	6	0.05	0.09		0.003	0.006	0.081	0.001	0.0002	0.002	0.0015	0.022	0.18	0.018	0.063		0.004	0.003	0.002	0.001	0.025	0.008	0.0005	0.018	0.01
EFFCR002	Upstream	11/9/04	2	10	4	0.05	0.027		0.003	0.006	0.0742	0.001	0.0002	0.00504	0.0015	0.022	0.18	0.018	0.0614		0.0085	0.003	0.002	0.001	0.025	0.0055	0.0005	0.0476	0.01
EFFCR002	Upstream	3/22/05	4	20	9	0.05		0.161	0.01	0.01	0.054	0.002	0.0002	0.001	0.002	0.017	0.19	0.007	0.063		0.005	0.007	0.002	0.001	0.012	0.011	0.05	0.011	0.01
EFFCR002	Upstream	6/21/05	12	39	69	0.05		0.839	0.007	0.012	0.092	0.002	0.0002	0.001	0.002	0.005	0.997	0.013	0.153		0.011	0.001	0.002	0.001	0.008	0.021	0.004	0.013	0.01
EFFCR002	Upstream	8/16/05	2	19	31	0.05		0.359	0.007	0.012	0.058	0.002	0.0002	0.001	0.002	0.004	0.603	0.009	0.068		0.006	0.001	0.002	0.001	0.008	0.014	0.004	0.02	0.01
EFFCR002	Upstream	10/19/05	2	19	11	0.05		0.692	0.021	0.012	0.105	0.002	0.0002	0.007	0.002	0.019	0.871	0.011	0.22		0.002	0.001	0.002	0.001	0.008	0.012	0.004	0.332	0.01
EFFCR002	Upstream	4/13/06	2	30	3	0.05	0.517	0.297	0.024	0.015	0.028	0.001	0.0002	0.003	0.002	0.021	0.074	0.00161	0.002		0.015	0.003	0.002	0.002	0.014	0.022	0.006	0.056	0.01
EFFCR002	Upstream	6/20/06	4	39	82	0.05	0.109	0.991	0.024	0.017	0.04	0.001	0.0002	0.003	0.002	0.027	1.51	0.00244	0.196		0.008	0.005	0.002	0.002	0.014	0.022	0.006	0.011	0.01
EFFCR002	Upstream	6/26/06	1	20	6	0.05	0.27	0.631	0.024	0.014	0.044	0.001	0.002	0.004	0.002	0.014	0.074	0.037	0.02		0.009	0.006	0.058	0.008	0.014	0.022	0.006	0.072	
EFFCR002	Upstream	8/17/06					0.079	3	0.024	0.014	0.088	0.001	0.001	0.005	0.002	0.019	2.27	0.001	0.148		0.02	0.006	0.002	0.002	0.014	0.105	0.006	0.027	0.01
EFFCR002	Upstream	9/27/06	1	30	2	0.05	0.061	0.078	0.024	0.015	0.074	0.002	0.0002	0.003	0.002	0.005	0.092	0.001	0.041		0.023	0.003	0.058	0.002	0.014	0.022	0.006	0.019	
EFFCR002	Upstream	12/12/06	1	12	7	0.05	0.038	0.089	0.024	0.019	0.068	0.001	0.0002	0.006	0.002	0.011	0.126	0.001	0.06		0.018	0.007	0.058	0.002	0.014	0.022	0.006	0.011	
EFFCR002	Upstream	3/27/07	4	10	80	0.1	0.036	0.062	0.015	0.016	0.071	0.001	0.001	0.002	0.002	0.003	0.15	0.059	0.063		0.025	0.002	0.058	0.012	0.029	0.002	0.002	0.022	
EFFCR002	Upstream	5/23/07					0.548	0.365	0.083	0.016	0.029	0.001	0.001	0.002	0.002	0.013	0.182	0.056	0.019		0.038	0.002	0.058	0.012	0.029	0.002	0.002	0.032	
EFFCR005	Downstream	2/15/2002	4	35	30	0.06	0.714	0.34	0.006	0.002	0.038	0.002	0.003	0.004	0.003	0.011	0.3	0.012	0.049	0.000253	0.008	0.001	0.001	0.001	0.05	0.005	0.001	0.036	0.01
EFFCR005	Downstream	6/14/2002	1	10	8	0.14	0.389	0.242	0.006	0.002	0.044	0.002	0.003	0.005	0.003	0.006	0.236	0.011	0.028	0.00005	0.005	0.001	0.0011	0.001	0.05	0.008	0.001	0.018	0.01
EFFCR005	Downstream	8/16/2002	1	30	13	0.06	0.988	0.14	0.007	0.002	0.021	0.002	0.003	0.002	0.003	0.013	0.02	0.006	0.023	0.000221	0.013	0.001	0.001	0.001	0.05	0.006	0.001	0.047	0.01
EFFCR005	Downstream	11/8/2002	1	26	20	0.46	0.716	0.331	0.006	0.002	0.047	0.002	0.003	0.004	0.003	0.006	0.377	0.018	0.04	0.00005	0.007	0.001	0.001	0.001	0.05	0.004	0.001	0.018	0.01
EFFCR005	Downstream	2/24/2003	2	5	18	0.06	0.135	0.0015	0.003	0.00167	0.08	0.001	0.0003	0.001	0.003	0.092	0.492	0.001	0.056	0.000137	0.003	0.005	0.00153	0.008	0.025	0.003	0.002	0.004	0.01
EFFCR005	Downstream	5/16/2003	3	21	6	1.7	0.263	0.261	0.003	0.001	0.04	0.001	0.0015	0.002	0.0015	0.0015	0.175	0.009	0.035	0.000177	0.004	0.0005	0.00107	0.0005	0.025	0.005	0.0005	0.0075	0.01
EFFCR005	Downstream	8/15/2003	2	20	3	0.34	0.11	0.422	0.003	0.001	0.038	0.001	0.0015	0.001	0.0015	0.005	0.003	0.004	0.033	0.000089	0.008	0.004	0.001	0.0005	0.025	0.004	0.0005	0.039	0.01
EFFCR005	Downstream	11/14/2003	2	10	9	0.06	0.38	0.286	0.003	0.001	0.042	0.001	0.0015	0.0005	0.0015	0.0015	0.092	0.004	0.027		0.006	0.0005	0.00105	0.0005	0.025	0.004	0.0005	0.008	0.003
EFFCR005	Downstream	2/12/04	3	19	4	0.77	0.277		0.012	0.006	0.045	0.002	0.004	0.002	0.0015	0.022	0.408	0.018	0.045		0.005	0.003	0.001	0.001	0.025	0.008	0.008	0.037	0.01
EFFCR005	Downstream	5/12/04	2	30	2	13	0.586		0.012	0.006	0.04	0.002	0.00022	0.003	0.002	0.022	0.187	0.018	0.033	0.000082	0.03	0.003	0.001	0.001	0.025	0.016	0.0005	0.032	0.01
EFFCR005	Downstream	8/11/04	1.89	19	44	0.05	0.215		0.003	0.006	0.035	0.002	0.0002	0.003	0.002	0.022	0.18	0.018	0.029		0.007	0.003	0.002	0.001	0.025	0.008	0.0005	0.05	0.003
EFFCR005	Downstream	11/10/04	1.1	10	28	0.05	0.032		0.003	0.006	0.059	0.001	0.0002	0.004	0.0015	0.022	0.548	0.018	0.074		0.008	0.003	0.002	0.001	0.025	0.029	0.0005	0.093	0.01
EFFCR005	Downstream	3/24/05	4	30	6	2		0.23	0.007	0.01	0.035	0.002	0.0002	0.002	0.003	0.017	0.19	0.005	0.052		0.005	0.007	0.002	0.001	0.012	0.004	0.05	0.015	0.044
EFFCR005	Downstream	6/22/05	19	39	8	5.4		0.2	0.007	0.012	0.031	0.002	0.0002	0.001	0.002	0.009	0.068	0.011	0.06		0.015	0.001	0.002	0.001	0.008	0.006	0.004	0.044	0.011
EFFCR005	Downstream	8/17/05	2	19	13	0.05		0.899	0.007	0.012	0.033	0.002	0.0002	0.002	0.002	0.006	0.031	0.009	0.016		0.012	0.001	0.002	0.001	0.008	0.015	0.004	0.021	0.01
EFFCR005	Downstream	10/20/05	3	10	1	7		0.578	0.007	0.012	0.022	0.002	0.0002	0.008	0.002	0.012	0.167	0.013	0.037		0.01	0.001	0.002	0.001	0.013	0.003	0.004	0.013	0.019
EFFCR005	Downstream	4/14/06	2.00	10	3	0.05	0.038	0.078	0.02	0.01	0.072	0.001	0.00	0.00	0.002	0.004	0.053	0.023	0.044		0.02	0.007	0.00	0.002	0.01	0.02	0.01	0.005	0.01
EFFCR005	Downstream	6/21/06	2.00	39	5	0.05	0.603	0.426	0.024	0.02	0.033	0.001	0.00	0.00	0.002	0.021	0.217	0.029	0.02		0.013	0.003	0.00	0.002	0.01	0.02	0.01	0.011	0.01
EFFCR005	Downstream	8/18/06					0.443	0.592	0.024	0.014	0.039	0.001	0.00	0.00	0.002	0.022	0.17	0.033	0.022		0.005	0.003	0.00	0.002	0.01	0.02	0.01	0.083	0.01

Value is below the detection level
Red color means exceeded the WQ standard

APPENDIX C
INFLUENT MASS LOADING FIGURES FOR POCs



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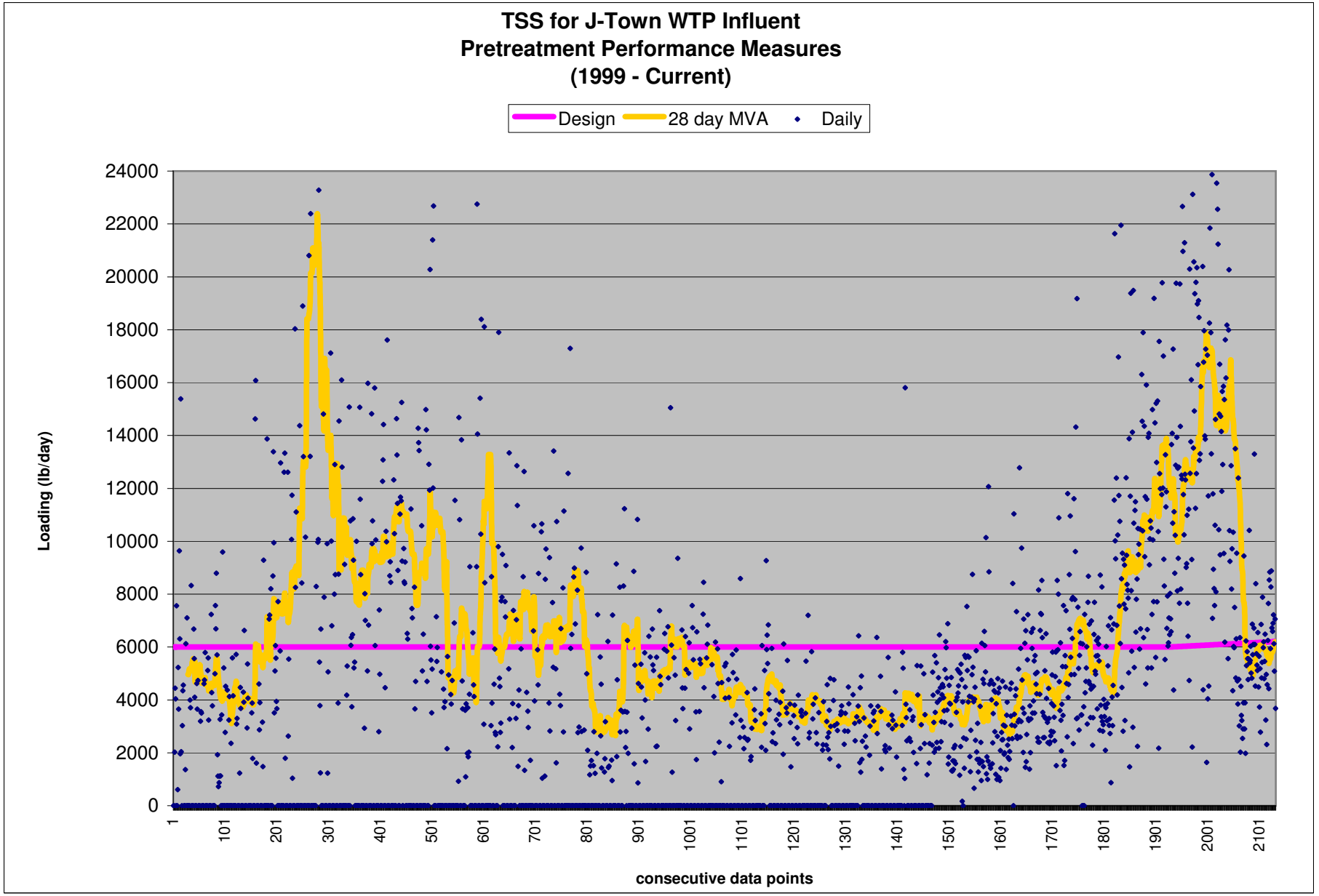

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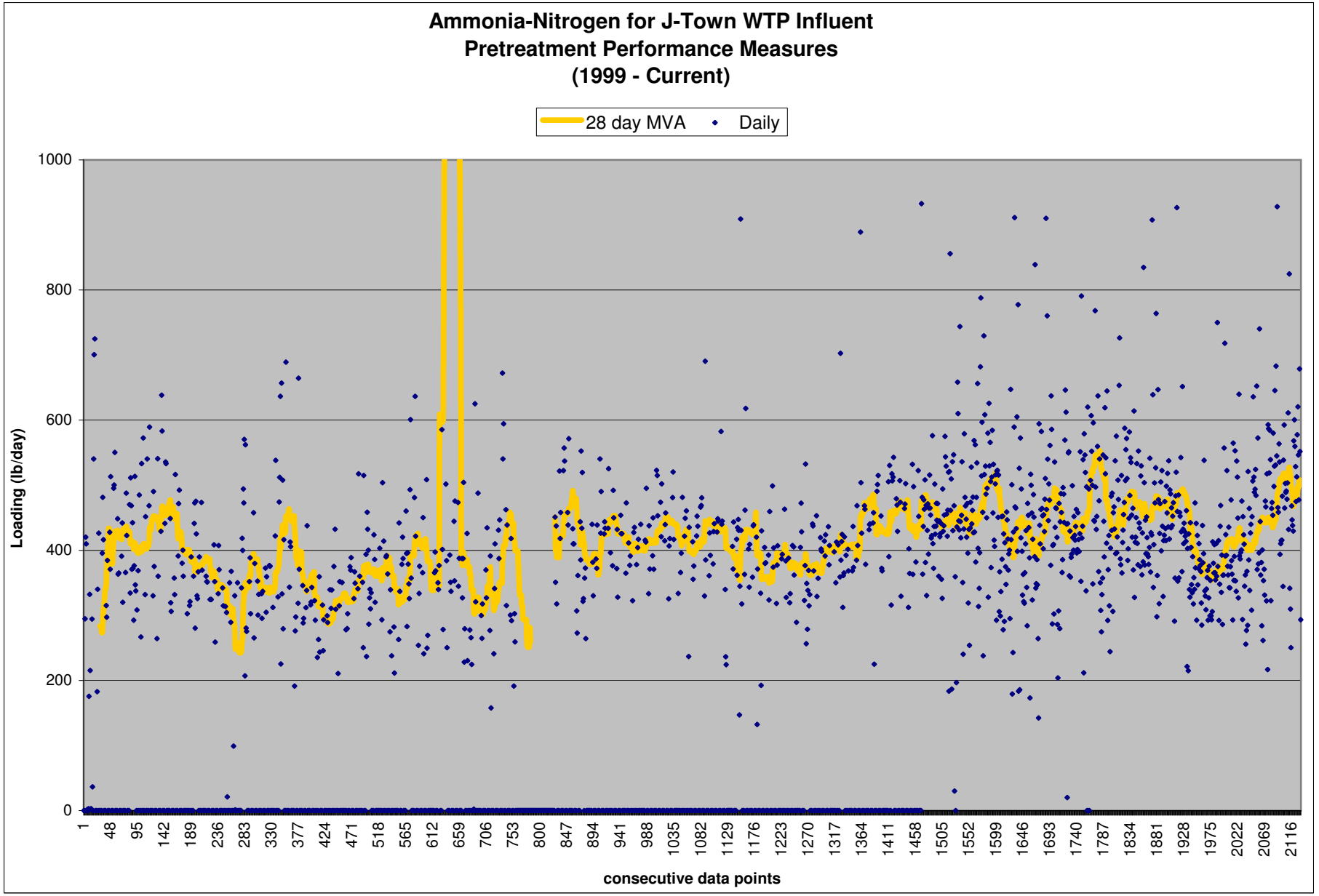

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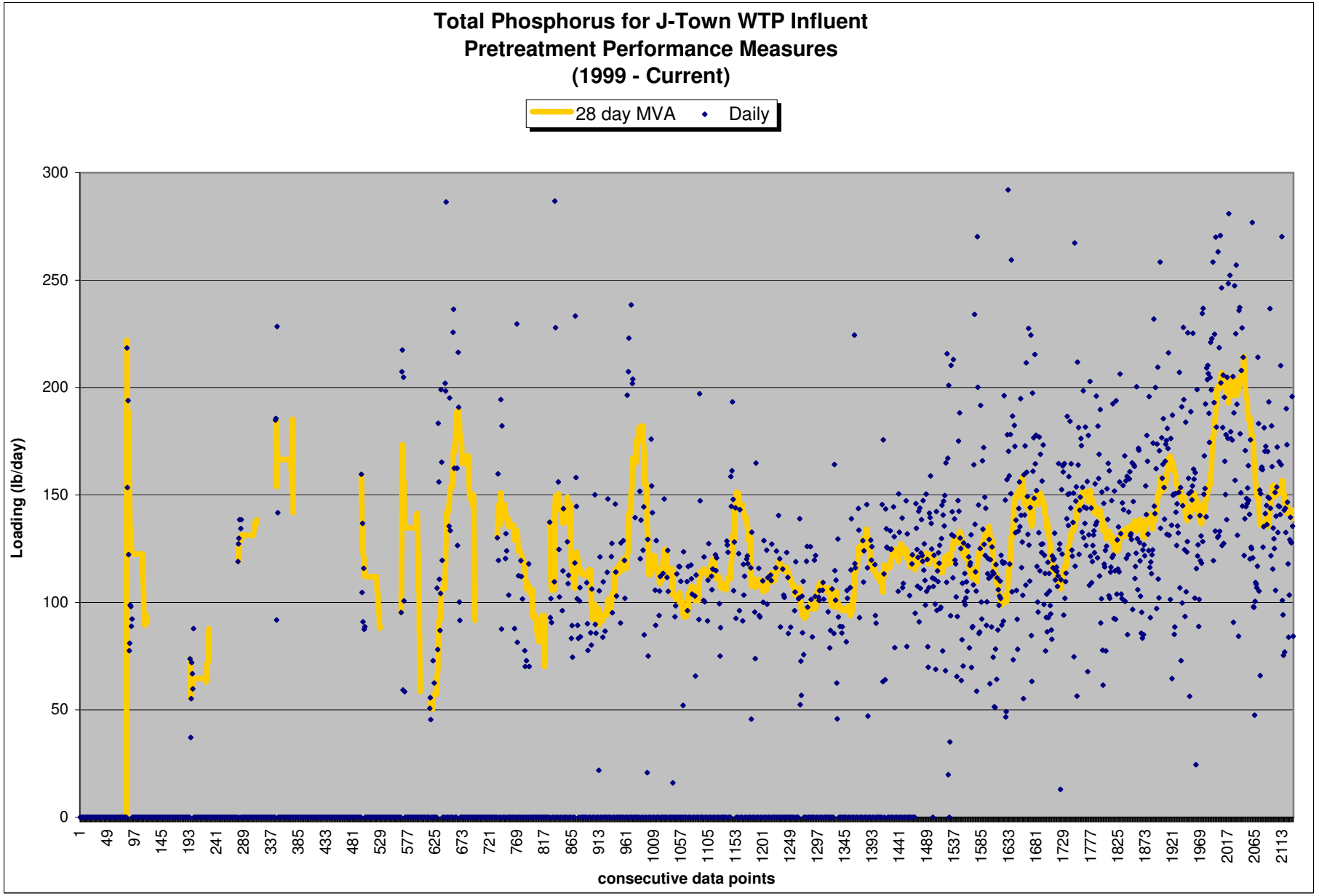

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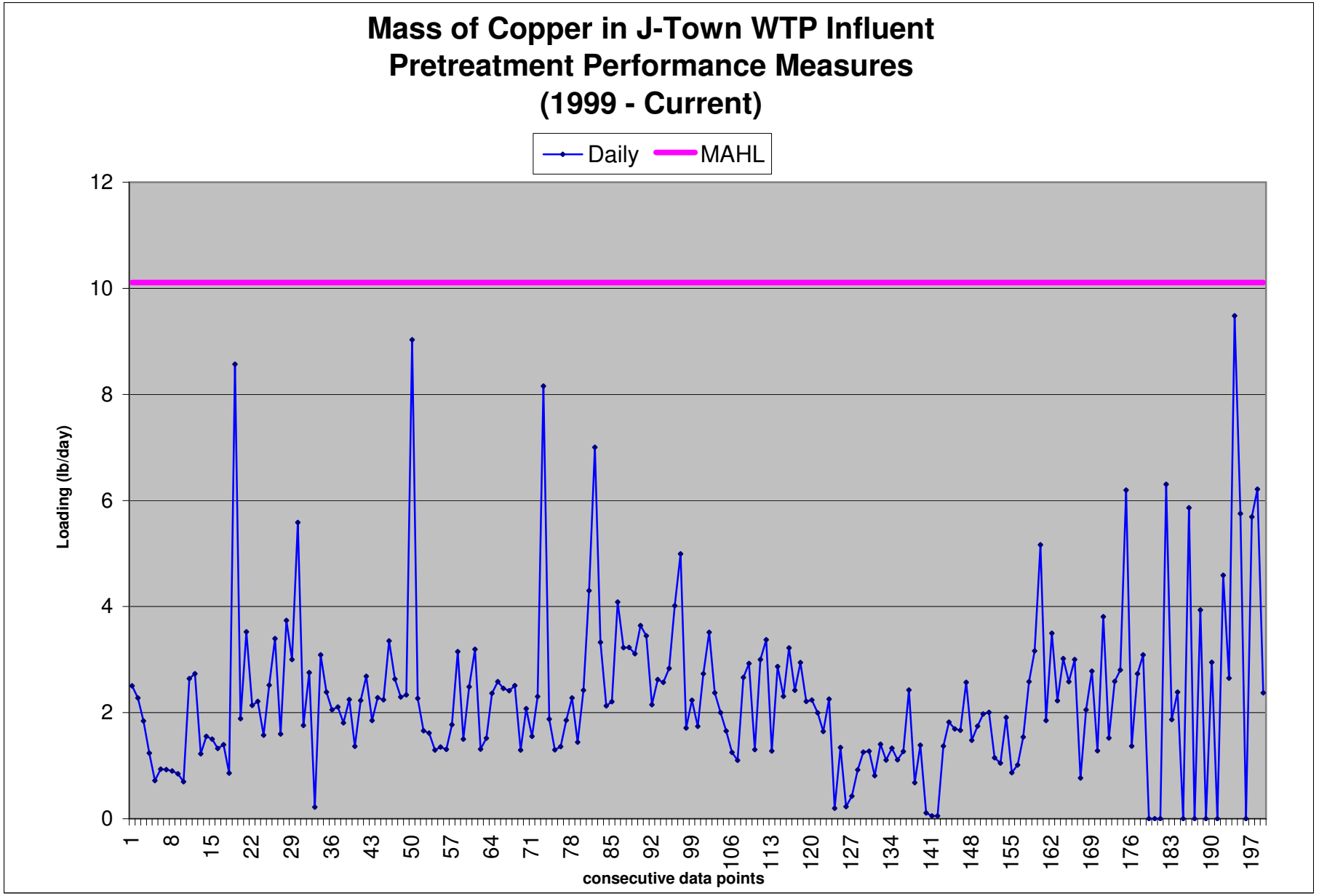

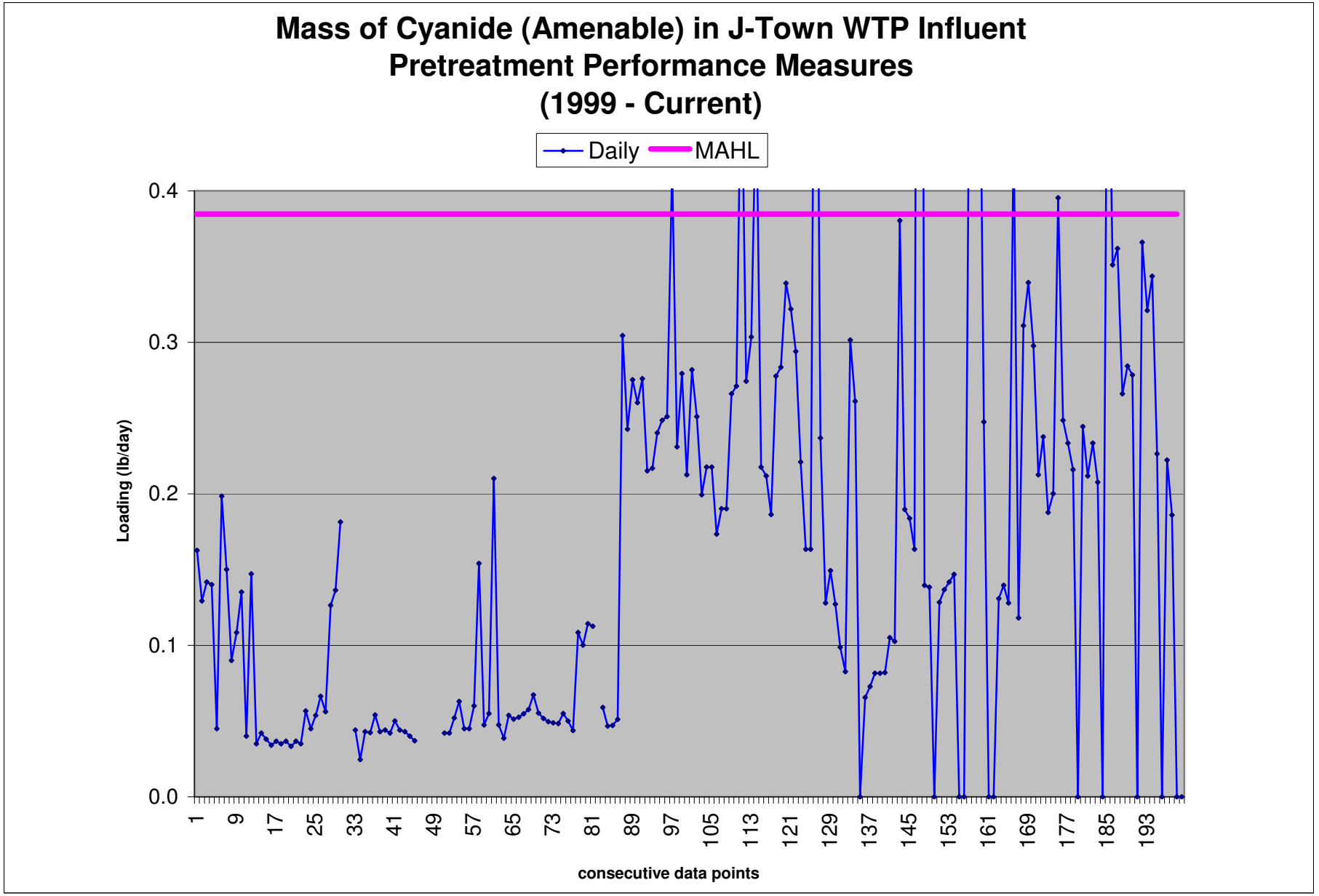

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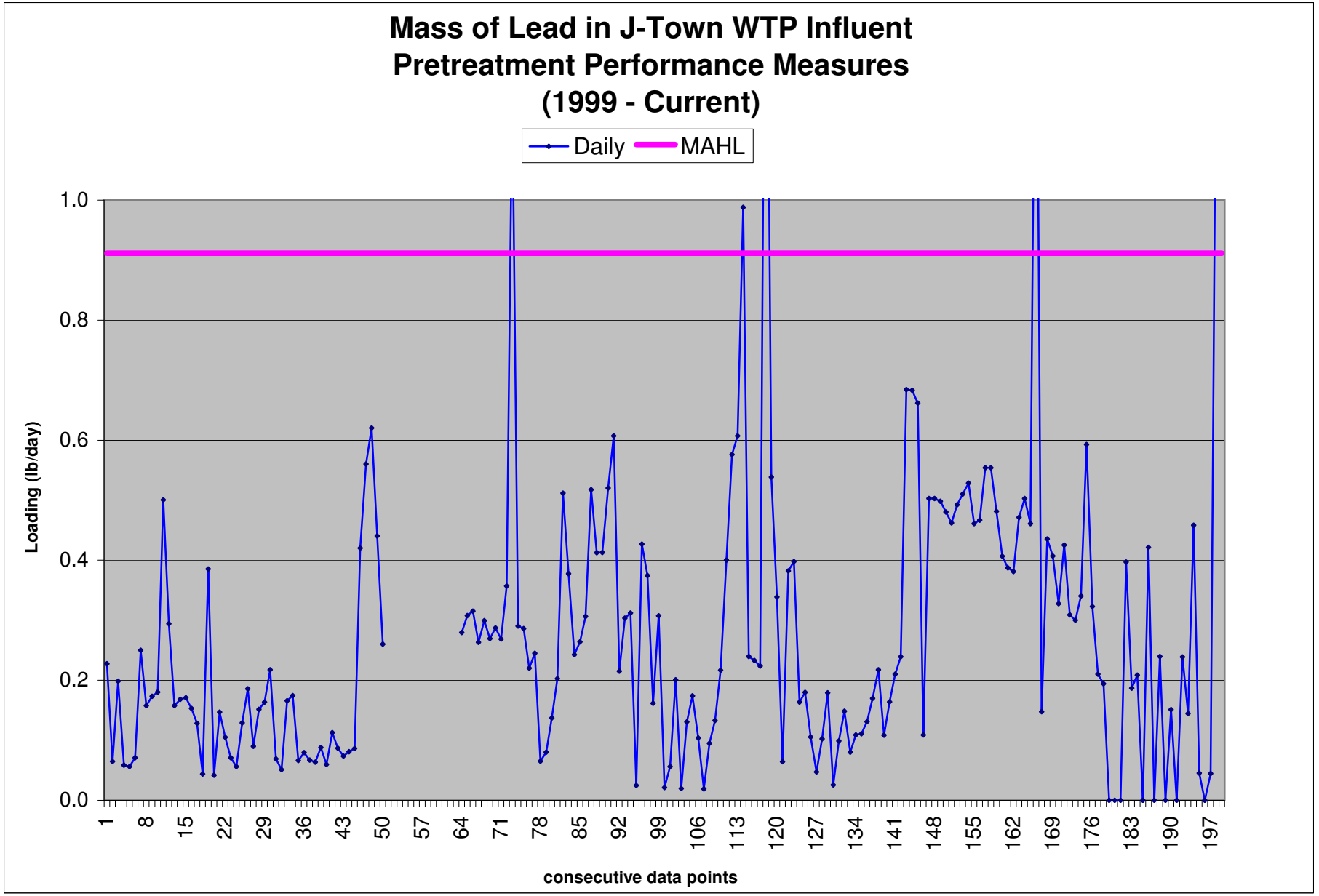

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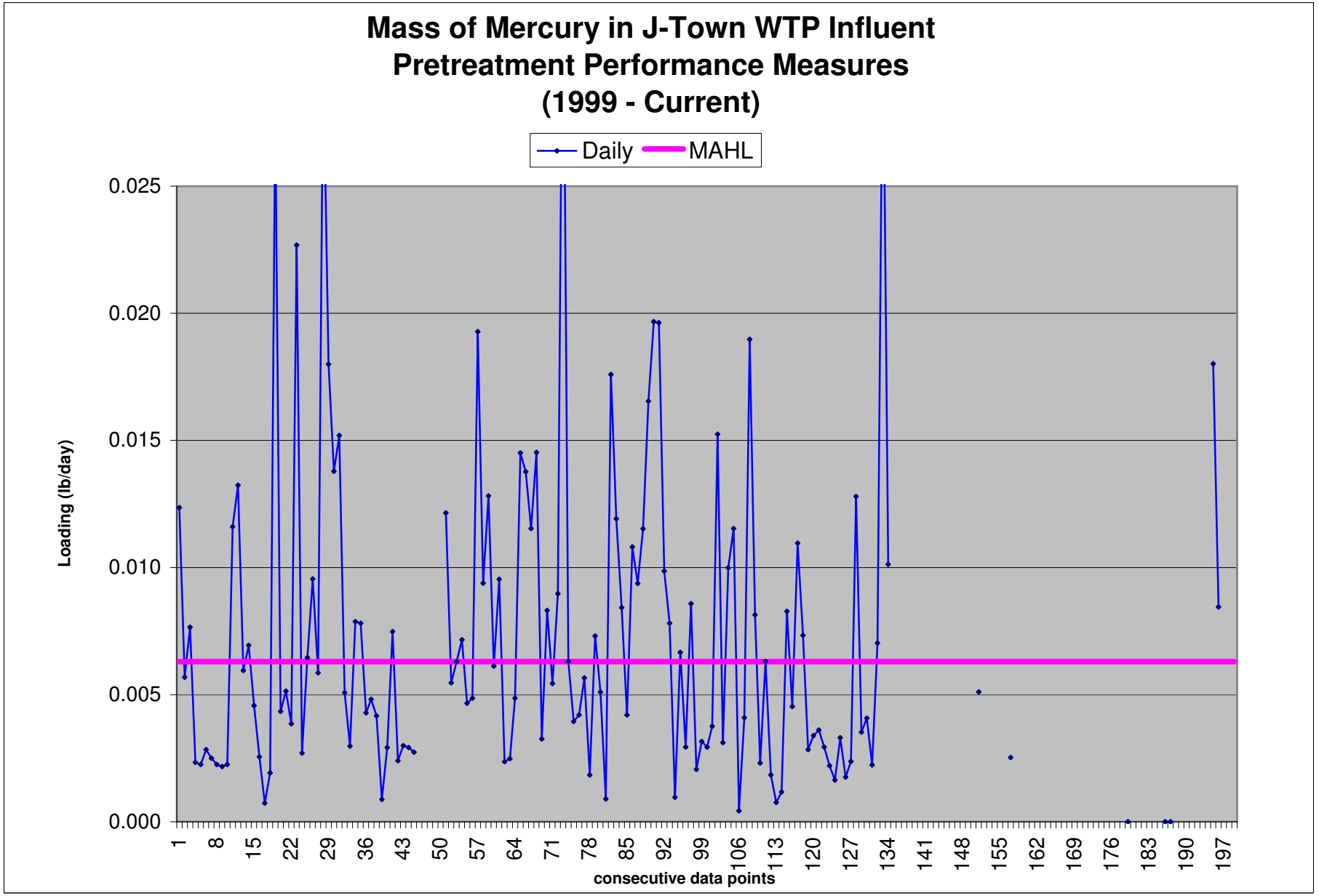

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APPENDIX D
COST ASSESSMENT INFORMATION

2006 Proposed Sampling and Analytical Costs for Annual Pretreatment Program with Project XL Modifications

	Composite Sampling Events	Grab Sampling Events	Flow (mgd)	BOD (mg/L)	TSS (mg/L)	Ammonia N (mg/L)	Ortho Phosphorus (mg/L)	Total Phosphorus (mg/L as P)	Metals by ICP	Lead by GF(mg/L)	Copper by GF(mg/L)	Cadmium by GF (mg/L)	Mercury by 1631 (mg/L)	Selenium by GF(mg/L)	Oil & Grease, Hydrocarbon (mg/L)	Cyanide, Amenable (mg/L)	Organics
WWTP Influent	16	16	3	3	3	3	3	3	16	16	16	16	1	16	0	16	1
WWTP Effluent	16	16	3	3	3	3	3	3	16	16	16	16	1	16	0	16	1
Sum of WWTP	32	32	6	6	6	6	6	6	32	32	32	32	2	32	0	32	2
WWTP Biosolids	0	2	0	0	0	0	0	0	2	2	2	2	1	2	0	0	0
Sum of Biosolids	0	2	0	0	0	0	0	0	2	2	2	2	1	2	0	0	0
MH1	4	4	4	4	4	4	0	4	4	4	4	4	0	4	0	4	0
MH2	4	4	4	4	4	4	0	4	4	4	4	4	0	4	0	4	0
MH3	4	4	4	4	4	4	0	4	4	4	4	4	0	4	0	4	0
MH4	4	4	4	4	4	4	0	4	4	4	4	4	0	4	0	4	0
MH5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MH6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of Manholes	16	16	16	16	16	16	0	16	16	16	16	16	0	16	0	16	0
Jones Plastic & Engineering	1	1	1	0	0	0	0	0	1	1	1	1	0	1	1	1	0
Lantech	4	1	4	0	0	0	0	4	0	0	0	1	0	0	1	0	0
White Castle Distributing	4	1	4	4	4	0	0	0	0	0	4	1	0	0	1	0	0
JCK Enterprises	1	1	1	0	0	0	0	1	0	0	0	1	0	0	1	0	1
Sum of Industries	10	4	10	4	4	0	0	5	1	1	5	4	0	1	4	1	1
Chenoweth Run Upstream	4	4	0	0	0	0	4	0	4	4	4	4	1	4	0	4	0
Chenoweth Run Downstream	4	4	0	0	0	0	4	0	4	4	4	4	1	4	0	4	0
Sum of Streams	8	8	0	0	0	0	8	0	8	8	8	8	2	8	0	8	0
Chenoweth Run Up-Sediment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chenoweth Run Down-Sediment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of Sediments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of WWTP	32	32	6	6	6	6	6	6	32	32	32	32	2	32	0	32	2
Sum of Biosolids	0	2	0	0	0	0	0	0	2	2	2	2	1	2	0	0	0
Sum of Manholes	16	16	16	16	16	16	0	16	16	16	16	16	0	16	0	16	0
Sum of Industries	10	4	10	4	4	0	0	5	1	1	5	4	0	1	4	1	1
Sum of Streams	8	8	0	0	0	0	8	0	8	8	8	8	2	8	0	8	0
Sum of Sediments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**66**	**62**	**32**	**26**	**26**	**22**	**14**	**27**	**59**	**59**	**63**	**62**	**5**	**59**	**4**	**57**	**3**

MSD Lab Costs for Analysis	$ 91	$ 43	$ 48	$ 18	$ 11	$ 11	$ 12	$ 24	$ 108	$ 24	$ 24	$ 12	$ 105	$ 24	$ 18	$ 25	$ 800	
																		TOTAL
Cost for WWTP	$ 2,912	$ 1,376	$ -	$ 108	$ 66	$ 66	$ 72	$ 144	$ 3,456	$ 768	$ 768	$ 384	$ 210	$ 768	$ -	$ 800	$ 1,600	**$ 13,498**
Cost for Biosolids	$ -	$ 86	$ -	$ -	$ -	$ -	$ -	$ -	$ 216	$ 48	$ 48	$ 24	$ 105	$ 48	$ -	$ -	$ -	**$ 575**
Cost for Manhole	$ 1,456	$ 688	$ -	$ 288	$ 176	$ 176	$ -	$ 384	$ 1,728	$ 384	$ 384	$ 192	$ -	$ 384	$ -	$ 400	$ -	**$ 6,640**
Cost for Industry	$ 910	$ 172	$ 480	$ 72	$ 44	$ -	$ -	$ 120	$ 108	$ 24	$ 120	$ 48	$ -	$ 24	$ 72	$ 25	$ 800	**$ 3,019**
Cost for Stream	$ 728	$ 344	$ -	$ -	$ -	$ -	$ 96	$ -	$ 864	$ 192	$ 192	$ 96	$ 210	$ 192	$ -	$ 200	$ -	**$ 3,114**
Cost for Sediment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Total cost	**$ 6,006**	**$ 2,666**	**$ 480**	**$ 468**	**$ 286**	**$ 242**	**$ 168**	**$ 648**	**$ 6,372**	**$ 1,416**	**$ 1,512**	**$ 744**	**$ 525**	**$ 1,416**	**$ 72**	**$ 1,425**	**$ 2,400**	**$ 26,846**

Gray shaded cells have no Pretreatment cost

2007 Sampling and Analytical Costs
for Annual Pretreatment Program Following Project XL

	Composite Sampling Events	Grab Sampling Events	Flow (mgd)	BOD (mg/L)	TSS (mg/L)	Ammonia N (mg/L)	Ortho Phosphorus (mg/L)	Total Phosphorus (mg/L as P)	Metals by ICP	Lead by GF(mg/L)	Copper by GF(mg/L)	Cadmium by GF (mg/L)	Mercury by 1631 (mg/L)	Selenium by GF(mg/L)	Oil & Grease, Hydrocarbon (mg/L)	Cyanide, Amenable (mg/L)	Organics
WWTP Influent	4	4	0	0	0	0	0	0	4	4	0	4	1	4	0	4	1
WWTP Effluent	4	4	0	0	0	0	0	0	4	4	0	4	1	4	0	4	1
Sum of WWTP	8	8	0	0	0	0	0	0	8	8	0	8	2	8	0	8	2
WWTP Biosolids	0	1	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0
Sum of Biosolids	0	1	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0
MH1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MH2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MH3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MH4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MH5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MH6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of Manholes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jones Plastic & Engineering	1	1	1	0	0	0	0	0	1	1	0	1	0	1	1	1	1
Lantech	1	1	1	0	0	0	0	1	1	1	0	1	0	0	1	1	1
White Castle Distributing	2	2	2	2	2	0	0	0	0	0	0	0	0	0	2	0	0
JCK Enterprises	1	1	1	0	0	0	0	0	1	1	0	1	0	0	1	1	0
Beechmont Press	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Bramco/Brandeis	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
HL Lyons	1	1	1	0	0	0	0	0	1	1	0	1	0	0	1	1	1
Papa Johns	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
Russtech	2	2	2	2	2	2	0	0	2	2	0	0	0	0	2	0	0
Southern Standard	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Winston Products	1	1	1	0	0	0	0	0	1	1	0	1	0	0	1	1	1
Sum of Industries	14	14	14	6	6	0	0	1	3	3	0	5	0	1	12	3	4
Chenoweth Run Upstream	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chenoweth Run Downstream	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of Streams	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chenoweth Run Up-Sediment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chenoweth Run Down-Sediment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of Sediments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of WWTP	8	8	0	0	0	0	0	0	8	8	0	8	2	8	0	8	2
Sum of Biosolids	0	1	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0
Sum of Manholes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of Industries	14	14	14	6	6	0	0	1	3	3	0	5	0	1	12	3	4
Sum of Streams	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of Sediments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**22**	**23**	**14**	**6**	**6**	**0**	**0**	**1**	**12**	**12**	**0**	**14**	**3**	**10**	**12**	**11**	**6**

MSD Lab Costs for Analysis	$ 91	$ 43	$ 48	$ 18	$ 11	$ 11	$ 12	$ 24	$ 108	$ 24	$ 24	$ 12	$ 105	$ 24	$ 18	$ 25	$ 800	
																		TOTAL
Cost for WWTP	$ 728	$ 344	$ -	$ -	$ -	$ -	$ -	$ -	$ 864	$ 192	$ -	$ 96	$ 210	$ 192	$ -	$ 200	$ 1,600	**$ 4,426**
Cost for Biosolids	$ -	$ 43	$ -	$ -	$ -	$ -	$ -	$ -	$ 108	$ 24	$ -	$ 12	$ 105	$ 24	$ -	$ -	$ -	**$ 316**
Cost for Manhole	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Cost for Industry	$ 1,274	$ 602	$ 672	$ 108	$ 66	$ -	$ -	$ 24	$ 324	$ 72	$ -	$ 60	$ -	$ 24	$ 216	$ 75	$ 3,200	**$ 6,717**
Cost for Stream	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Cost for Sediment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Total cost	**$ 2,002**	**$ 989**	**$ 672**	**$ 108**	**$ 66**	**$ -**	**$ -**	**$ 24**	**$ 1,296**	**$ 288**	**$ -**	**$ 168**	**$ 315**	**$ 240**	**$ 216**	**$ 275**	**$ 4,800**	**$ 11,459**

Gray shaded cells have no Pretreatment cost

APPENDIX E
2006 AND 2007 STAKEHOLDER MEETING MINUTES

XL Stakeholder Meeting
Jeffersontown Library
4/23/07
11:30 AM

Meeting Minutes

1) Introductions

1. Sharon Worley, MSD, Project XL Project Manager
2. Sue Green, MSD, Storm Water P2 Program
3. Andrea Rogers, Strand, WW Engineer
4. Daymond Talley, MSD, Permitting
5. Mark Sneve, Strand, WW Engineer
6. Kandyce, MSD, Emergency Response/ Pretreatment Program
7. Bill Grimm, Beechmont Press
8. Arnie Richardson, PJ Food, Maintenance
9. Debbie Vessels, PJ Food
10. Brian Ward, P J Food Corp Safety
11. Donna Alorn, P J VP of Operations and Services
12. Marty Clark, PJ grease traps
13. Kathi Showaiter, Russtech, Inc., Operations
14. Teena Halbig, Floyds Fork Environmental Assoc.
15. John Cosby, City of Jeffersontown, Economic Development for Jtown
16. Janet Kean, Association Chenoweth Run Environment (ACRE)

2) Project Overview

a. Summary

Project XL was initiated in June 2002. The designated 5 year period will be completed May 31, 2007.

MSD studied and monitored the system to establish Pollutants of Concern (POCs) and then implemented innovative approaches to reduce those POCs through this project. Industrial users with proven track records and whom were found to not contribute any POCs were offered less regulatory oversight.

MSD originally issued Industrial User (IU) Agreements in lieu of Significant Industrial User (SIU) permits to 12 eligible industries. Four industries were originally issued SIU permits. In 2003, MSD issued SIU permits to Russtech and JCK Enterprises, Inc. After a 2 year demonstration period, Russtech received an Agreement in lieu of a Permit in 2005.

MSD has collected project funding from the Industrial Users with less regulatory oversight and used those dollars to fund Stakeholder-approved environmental projects. A total of $33,120 has been collected.

MSD has held annual Stakeholder meetings and periodic Stakeholder work group meetings during the project.

MSD has prepared annual and semi-annual reports for USEPA and KYDEP since the project began. A final project report will be submitted by June 30, 2007 in lieu of the annual report typically due in April.

Currently- transitioning out of project XL back to Pretreatment Program

3) *Industry Permitting Status refer to handout*
   - Largest Volume is 1 % of total flow at WTP
   - Loading - higher strength discharger
   - Potential to adversely affect WTP- threat determined by XL team
   - June 1 end of Pilot Study - Industry will have to re apply for permitting relationship
   - General
     1. MSD is considering changing flow threshold for general to 20,000 from 5,000 (timeline to be determined)
     2. Permitting Process will take 1 to 1.5 month to be reissued

4) *Accomplishments*
   a. There are many accomplishments of the project. (Accomplishments to be described in final report.) Better data has given everyone involved a better understanding of the system and the issues of concern. Specific for the industries, they will only have to monitor for pollutants of concern. Non significant categorical users status to be determined by DOW.

5) *Past Projects*
   a. Many Environmental Projects were accomplished as a part of this project. (See attached table.) Several including their benefits were discussed.

6) *Last Environmental Project- Storm Drain Labeling*
   a. NEED VOLUNTEERS, groups or individuals
   b. May 12 or 19, 2007
   c. 1,000 storm drain labels
   d. Door Hangers with information about project and other household problems
   e. May 12 lunch provided
   f. Will be put in district 20 Newsletter
   g. Sue asked John for Trash Bags
   h. Will have permission slips/waivers to sign

7) Awards Ceremony
   a. June 4 Lunch
   b. Official invitations on the way

Summary of Environmental Projects conducted under Project XL

PROJECT	Brief Description
Sinkhole Brochure for Chenoweth Run	Brochures were prepared by the Kentucky Geological Survey (KGS). The brochure includes information on How to Protect Karst Aquifers as well as a map of sinkhole locations in the Chenoweth Run area.
Clean Up Chenoweth Run	Project XL partnered with the City of Jeffersontown to hold an annual clean-up of the watershed 3 consecutive years. This project was very successful as a significant amount of trash was collected.
Gaslight Festival Booth	Project XL hosed an informational booth at the Gaslight Festival for the purpose of environmental education to the public. Due to overwhelming success with the booth, the project funded the effort four consecutive years. Mercury thermometers were accepted in exchange for digital replacements.
Backyard Habitat Workshop	The Workshop was held in 2004 and again in 2005 at Memorial Park in Jeffersontown. The workshop educated and inform the public through seminars offered by experts from eight local agencies.
Streamside Corridor Habitat restoration - Clem Farm	This project was funded partially in 2003 to assist in the maintenance of a stream side corridor at a farm along Chenoweth Run.
JTown Drinking Water Investigation	This effort required minimal funding through project XL and was undertaken by MSD to better understand the amount of copper and lead being discharged from various ages of construction in the J-Town sewershed. The project involved educating local high school students through presentations and field trips. The students provided tap water samples used in the project. All efforts were completed in early 2005.
Environmental Education Seminar	Project XL funded an educational seminar held at the University of Louisville to educate the public about the environmental stressors in Chenoweth Run and the impacts of several pollutants of concern.
Innovative Mercury Educational Materials	A CD was prepared through a joint effort between MSD and KPPC. The CD educates dentists about mercury and best management practices to keep it out of our environment. Every dentist in the sewershed was visited to educate them on BMPs for mercury.
Stakeholder Workgroup meetings	Annual stakeholder meetings have been held. Project funding was occasionally used to provide lunch for participants to increase attendance.
Herbicide/pesticide education	An educational brochure was prepared by the project team to educate the public concerning proper lawn care and herbicide/pesticide use. The trifold pamphlet was professionally prepared. The brochure was distributed to the general public at the Gaslight Festival.
Storm Drain Marking	Funding has been allocated to set up a storm drain stenciling initiative with the City of Jeffersontown in 2007. Volunteer groups will be assembled to label drains within the watershed. The effort will serve to educate the public through the stenciling and with door hangers and the volunteers.
Karst/Groundwater Presentation	A seminar was held in 2006 at the University of Louisville to educate the public about 'Groundwater, Karst and Us'.

PRETREATMENT REINVENTION
"EXCELLENCE IN LEADERSHIP" PROJECT
Stakeholder Annual Meeting
April 24, 2006 (6:00 pm)
MINUTES

A. Introduction of Attendees
(see attached list of attendees)

B. Project Status
Project XL was initiated in June 2002. Environmental Projects were conducted in 2003 and 2004. Project XL will complete the designated 5 year period in May 2007.

MSD originally issued Industrial User (IU) Agreements in lieu of Significant Industrial User (SIU) permits to 12 eligible industries. Four industries were originally issued SIU permits. In 2003, MSD issued SIU permits to Russtech and JCK Enterprises, Inc. As new dischargers, these companies were placed on two year demonstration periods as determined by stakeholders. In 2005, Russtech's permit was changed to an IU Agreement as per Stakeholder guidance. Since that time, no new IU Agreements or SIU permits have been issued.

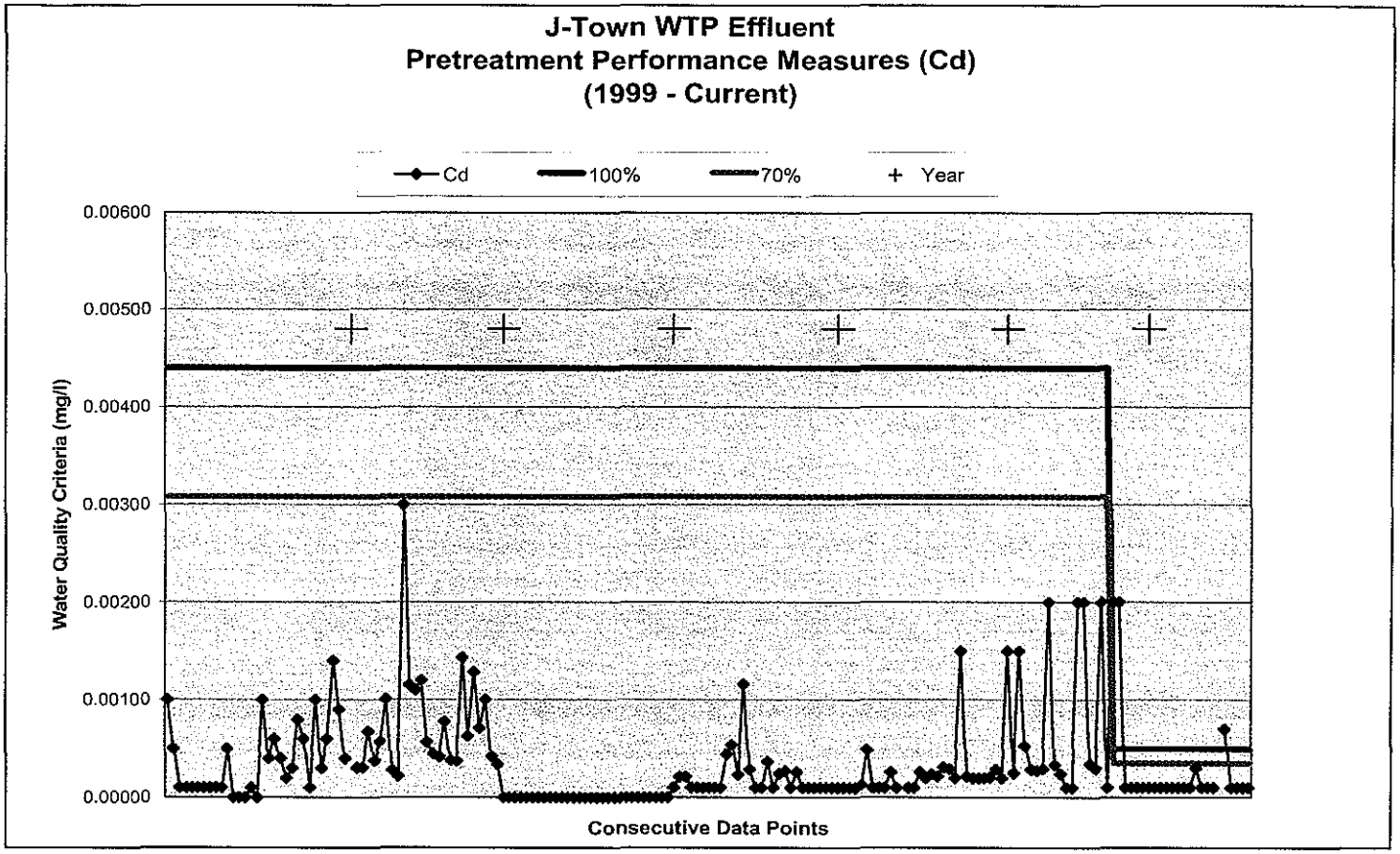
C. Updated list of Pollutants of Concern

Parameter	Frequent Exceedances of the PM	Increasing Trend toward PM	Approaching Stream WQ(1)	Parameter noted on 303d list	NPDES Permit Limit
Arsenic	No	No	No	No	No
Cadmium	**Yes(2)**	No	No	No	No
Chromium	No	No	No	No	No
Copper	**Yes**	No	No	No	No
Cyanide, A	Yes	No	**Yes(2)**	No	No
Iron	NA	NA	No	No	No
Lead	**Yes(2)**	No	**Yes(2)**	No	No
Mercury	No	No	**Yes(2)**	No	No
Nickel	No	No	No	No	No
Selenium	No	No	No	No	No
Silver	No	No	No	No	No
Zinc	No	No	No	No	No
BOD	No	No	NA	No	**Yes**
TSS	No	No	NA	No	**Yes**
Ammonia	No	No	NA	No	**Yes**
Phosphorus	No	No	NA	**Yes**	**Yes**

(1) Approaching Stream WQ is considered true if there have been multiple exceedances in past two years.
(2) Detection limit issue.

The Pollutants of Concern and other monitored pollutants are shown on the following.

The Water Quality Standard for Cadmium has changed dramatically as shown in the attached figure.



D. Updated list of Significant Industrial Users

This table shows Industrial contributions as a Percent of Treatment Plant Influent:

	Flow (mgd)	BOD	TSS	Ammonia N	Total Phosphorus (lbs/d as P)	Copper	Lead	Mercury	Cyanide, Amenable	Cadmium
Jones P&E	0.70%	1.12%	1.83%			0.66%	0.63%			0.61%
Lantech	0.04%		0.03%		7.23%	0.39%	0.07%			1.73%
Russtech Admixtures	0.34%	1.06%	0.16%				0.47%		0.62%	1.60%
WCD	0.82%	23.79%	4.67%			7.37%	0.95%	1.62%		0.00%
JCK Enterprises	0.26%	0.14%	0.12%		5.57%	0.13%	0.13%	0.00%		0.00%

JCK: SIU Permit effective July 14, 2003; the two year demonstration period ended on July 14, 2005. Based on the data, it is recommended that JCK continue to have an SIU permit.

Cadmium: Because of the reduction of the Cadmium Water Quality Standard, a review of historical industrial contributions of Cadmium to the treatment plant was made:

Location	Cadmium Loading (lbs/Day)	Percentage of Influent
J-Town Plant Influent	0.023000	
Donaldson Company, Inc Loc 2	0.000084	0.4%
HL Lyons Co	0.000219	1.0%
Print-Tex USA	0.000142	0.6%
Bramco Brandeis	0.000837	3.6%
Beechmont Press	0.000683	3.0%
Adam Matthews Inc	0.000073	0.3%
Cummins Cumberland Inc	0.000181	0.8%
Derby Cone Company Inc	0.000202	0.9%
Waukesha Cherry-Burrell	0.000562	2.4%
Winston Products Company	0.000478	2.1%
Neff Packaging Solutions	0.000041	0.2%
Southern Standard Carton	0.000137	0.6%
Innovative Electronic Design	0.000016	0.1%
Clarke Detroit Diesel Allison	0.000230	1.0%
Jones Plastic & Engineering	0.002089	9.1%
Ryder Truck Rental Plantside	0.000508	2.2%
Dispensers Optical Service	0.000998	4.3%
Kroger Warehouse Meat Plant	0.000108	0.5%
White Castle Distributing Loc1	0.000773	3.4%

Location (CONTINUED)	Cadmium Loading (lbs/Day)	Percentage of Influent
Georgia Gulf Corp.	0.000193	0.8%
P J Food Service Inc QC Center	0.000541	2.4%
Lantech, Inc.	0.000123	0.5%
RussTech Admixtures, Inc.	0.000202	0.9%
Southeast Christian Church	0.000531	2.3%
JCK Enterprises LLC	0.000210	0.9%
GE Electronic Services	0.000023	0.1%

Proposed Modifications to 2006 Sampling Schedule:

SIU SAMPLING REQUIREMENTS FOR 2006 (SELF MONITORING)

Industry Name	Cadmium	Copper	Cyanide (Amenable)	Lead	Mercury	BOD	TSS	Ammonia	Phosphorous	Flow	pH	Oil & Grease/Hydrocarbon	Selenium	Silver	Zinc
Jones Plastic & Engineering Corp	1/QTR	1/QTR	1/QTR	1/QTR						1/QTR	1/QTR	1/QTR	1/QTR		
JCK Enterprises, Inc.	1/QTR								1/QTR	1/QTR	1/QTR				
Lantech, Inc.	1/QTR								1/MO	1/MO	1/MO				
White Castle Distributing, Inc.	1/QTR	1/MO				1/MO	1/MO			1/MO	1/MO	1/MO			

SIU SAMPLING REQUIREMENTS FOR 2006 (MSD MONITORING)

Industry Name	Cadmium	Copper	Cyanide (Amenable)	Lead	Mercury	BOD	TSS	Ammonia	Phosphorous	Flow	pH	Oil & Grease/Hydrocarbon	Selenium	Silver	Zinc
Jones Plastic & Engineering Corp	1/YR	1/YR	1/YR	1/YR						1/YR	1/YR	1/YR	1/YR		
JCK Enterprises, Inc.	1/YR								1/YR	1/YR	1/YR	1/YR			
Lantech, Inc.	1/YR								1/QTR	1/QTR	1/QTR	1/YR			
White Castle Distributing, Inc.	1/YR	1/QTR				1/QTR	1/QTR			1/QTR	1/QTR	1/YR			

E. Environmental Projects

		Funds Utilized			
PROJECT	**PROJECT MGR**	**2003**	**2004**	**2005**	**2006**
Mapping of Sinkholes in Chenoweth Run Watershed	Kentucky Geologic Survey	$ 2,075	-	-	-
Sinkhole Brochure for Chenoweth Run	Kentucky Geologic Survey		$ 1,052	-	-
Clean Up Chenoweth Run	City of Jeffersontown	$ 2,655	$ 1,110	$ 813	NO
Gaslight Festival Booth	Project XL/KPCC	$ 572	$ 1,150	$ 575	YES – estimate $1,000
Backyard Habitat Workshop	Project XL		$ 494	$ 565	-
Streamside Corridor Habitat restoration - Clem Farm	Future Fund	---------->	---------->	$ 1,452	-
JTown Drinking Water Investigation	Project XL		---------->	$ 254	DONE
Environmental Education Seminar	University of Louisville	-	-	$ 544	DONE
Innovative Mercury Educational Materials	KPPC	-	-	---------->	$ 2,000 (ON-GOING)
Stakeholder Workgroup meetings	Project XL	-	-	$ 163	One – estimate $200
Herbicide/pesticide education	TBD	-	-	-	YES – COSTS TBD
Storm Drain Stenciling	TBD	-	-	-	YES – COSTS TBD
Copper Sulfate (root killer) Education	TBD	-	-	-	??
Karst/Groundwater Project Proposal	TBD	-	-	-	YES – estimate $500
	TOTAL	**$ 5,302**	**$ 3,806**	**$ 4,366**	**TBD**

Ideas for Environmental projects for 2006:

1. Herbicide/pesticide education – "Is Your Lawn to Die For?". Plan to develop a brochure and possibly a workshop for commercial facilities.
2. Storm Drain Stenciling – Jtown has a separate storm sewer system. Could get High School students to GPS located the storm drains then go out and label.
3. Copper Sulfate (root killer) Education – not likely to pursue.
4. Karst/Groundwater Project Proposal : The Environmental Educational Project at U of L proposed by FFEA last year to tell others about Project XL was a success. We had good presentations and attendance. Therefore FFEA proposes another Environmental Education Project at U of L on Karst/Groundwater. In a first project, FFEA was able to

get a KGS Karst/Groundwater brochure for Chenoweth Run. In the proposed project for 2006, we would like for Ky. Geological Survey to come to go over the findings and field survey general overview of the Chenoweth Run Creek area. There would be a powerpoint presentation and additional education about karst/groundwater for half the time. The other half of the time would be for the Ky. Division of Water groundwater presentation. Also a question and answer session. Since we were able to keep expenses very low (mailing and food) and this had prior success, FFEA hopes stakeholders will be favorable for this educational proposal.

F. Other

It was noted that a Watershed Based Plan is being developed by FMSM, the Waterways Alliance and FFEA. This will be a five year project. Volunteers are needed.

List of Attendees

Sharon Worley, MSD
John Cosby, City of Jeffersontown
David Kaelin, FFEA
Kandyce Groves, MSD
Karen Whalen, Division of Waste Management
Kurt Mason, USDA – NRCS
Mark Sneve, Strand Associates
Ken Stammerman, community
Sue Green, MSD
Anne Sundermann, KY Waterways Alliance

APPENDIX F
EXCERPT FROM THE 2006 MS4 ANNUAL REPORT

3.4.3 Project XL Environmental Projects (IDDE, PE, GH)

The City of Jeffersontown and MSD partnered with local industries, environmental organizations, and enthusiastic residents on several projects to improve the water quality of Chenoweth Run. The Environmental Projects designed to directly improve the local watershed and also to educate the public include the Chenoweth Run Cleanup, a watershed education booth at the Gaslight Festival that integrates a mercury thermometer exchange, a public seminar on karst features of the Chenoweth Run watershed, a dental office P2 education campaign, a Backyard Habitat Restoration workshop, a dental office pollution prevention education effort called "Bright Smiles for the Environment" and contributions to riparian restoration and water quality protection education projects.

The Gaslight Festival Booth is an annual group effort staffed by Project XL participating volunteers from the Floyd's Fork Environmental Association, Louisville Green, the Kentucky Pollution Prevention Center, Strand Associates and the MSD Industrial Waste Department (IWD). The booth provides positive interaction with and education of the public with educational games for adults and children including Environmental Trivia quizzes and the Enviroscape as well as the more serious mercury thermometer exchange. Pollutant of Concern "Fact Sheets" were prepared and distributed to raise the awareness of local citizens on the pollutants of concern for Chenoweth Run. Prizes and the costs of the booth were donated by the Jeffersontown industries that are participating sponsors of Project XL.

A mercury thermometer exchange was again held as part of the Gaslight Festival booth. The exchange offered digital thermometers to any resident wishing to replace their old mercury thermometers. This allows mercury thermometers to be removed from households, eliminating the possibility that the mercury will end up down the drain. Twenty mercury thermometers were exchanged for free vouchers from Hume Pharmacy for digital thermometers. In addition to the thermometers, one resident brought in a "convenient wide-mouth jar" that contained 4.5 pounds of liquid mercury. He had found the jar on a shelf in his father's basement. Recovered mercury was taken to the Louisville Metro Haz-Bin household hazardous waste drop-off.

Kids study aquatic creatures at the Project XL workshop.

The second Project XL Backyard Habitat Workshop was held at Jeffersontown's Veterans Park on Saturday October 1, 2005. The event was free and open to the public although it was specifically designed to educate landowners who live along the Chenoweth Run stream. Experts from local agencies made presentations and provided handouts as well as hands-on assistance for practical environmental improvement. Topics discussed included riparian buffer zone creation, tree and shrub maintenance, nuisance animal control, composting, invasive species control, riparian restoration and erosion prevention using vegetative buffers of native vegetation, tree planting, and water quality issues in the Chenoweth Run watershed. Children's activities were added in 2005 that included a nature walk scavenger hunt and observation and identification of aquatic creatures.

A “Karst Features of Chenoweth Run” Seminar was organized by the Floyds Fork Environmental Association as a Project XL activity. The seminar was held at UofL Vogt Building in June 2006 to educate interested stakeholders about environmental issues that affect the water quality of Chenoweth Run. There was standing-room-only at the evening event.

The Project XL “Bright Smiles for the Environment” workgroup was a collaboration of staff from the Kentucky Pollution Prevention Center, KYDEP Division of Waste Management and MSD. The workgroup prepared a CD-ROM presentation, brochures and posters to educate dental professionals on the correct management of mercury and other toxic materials and waste from their practice. The Kentucky Dental Association provided booth space at the Annual Conference in the Commonwealth Convention Center in May 2006. More than 200 dental offices from throughout the Commonwealth picked up the training materials at the booth. The materials were also hand-delivered to all twelve of the dental offices within the Chenoweth Run watershed, and will be sent to the remaining Louisville Metro dental offices this fiscal year. Appendix IV contains the educational materials developed by this project.

Project XL “Bright Smiles for the Environment” booth at the KDA Annual Conference staffed by KDWM, KPPC and MSD.