

REPORT OF PRETREATMENT AUDIT

City of Topeka, Kansas

1115 Poplar Street
Topeka, Kansas 66616

NPDES Permit No.: KS0042722 and KS0042714

BY

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 7

ENFORCEMENT AND COMPLIANCE ASSURANCE DIVISION (ECAD)
WATER BRANCH / DRINKING WATER AND INSPECTIONS SECTION (WB/DWIS)

ON

JULY 7 AND 8, 2021

At the request of the Water Branch (WB), Enforcement and Compliance Assurance Division (ECAD), a pretreatment audit was conducted of the Topeka, Kansas approved Pretreatment Program on July 7, and 8, 2021. To direct the audit, a checklist was used that evaluates all important elements of the Pretreatment Program. A copy of the checklist is attached to this report (Attachment 1). The audit consisted of a discussion and file review with the City's program staff. In addition, an evaluation of the City's Biosolids Management Program (Sludge) was conducted to determine the Pretreatment Program's effectiveness in protecting the sludge from metals contamination. This narrative report presents the findings of the audit. Due to the COVID-19 pandemic, I did not visit any industries as part of this audit. All other documentation not included as an attachment to this report has been submitted directly to the Region 7 Records Center. Steve Caspers with the Kansas Department of Health and Environment (KDHE) was present for this audit.

PARTICIPANTS

City of Topeka- Water Pollution Control Division (WPCD), Utilities Department

- David Murray, Pretreatment Coordinator, WPCD.
- Sylvan Coles, Section Chief, WPCD - Biosolids.

Bureau of Water-Industrial Program Section-KDHE

- Steve Caspers, Pretreatment Specialist

U.S. Environmental Protection Agency (EPA), Region 7

- Naji J. Ahmad, Environmental Engineer, ECAD/WB/DWIS
- David Pratt, Life Scientist, Water Division, Permits and Loans Branch

FACILITY DESCRIPTION

The City of Topeka, with a population of 126,587 people, owns and operates two Wastewater Treatment Plants (WWTPs). The Oakland WWTP is the City's principal plant and receives industrial flow from nine significant industrial users (SIUs). This activated sludge plant is permitted under the Kansas National Pollutant Discharge Elimination System (NPDES) permit number KS0042722 that will expire on December 31, 2021. The North Topeka Municipal WWTP receives flow from five SIUs. This plant is permitted under NPDES permit number KS0042714 that will expire on December 31, 2024.

In addition, the City operates the Sherwood WWTP which is owned by Shawnee County Board of Commissioners.

The City does not collect or impose any permitting fees or any other charges, such as reviewing permit applications, sampling of industries, or inspecting of the industries, to cover some of the cost of implementing the program. However, Mr. Murray mentioned that user surcharges imposed on industries cover the cost of implementing the program.

LEGAL AUTHORITY AND LOCAL LIMITS.

The City's Sewer Use Ordinance (SUO) number 16388 was approved by the EPA and KDHE on July 12, 1991. In 2012, the City modified the SUO and eliminated some enforcement tools. The ordinance was adopted by the City Council but was never sent to KDHE or the EPA for approval. The EPA pointed out this deficiency during the 2015 audit and pointed out that the revision to the SUO stripped the City's ability to issue notices of violation, resample within 30 days, impose injunctive relief in non-emergency situations, issue Administrative Orders, and publish those industries that are in Significant Noncompliance (SNC) in the newspaper.

Therefore, the City revised the unapproved ordinance and submitted a new draft ordinance to the EPA and KDHE for approval. The current revised ordinance Title 13, Chapter 13.5 was approved by the EPA and KDHE on June 29, 2018. The City's current ordinance gives the City the authority to implement and enforce its Pretreatment Program, such as issuing permits for a duration not to exceed five years; requiring the submittal of permit renewal applications prior to the expiration date; the right to inspect, sample, enforce, collect a civil penalty up to \$1,000.00 for each violation; and includes a provision to address confidential business information.

A week prior to this audit, the EPA evaluated the City's SUO against the minimum required amendments to the General Pretreatment Regulations [40 CFR 403.8, 40 CFR 403.13] published in the Federal Register on October 14, 2005, known as the Streamlining Rule. The EPA provided the spreadsheet used to evaluate the SUO to KDHE and the City (Attachment 2). Additionally, Mr. Murray has been working on revising the SUO. Mr. Murray will work with EPA and KDHE to modify its SUO and adopt the necessary required amendments.

As a joint effort by the EPA and KDHE to evaluate local limits of all approved program cities within the state of Kansas, on June 20, 2018, the EPA, KDHE and the City completed the local limits calculation for the Oakland WWTP and for the North Topeka Municipal WWTP

(Attachment 3). However, since the calculated limits were well below the capacity of both plants and since the City's industrial base remained stable since the 1990 approved local limits, the City did not see the need to adopt the newly calculated local limits. Local limits are addressed in Section 13.20.300 (Ord. 20089 § 57, 10-17-17).

Local limits were originally evaluated in 1990 based on Maximum Allowable Headworks Loading (MAHL) and Maximum Allowable Industrial Loading (MAIL) calculations for the Oakland WWTP only. Local limits were approved on November 10, 1990, for only two metals: zinc (2.61mg/l) and lead (1.76 mg/l). In 1991 a local limit for silver (0.57mg/l) was added.

INDUSTRIAL WASTE SURVEY AND SIGNIFICANT INDUSTRIAL USERS

As part of the pretreatment program maintenance, the federal regulations [40 CFR 403.8(f)(2)(i) and 40 CFR 122.44(j)(1)] require the City to identify and locate all industrial users (IUs) that might be subject to the Pretreatment program. The City must also prepare and maintain a list of its SIUs. The list must be updated and submitted to the approval authority annually as part of the annual pretreatment report [see 40 CFR 403.8(f)(2)(i)-(ii) and 40 CFR 403.12(i), respectively].

The last documented formal Industrial Waste Survey (IWS) was conducted in 2014, using a list of businesses gathered from the phone book and water customers that included 29 entities.

During the audit, the EPA offered the City a comprehensive list of entities, on file from Reference Solutions, operating in Topeka.

During my review of the City's Enforcement Response Plan (ERP) I pointed out to Mr. Dave Murray that section II.2 of the ERP reads "*Industrial Questionnaires shall be sent on a periodic basis to industries that were surveyed in the past and determine not to be SIUs. The need for a survey shall be evaluated at least every five years and completed questionnaires shall be reviewed by the Industrial Pretreatment Coordinator.*" There are no records that indicate the City follows this requirement.

The number of industrial users has remained somewhat stable for the past few years. Topeka's current regulated industrial community is dominated by categorical industries that are subject to the Metal Finishing Categorical Standard 40 CFR Part 433. Of those 20 industries, half are subject to the Categorical standard. Six are food processing facilities, two are pet food producers, one is an industrial laundry facility, and one is a railroad maintenance facility.

Industrial flows make up about 18% of the two WWTPs actual dry weather flows. Of the 20 industries, eighteen discharge to the WWTPs. The remaining two (Harris Fabrication and Mainline Printing) are no discharge industries. Discharges from Custom Cabinets and Racks, Ernest Spencer Metals, Frito-Lay Inc., and Mars Chocolate can be directed to either the Oakland or North Topeka plants.

DENTAL AMALGAM RULE

During the discussion of the new Dental Amalgam Rule, Mr. Steve Caspers indicated that he provided all pretreatment program cities in Kansas with a list of dental offices using the Kansas Dental Association and the Kansas Dental Board lists. On January 28, 2018, the City sent out the One-Time Compliance Report questionnaire to be filled out by 108 dental offices/doctors within the City as required by the new Dental Amalgam Rule 40 CFR Part 441. After reviewing the data, Mr. Murray concluded that there are a total of 55 offices. Of those 55 offices, fourteen were exempt from the rule, and 41 complied with the rule. (Attachment 4).

PERMITS

The City issues Industrial Wastewater Discharge permits with 3-year, 4-year, and 5-year durations. All industries have current permits. Overall, permits include the necessary elements needed in a control mechanism. Records indicate that industries submitted permit renewal applications prior to permit expiration as required by industrial permits.

During my review of the Steel Fixture Manufacturing (categorical industry) industrial wastewater discharge permit, I pointed out to Mr. Murray that the permit does not include the maximum daily concentration limit for TTOs (2.13 mg/l), instead it has a quarterly requirement that the permittee must submit a Solvent Management Plan (SMP) certification statement, which certifies that no change has occurred concerning the TTOs discharge status compared to the previous quarter.

I explained, the regulation allows such industries, in lieu of repeatedly sampling for TTOs, to develop and submit a Solvent Management Plan (SMP) for the City's review and approval. Once the SMP is approved and implemented, then the industry is allowed to demonstrate compliance with the TTO limit by filing the certification statement found at 40 CFR 433.12(a). This issue was previously pointed out to the City during the EPA 2018 audit. Even though the industry is allowed to certify compliance, the numeric TTO limit must still be included in the SIU's permit.

WASTE HAULERS

The City accepts domestic and non-domestic wastes at the headworks at the North Topeka Municipal WWTP from various waste haulers. Septage wastes are normally allowed but other special wastes can be, and have been, accepted on a case-by-case basis. In June 2009, the City opened a grease unloading facility at the Oakland WWTP. The unloading facility is equipped with a holding tank and a meter that measures the number of gallons unloaded. The contents of the tank are sent directly to the digester. Overall, the hauled waste program is well managed and monitored (Attachment 5).

The City adopted the Fat, Oil & Grease (FOG) ordinance under Chapter 13.20. The City also developed a FOG standard operating procedure that applies to City employees regarding inspection of grease traps and sewer lines. To ensure the authenticity of the grease loads and the associated manifest, the City staff occasionally verifies the interceptor cleaning activity by calling the site. Currently the City has approximately 330 food establishments.

INSPECTIONS, COMPLIANCE AND SELF-MONITORING, AND REPORTING

Section 13.20.500 of the SUO gives the City the authority to inspect and sample its industries. The City inspected all industries during the past twelve months. Inspections were performed by the Pretreatment Coordinator throughout the year, using a four-page checklist that includes the basic elements included in the Region 7 Industrial User Inspection Checklist. Inspection reports also include comments, observations, and recommendations made by the inspector. Overall inspection reports appeared to be adequately completed and well documented. Inspections consist of completing the checklist, records review, evaluation of the industry's need for a Slug Control Plan (SCP), evaluation of the SCP, if one was required, and a facility walkthrough.

Except for the two no-discharge facilities, the City conducts compliance monitoring for all regulated pollutants at least once per year. The two industries are required to submit semiannual compliance reports and all other industries are required to submit quarterly reports.

Self-monitoring requirements and frequencies are specified in the industrial permits. All Categorical and Non-categorical industries are required to sample quarterly for all regulated pollutants and submit quarterly reports. The City continues to have a strong monitoring program that ensures the collection of representative samples from its regulated community's waste stream.

Because half of the industrial community is subject to a categorical standard that allows the use of an alternative method of compliance in lieu of periodic Total Toxic Organics (TTOs) monitoring, I focused on the City's evaluation of its categorical industries' level of compliance with implementing the solvent management plan (SMP) and the City's procedures for reviewing and approving such plans. Based on my review of the SMPs submitted by the categorical industries, I noticed that Mr. Murray has significantly improved his way of evaluating the submitted plans.

ENFORCEMENT

The City's original ERP was approved by the EPA and KDHE on October 23, 1991. The City revised the ERP and included a pH enforcement policy. The revised ERP was also approved by the EPA and KDHE on June 29, 2018. The current ERP includes an enforceable Significant Noncompliance (SNC) policy for pH. An industry is considered in SNC for pH if the industry violated thirty-three percent (33%) of all samples collected in the six months reporting period.

Mr. Murray appeared familiar with the EPA's SNC definition. Mr. Murray manually calculates and identifies permit parameter exceedances. All enforcement actions taken of each industry are documented in the industry's file which makes it easy to follow the compliance history and status of the industry. In addition, Mr. Murray continues to use the Industrial Overview Spreadsheet (Attachment 6). The spreadsheet is a compliance summary and guide to help him navigate the files.

Records indicate that enforcement actions are taken accordingly. Ernest Spencer Metals was published in the Topeka Capital Journal on 2/5/2021, for being in significant non-compliance for

a zinc violation on July 13, 2020, and for failure to sample in the 3rd quarter. The City also issued Ernest Spencer Metals a Consent Order on August 12, 2020 to start weekly sampling of zinc beginning on September 6, 2020. As of January 1, 2021, Ernest is no longer under the Consent Order; however, the industry received a notice of violation for exceeding the pH permit limit and for late reporting in first quarter 2021.

In 2020, Mr. Murray issued seven notices of violation and one Consent Order. All enforcement actions are included, and well described in Attachment 1 to this report and the City's annual pretreatment reports.

In addition, in 2021 Mr. Murray issued ADM and Mar's notices of violation for oil and grease exceedances.

SLUDGE QUALITY

One function of the pretreatment program is to protect the WWTP's sludge from metals contamination. As part of this audit, the most recent two calendar years annual sludge reports and sludge monitoring data (Attachment 7) were reviewed to determine the pretreatment program's effectiveness. Below are the tables that compare the WWTP's peak observed metals levels for 2019 and 2020 against the statutory ceiling and the WWTPs average level against the exceptional quality (EQ) sludge level specified by the 40 C.F.R. Part 503 Sludge regulations. Because the City sampled its sludge once every two months, the monthly average is the maximum value observed.

In 2019, the Oakland WWTP produced 3,577 dry metric tons (dmt) of Class B sludge, and land applied 3,105 dmt. In 2019, the Oakland WWTP produced 3,823 dmt, and land applied 3,956 dmt.

In 2019, the North Topeka Municipal WWTP produced 1,827 dmt and 1,233 dmt in 2020. All produced sludge was sent off to the landfill. The Sherwood WWTP does not receive industrial discharge.

Table 1, 2019 Oakland WWTP Sludge Quality (mg/kg)

Pollutant	503 Ceiling	503 EQ	Max	Mo. Avg.	Max/Ceiling	Avg./EQ
Arsenic (As)	75	41	9	9	12.00%	21.95%
Cadmium (Cd)	85	39	4.5	4.5	5.29%	11.54%
Copper (Cu)	4,300	1,500	213	213	4.95%	14.20%
Lead (Pb)	840	300	56.3	56.3	6.70%	18.77%
Mercury (Hg)	57	17	1.1	1.1	1.93%	6.47%
Molybdenum (Mo)	75	----	18		24.00%	
Nickel (Ni)	420	420	22.1	22.1	5.26%	5.26%
Selenium (Se)	100	36	13.5	13.5	13.50%	37.50%
Zinc (Zn)	7,500	2,800	509	509	6.79%	18.18%

Table 2, 2020 Oakland WWTP Sludge Quality (mg/kg)

Pollutant	503 Ceiling	503 EQ	Max	Mo. Avg.	Max/Ceiling	Avg./EQ
Arsenic (As)	75	41	6.9	6.9	9.20%	16.83%
Cadmium (Cd)	85	39	35	35	41.18%	89.74%
Copper (Cu)	4,300	1,500	267	267	6.21%	17.80%
Lead (Pb)	840	300	74.1	74.1	8.82%	24.70%
Mercury (Hg)	57	17	0.7	0.7	1.23%	4.12%
Molybdenum (Mo)	75	----	14.9		19.87%	
Nickel (Ni)	420	420	23.4	23.4	5.57%	5.57%
Selenium (Se)	100	36	10.3	10.3	10.30%	28.61%
Zinc (Zn)	7,500	2,800	617	617	8.23%	22.04%

Table 3, 2019 North Topeka Municipal WWTP Sludge Quality (mg/kg)

Pollutant	503 Ceiling	503 EQ	Max	Mo. Avg.	Max/Ceiling	Avg./EQ
Arsenic (As)	75	41	6.9	6.9	9.20%	16.83%
Cadmium (Cd)	85	39	3.2	3.2	3.76%	8.21%
Copper (Cu)	4,300	1,500	281	281	6.53%	18.73%
Lead (Pb)	840	300	50.8	50.8	6.05%	16.93%
Mercury (Hg)	57	17	1.8	1.8	3.16%	10.59%
Molybdenum (Mo)	75	----	18.9		25.20%	
Nickel (Ni)	420	420	18.2	18.2	4.33%	4.33%
Selenium (Se)	100	36	10.5	10.5	10.50%	29.17%
Zinc (Zn)	7,500	2,800	541	541	7.21%	19.32%

Table 4, 2020 North Topeka Municipal WWTP Sludge Quality (mg/kg)

Pollutant	503 Ceiling	503 EQ	Max	Mo. Avg.	Max/Ceiling	Avg./EQ
Arsenic (As)	75	41	5.9	5.9	7.87%	14.39%
Cadmium (Cd)	85	39	2.9	2.9	3.41%	7.44%
Copper (Cu)	4,300	1,500	199	199	4.63%	13.27%
Lead (Pb)	840	300	75.1	75.1	8.94%	25.03%
Mercury (Hg)	57	17	0.38	0.38	0.67%	2.24%
Molybdenum (Mo)	75	----	14.5		19.33%	
Nickel (Ni)	420	420	15	15	3.57%	3.57%
Selenium (Se)	100	36	10.8	10.8	10.80%	30.00%
Zinc (Zn)	7,500	2,800	550	550	7.33%	19.64%

Table 5, 2019 Sherwood WWTP Sludge Quality (mg/kg)

Pollutant	503 Ceiling	503 EQ	Max	Mo. Avg.	Max/Ceiling	Avg./EQ
Arsenic (As)	75	41	6.3	6.3	8.40%	15.37%
Cadmium (Cd)	85	39	3.2	3.2	3.76%	8.21%
Copper (Cu)	4,300	1,500	290	290	6.74%	19.33%
Lead (Pb)	840	300	8.9	8.9	1.06%	2.97%
Mercury (Hg)	57	17	0.7	0.7	1.23%	4.12%
Molybdenum (Mo)	75	----	12.7		16.93%	
Nickel (Ni)	420	420	15.4	15.4	3.67%	3.67%
Selenium (Se)	100	36	14.5	14.5	14.50%	40.28%
Zinc (Zn)	7,500	2,800	556	556	7.41%	19.86%

Table 6, 2020 Sherwood WWTP Sludge Quality (mg/kg)

Pollutant	503 Ceiling	503 EQ	Max	Mo. Avg.	Max/Ceiling	Avg./EQ
Arsenic (As)	75	41	6	6	8.00%	14.63%
Cadmium (Cd)	85	39	3	3	3.53%	7.69%
Copper (Cu)	4,300	1,500	347	347	8.07%	23.13%
Lead (Pb)	840	300	11.7	11.7	1.39%	3.90%
Mercury (Hg)	57	17	0.45	0.45	0.79%	2.65%
Molybdenum (Mo)	75	----	11.9		15.87%	
Nickel (Ni)	420	420	14.1	14.1	3.36%	3.36%
Selenium (Se)	100	36	13.8	13.8	13.80%	38.33%
Zinc (Zn)	7,500	2,800	710	710	9.47%	25.36%

The tables show that WWTPs sludge is below both the ceiling level and EQ level for all metals.

DATA MANAGEMENT

Overall, the industrial files have all the necessary documentation as recommended by the Agency checklist. Each file consisted of permit and permit renewal applications, inspection reports, monitoring reports, and correspondence between the Pretreatment Program and the industry. Records are well kept at the Pretreatment Program office at the Oakland WWTP for more than three years and are available for public review.

CONCLUSION AND RECOMMENDATIONS

Overall, the City's approved Pretreatment Program and Biosolids Management Program are well-established and implemented and program personnel have the technical knowledge necessary for implementing the programs.

Records indicate that the last formal industrial waste survey (IWS) was completed in 2014. Section II.2 of the ERP requires the City to send out Industrial Questionnaires on a periodic basis to industries that were surveyed in the past and determine not to be SIUs. The need for a survey shall be evaluated at least every five years and completed questionnaires shall be reviewed by the Industrial Pretreatment Coordinator. There are no records indicating that the City followed this requirement.

Mr. Murray has been evaluating the Sewer Use Ordinance to incorporate the required amendments to the General Pretreatment Regulations [40 CFR 403.8, 40 CFR 403.13] published in the Federal Register on October 14, 2005, known as the Streamlining Rule. The EPA also provided the City with an evaluation of the changes needed to the SUO for compliance with the Streamlining regulations. The City should be working with the EPA and KDHE to get the changes made and approved.

Industrial Wastewater Discharge permits issued to Categorical industries do not include the maximum daily concentration limit for TTOs (2.13 mg/l), instead they include a quarterly requirement that the permittee must submit a Solvent Management Plan (SMP) certification statement. The numeric limit needs to be included regardless whether or not the industry is allowed to certify compliance. This finding was also pointed out to the City during the EPA audit in 2018.

The Metal Finishing standard, Part 433.12 allows such industries the choice to either sample for TTOs or to develop, implement, and submit a Solvent Management Plan (SMP).

The City has an efficient monitoring and enforcement program. My review of the industrial files indicates consistency of enforcement actions taken and accuracy in making compliance status determinations. Enforcement activities such as emails and written communications are documented in each industry's individual file.

Naji J. Ahmad
Environmental Engineer

Nicole Moran
Section Chief, DWIS

ATTACHMENTS

1. Topeka 2021 Pretreatment Checklist
2. Topeka SUO Review
3. 2018 EPA LL
4. Dental Rule Summary
5. Hauled Waste Data
6. Industrial Overview Spreadsheet
7. 2019 and 2020 Sludge Annual Reports and Monitoring Data