

REPORT OF PRETREATMENT COMPLIANCE INSPECTION (PCI)

City of Iowa City, Iowa
4366 Napoleon Street NE
Iowa City, Iowa, 52240

NPDES Permit No.: IA0070866

BY
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 7
ENFORCEMENT AND COMPLIANCE ASSURANCE DIVISION (ECAD)
WATER BRANCH / DRINKING WATER AND INSPECTIONS SECTION (WB/DWIS)

ON
DECEMBER 3 AND 4, 2024

At the request of the Water Branch (WB), Enforcement and Compliance Assurance Division (ECAD), a pretreatment compliance inspection (PCI) was conducted of the Iowa City, Iowa approved Pretreatment Program on December 3 and 4, 2024. The inspection was authorized by Section 308(a) of the Federal Water Pollution Control Act, as amended. This narrative report presents the findings of the inspection.

Participants

City of Iowa City- Wastewater Division (WD)

- Steven Flake, Pretreatment Coordinator steven-flake@iowa-city.org
- Timothy Wilkey, P.E., WD Superintendent TWilkey@iowa-city.org

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

- Beckett Nichols, Environmental Engineer, ECAD/WB Nichols.Beckett@epa.gov
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Procedures

We entered the facility at approximately 9:10 AM and presented our credentials during the inspection. To direct the inspection, a pretreatment program 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 inspection consisted of an opening conference, a discussion of program operations, a review of program and industry records, a visit with both of the regulated industries, and a closing conference with the Industrial Pretreatment program's 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.

Facility Description

The City of Iowa City owns and operates one Sewage Treatment Plant (STP) under the Wastewater Division in Iowa City. The STP is regulated under the Iowa National Pollutant Discharge Elimination System Permit (NPDES) number IA0070866, that is set to expire on April 30, 2025. The STP is located on the southeast side of the city at 4366 Napoleon Street NE and serves an estimated population of approximately 75,000 people (2020 Census). During an expansion of the STP in 2014 a bio-augmentation reactor system was installed to reduce the amount of tank space necessary and decrease the concentrations of ammonia produced during treatment and the disinfection process was changed from chlorine gas and sulfur dioxide to ultraviolet disinfection. More treatment equipment was added to the plant including two secondary clarifiers, an extension of the aeration basin drains, and three new influent pumps.

According to the NPDES permit, the STP design capacity has an average dry weather flow of 10.5 million gallons per day (MGD), an average wet weather flow of 24.2 MGD, a maximum wet weather flow of 43.3 MGD, a 5- day biochemical oxygen demand (BOD5) design load of 32,658 pounds per day (lbs/day), a Total Kjeldahl Nitrogen (TKN) design load of 6,311 lbs/day, and a Total Suspended Solids (TSS) design load of 34,386 lbs/day.

Treated effluent is discharged into the Iowa River with less than five percent of the effluent coming from the industrial flow. The STP receives discharge from two Significant Industrial Users (SIUs).

Industrial Pretreatment Program

The Iowa City Industrial Pretreatment Program (IPP) was originally approved on February 29, 1984, and was enforced under Iowa City's Sewer Use Ordinance (SUO) that was approved on September 22, 1993. The current ordinance Title 16, Chapter 3, Article E was updated and approved by the Iowa Department of Natural Resources (IDNR) and the EPA in February 2020, along with the Enforcement Response Plan (ERP) on February 7, 2020. The SUO revision to include the General Pretreatment Regulation changes to 40 CFR 403.8, 40 CFR 403.12, and 40 CFR 403.13 that was published in the Federal Register on October 14, 2005, known as the Streamlining Rule, was approved on January 17, 2017.

Title 16, Chapter 3, Article E contains the pretreatment standards which give the city the authority to implement and enforce the IPP. The implementation and enforcement include the issuance of permits, fees, samples, inspections, and penalties for industrial users and waste haulers. Penalties are allowed to obtain remedies for noncompliance with the pretreatment standards and requirements, this includes the ability to seek civil or criminal penalties in the amount of at least one thousand dollars (\$1,000.00) per day per violation as required by 40 CFR 403.8(f)(1)(vi).

The Enforcement Response Plan as required by 40 CFR 403.8(f)(5) requires the IPP to describe the types of escalating enforcement. The ERP does not include or match the SUO language to explain the penalty authority to seek penalties of at least \$1,000 per day for each violation. The ERP should be updated to match the penalty language present in the SUO for industrial users (Recommendation 1).

The last formal Industrial Waste Survey to identify new SIUs was conducted in May 2023 using an internal revenue review and monitoring of the industrial park in Iowa City. The University of Iowa discharges to Iowa City, the IPP should send an Industrial Survey Letter to the University of Iowa. The University conducts pretreatment of wastes and then discharges to the city. Universities have a potential to discharge pollutants that may affect the STP (Recommendation 2).

The Iowa City IPP currently regulates two non-categorical SIUs: Proctor and Gamble and the Iowa City Landfill. Both industries are under current and unexpired 3-year cycle permits and were inspected in the past twelve months.

Local Limits

Local limits are evaluated within a year of the renewal of the STP permit. The local limits were last updated on March 19, 2020, to update the local limits for zinc (44.1 lbs/day) following an Administrative Order for Compliance on Consent (AOC) with the EPA. The AOC required the revision of the local limits following an effluent violation for zinc. The AOC was terminated by the EPA in 2022.

The 2020 IPP study evaluated and identified the following pollutants as pollutants of concern. The following mass limits have been adopted as daily maximums (pounds per day).

Table 1: 2020 Local Limits

Pollutant	Daily Max	Pollutant	Daily Max
TKN	6311	Nickel	13.4
Cadmium	0.331	pH	6-9.5
CBOD	32658	Phenols	96.59
Chromium	7.65	Selenium	1.93
Copper	16.95	Silver	1.32
Cyanide	3.229	Toluene	96.69
Lead	5.62	TSS	34386
Mercury	0.07236	Zinc	44.1
Molybdenum	8.63		

Waste Haulers

Hauled waste is accepted at the STP at a concrete septic dump station north of the plant and prior to the headworks. The septic haulers waste loads vary per month, and average approximately 199 loads/month. Each hauler is required to sample once per month and the IPP analyzes the samples.

Similarly to the industrial users, each of the waste haulers is required to submit an application for a one-year permit that authorizes the waste hauler to utilize the STP. The application and the agreement ensure that the STP is not accepting hazardous waste and regulates the accepted waste. The city code and the limits listed in the hauler permits provide the local limits for waste haulers.

Compliance Monitoring, Industrial Users, and Enforcement

Title 16, Chapter 3, Article E gives the IPP coordinator the authority to carry out inspections, surveillance, and monitoring procedures necessary to determine compliance or noncompliance with pretreatment standards. The two regulated industries in the Iowa City IPP comprise less than 5% of the STP dry weather flow.

The IPP employees conduct the monitoring and sampling for both regulated industries. Proctor and Gamble is sampled by the IPP employees daily. Proctor and Gamble performs self-monitoring and reporting for fats, oil, and grease (FOG). There is a requirement in the federal regulation to include a certification statement that pretreatment standards are being met and the information provided is accurate and complete according to 40 CFR 403.12(b)(6). This statement was not being included on the FOG reports submitted to the IPP, Mr. Flake sent a response following the inspection that the certification would be included on all FOG reports beginning January 2025.

Monitoring of the Iowa City Landfill is conducted by IPP staff. Grab samples are collected and analyzed with varying frequency (twice weekly, twice monthly, and twice yearly dependent on the pollutant) from the Wet Well Lift Station at the South-East corner of the Landfill. Leachate from the Landfill is discharged directly to the STP and no pretreatment is conducted onsite. The

discharge is level of the lift station is controlled and pumped based on the flow to the wet well, therefore the discharge frequency varies

Enforcement responses are described in the ERP and direct IPP staff on how to respond to non-compliance situations. In 2023, Proctor and Gamble received a Notice of Violation for a zinc exceedance and an order to immediately halt the discharge of zinc exceeding the limits in the Indirect Discharge Permit. This is in accordance with the Discharge Limit Violation section of the ERP as an isolated, not significant violation. During the file review, it was noted that there was an exceedance for chromium in the first quarter of 2024, that had not been noted prior to the PCI. Following the PCI, a Notice of Violation was sent to the facility.

Site Inspections

Both regulated industries were visited during the PCI. The oversight inspection was conducted at the Iowa City Landfill. The tour of the facility included the sampling point, the current and previous landfill cells, the composting operation, and the hazardous waste storage. The hazardous waste storage is comprised of two buildings. The dry container storage contains large batteries that have been turned in and household chemicals that are open for the public to take. The container storage has no drains to prevent any potential contamination from a spill onsite. The wet chemical storage is a shed with barrels that are properly labeled and has the spill prevention measures of a pit under the shed to prevent any potential run off in the case of a spill. Mr. Flake conducted an adequate inspection of the industry including the records review and the four-page checklist. Mr. Flake's inspection also included a discussion of the type of spill control plan the Landfill should have.

The site visit to Proctor and Gamble began with a safety video and a brief tour through the facility. The facility has a pretreatment system consisting of chemical flocculation, clarification, and an oil and grease separator to remove zinc and a pH neutralization system to treat acid waste discharges from the wastewater. There are two sampling points in Building 34 and Building 46. The sampling buildings produce two different process streams that are neutralized and permitted to discharge at a combined loading not to exceed the permit requirements. The city has access to the sampling buildings to collect daily samples. The permit includes a provision that in the case that the IPP is unable to collect samples that the industry will collect samples.

Sludge

One function of the Pretreatment Program is to protect the STP's sludge from metals contamination from pass through and/or interference. Iowa City land applies their produced sludge following the appropriate sampling and analysis to ensure pathogen reduction and the correct metal concentrations. During the inspection, the 2023 and the 2024 biosolids records were reviewed. Below is the table that compares the STP's actual metals concentrations for 2023 against the statutory ceiling specified by the 40 CFR Part 503 Sludge regulations. The city samples the sewage sludge six times a year, in accordance with 40 CFR 503.16.

Table 2: 2023 Sludge Metal Concentration Quality (mg/kg)

Pollutant	503 Ceiling	503 EQ	Actual Conc. Avg.
Arsenic	75	41	12
Cadmium	85	39	2.3
Chromium	3000	1200	61.2
Copper	4300	1500	510.2
Lead	840	300	27.1
Mercury	57	17	1.1
Molybdenum	75	---	21.3
Nickel	420	420	36.9
Selenium	100	100	33.8
Zinc	7500	2800	1463.3

Iowa City produces Class A and B sludge. In 2023, 1,564 dry metric tons were produced at the STP. The maps and coordinates of the land application sites are available in the Biosolids Inspection Form attachments (Attachment 4). A contractor from LCL Farms is contracted to haul and apply loads to a predetermined farm and are applied dependent on the weather conditions and field availability. The agronomic loading rates are calculated for each field the STP applies biosolids to. In 2023, land application occurred on five sites for a total of over 504 acres with an agronomic loading rate appropriate for the uptake per year of the corn crops.

Observations and Recommendations

1. During the PCI it was noted that the city code contains language that corresponds to the general pretreatment regulation structure under 40 CFR 403.8 (f)(1)(vi) which states, *“Obtain remedies for noncompliance by any Industrial User with any Pretreatment Standard and Requirement. All POTW's shall be able to seek injunctive relief for noncompliance by Industrial Users with Pretreatment Standards and Requirements. All POTWs shall also have authority to seek or assess civil or criminal penalties in at least the amount of \$1,000 a day for each violation by Industrial Users of Pretreatment Standards and Requirements.”*
Section 16-3E-16 of the Iowa City Code states, “The city may seek injunctive relief for noncompliance by industrial users with pretreatment standards and requirements. Industrial users who violate pretreatment standards and requirements may be assessed civil or criminal penalties in the amount of at least one thousand dollars (\$1,000.00) per day per violation upon conviction of an environmental infraction.” The language from the SUO is not reflected currently in the ERP and should be updated to correspond with the SUO.
2. The University of Iowa contributes to the STP. However, IPP employees have not evaluated the composition of the University’s waste stream that is discharged to the city’s collection system. The IPP should send the Industrial Survey letter to the University of Iowa to receive the information needed to determine if they should be regulated under the

pretreatment program. In addition, the city should continue to search for and regulate categorical and significant industrial users as they are identified.

3. There is a requirement in the federal regulation to include a certification statement that pretreatment standards are being met and the information provided is accurate and complete according to 40 CFR 403.12(b)(6). This statement was not being included on the FOG reports sent by Proctor and Gamble prior to the PCI.
4. During the file review, it was noted that there was an exceedance for chromium at the Iowa City Landfill in the first quarter of 2024 that had not been addressed prior to the inspection. Following the inspection, a Notice of Violation was sent to the facility by the IPP.
5. The permits for the industrial users provided by the IPP were missing language provided in the city permit. The permit for the STP requires a follow up sample to be collected within 30 days following a permit exceedance. This language should be added to the industrial permits requiring follow-up sampling within 30-days following the knowledge of a permit parameter(s) exceedance in the case that the IPP is unable to sample at the facilities.
6. The Slug Control Plans for the regulated industries and the criteria that they are deemed necessary, should be reviewed based on 40 CFR 403.8 (f)(2)(vi).
7. The City should continue cross-training for the Pretreatment Program to maintain the effectiveness of the Program.

Conclusion

Overall, the City's approved Industrial Pretreatment Program and Biosolids Management Program is well established and properly implemented. Mr. Flake understands the program and was responsive to EPA questions and requests and appeared determined to work on the suggestions made during the inspection. All of the recommendations made during the inspection were taken and implemented or given a timeline immediately (Attachment 9)

BECKETT
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Beckett Nichols
Environmental Engineer

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Jodi Bruno
Water Branch Supervisor

Attachments

1. Iowa City 2024 Pretreatment Checklist
2. Enforcement Response Plan
3. Biosolids Inspection Form
4. Biosolids Inspection Form Attachments
5. NOV IC Landfill Signed
6. P&G Signed Permit
7. Landfill Signed Permit
8. Sewage Treatment Plant Permit
9. Facility Recommendation Response