



LOWELL REGIONAL WASTEWATER UTILITY

WASTEWATER COLLECTION AND TREATMENT



MARK A. YOUNG
EXECUTIVE DIRECTOR

SERVING
LOWELL
CHELMSFORD
DRACUT
TEWKSBURY
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February 29, 2024

Justin Pimpare
Region 1 Pretreatment Coordinator
US Environmental Protection Agency
5 Post Office Square
Suite 100
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Mr. Pimpare,

On behalf of the Lowell Regional Wastewater Utility (LRWWU), I am pleased to submit the 2023 Annual Industrial Pretreatment Program (IPP) Report. The report summarizes the activities of the Lowell IPP and the status of all permitted Significant Industrial Users that discharged to the LRWWU from January 1, 2023 to December 31, 2023. Also attached is EPA's revised Compliance Status Work Sheet.

In addition to IPP activities, this report also details sampling results for the wastewater treatment plant's influent and effluent, as required in Attachment B of the Utility's National Pollutant Discharge Elimination System (NPDES) Permit.

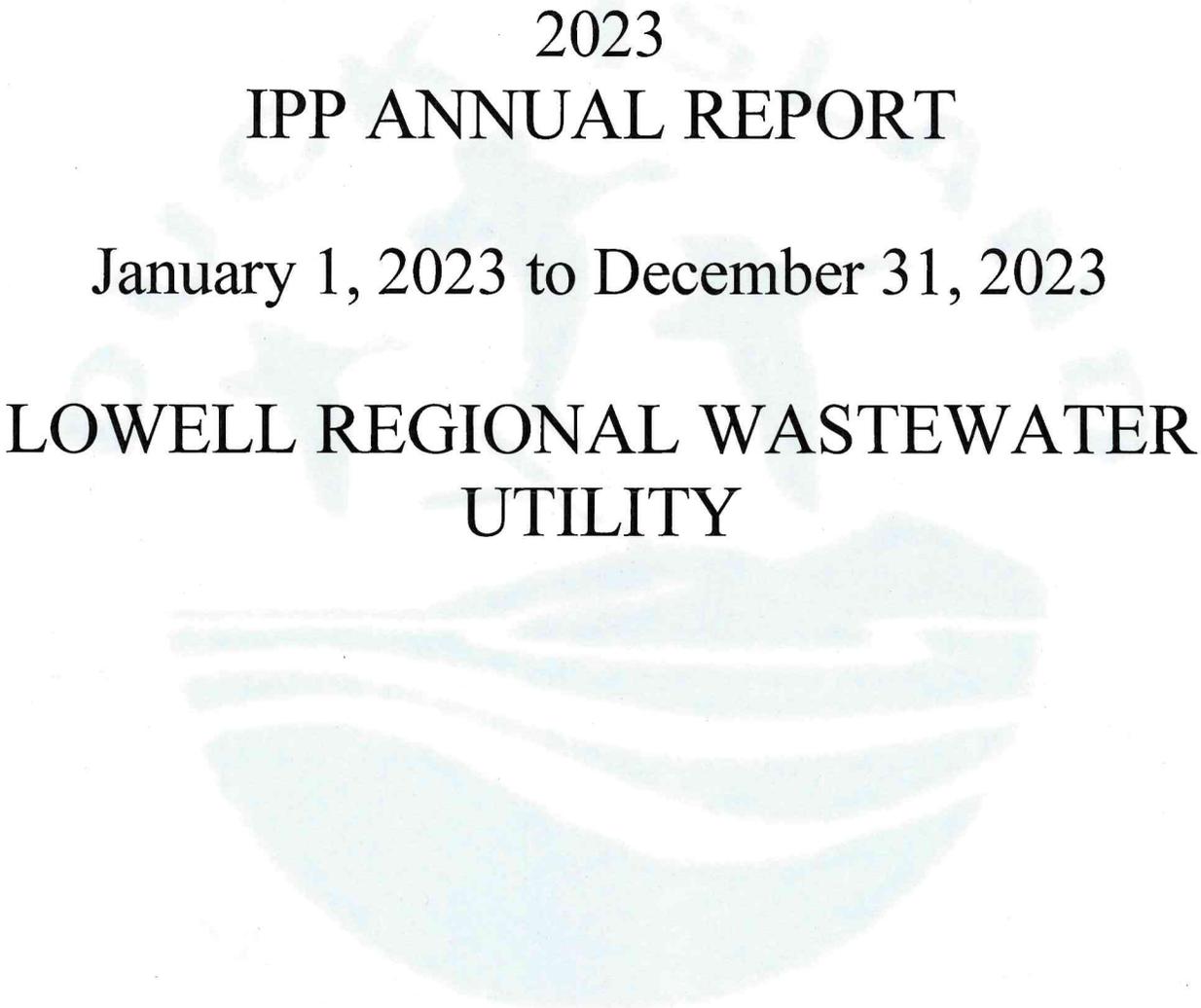
If you have any questions regarding this report, please contact me at (978) 674-1622.

Sincerely,

Amy Daigneault
Pretreatment Coordinator
Lowell Regional Wastewater Utility

Copy / Enclosure:

Rich Chretien, Massachusetts DEP, Wastewater Management
Aaron Fox, Executive Director, LRWWU
Nick Tranghese, Operations Superintendent, LRWWU
Jack Taylor, Maintenance Superintendent, LRWWU
Mike Stuer, Engineering Supervisor, LRWWU
Evan Walsh, Engineering Manager, LRWWU
Mike Butler, Staff Engineer/Hauled Waste Coordinator
Jin-Bok McGowan, Plant Chemist, LRWWU
To File



2023
IPP ANNUAL REPORT

January 1, 2023 to December 31, 2023

LOWELL REGIONAL WASTEWATER
UTILITY

Submitted on February 29, 2024
Prepared by Amy Daigneault

LOWELL REGIONAL WASTEWATER UTILITY 2023 IPP Annual Report

The Lowell Regional Wastewater Utility (LRWWU) implements an Industrial Pretreatment Program (IPP) that was approved by the United States Environmental Protection Agency (USEPA) in 1998.

The Lowell IPP is designed to prevent the introduction of contaminants into the Utility's publicly owned treatment works (POTW) that will result in pass-through and/or interference. The Lowell POTW has a design flow of 32 million gallons per day (MGD) and services the City of Lowell and four surrounding towns – Chelmsford, Dracut, Tewksbury, and Tyngsboro.

INDUSTRIAL USERS

During this reporting period (January 1, 2023 to December 31, 2023), thirty-two (32) active Significant Industrial Users (SIUs) were permitted to discharge industrial wastewater to the Lowell POTW. Refer to **Table 1** for a list of permitted SIUs.

PERMITTING

The Lowell IPP issued five (5) renewal permits and one (1) new permit during the reporting period. Below are the (5) industries that received a five-year permit: Synthetic Labs (Permit No. 029), EVOQUA Water Technologies- Lowell (Permit No. 055), Pace Industries-JEL Finishing (JapEnameLac) (Permit No. 057), T&T Anodizing, Inc. (Permit No. 084), and Four-in-One (Permit No. 098).

The new permit was issued to Thermo Fisher Scientific- Mill Road Chelmsford (Permit No. 050).

SAMPLING & INSPECTIONS

The Utility IPP monitoring is intended to enhance industry self-monitoring and verify compliance with federal and local limits. Utility personnel arrived unannounced at permitted industries to perform IPP sampling. Lowell IPP personnel collected at least one industrial wastewater sample from twenty-nine (29) of the thirty-two (32) permitted SIUs. Sampling events are indicated by sample dates in **Table 1**.

The IPP performed facility inspections on thirty-two (32) of the thirty-two (32) permitted SIUs during this reporting period. These inspections are intended to monitor permitted industries' success in meeting requirements of the Utility's industrial sewer user permits. The Lowell IPP uses the inspections to point out areas that need improvement. The completed list of industrial inspections, with inspection dates, is included in **Table 1**.

HAULED WASTE

The Utility has launched an Industrial Hauled Waste Program under the direction of the IPP. Administrative controls have been put in place to protect the POTW and its personnel. In 2023, the primary hauled waste streams were municipal sludges.

Hauled Waste clients go through a General Permit Application Process, which is very similar to the SIU Application; General Permits are issued for one (1) year. Other waste generators are evaluated through an application process that requires the submittal of a Baseline Monitoring Report and a thorough assessment of the potential impact on the POTW.

LRWWU stopped accepting Leachate from Turnkey Landfill (SIU Permit No. HW001) in November of 2019 due to PFAS concerns. Turnkey Landfill terminated their SIU permit in November of 2021.

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MAIL RE-ALLOCATIONS TO PERMITEES

As allowed under the Industrial Pretreatment Program (IPP), LRWWU has re-allocated the Maximum Allowable Industrial Loading (MAIL) for many of our local limit parameters. These re-allocations are being offered to certain Permittees who otherwise could not meet LRWWU's local limits.

The re-allocations are managed conservatively through administrative controls that track the utilization of MAIL for every constituent of concern and dedicate ample reserves for future growth. MAIL utilization is based on worst-case scenarios, while the reserves provide an untouchable portion of the loadings. The remainder of available MAIL that is earmarked for re-allocation to Permittees is carefully monitored, with every allocation accounted for.

Under no circumstances will LRWWU allow the MAIL to be exceeded for any parameter.

COMPLIANCE

Each permitted industry is required to submit periodic Self-Monitoring Reports (SMRs) that include sampling results. The 2023 sampling data (both Utility and SMR sampling) indicates that six (6) SIU's were cited for late and/or incomplete Self-Monitoring Report submittals and five (5) SIUs were cited for non-compliance with either Categorical or Local Limits. Bolded entries in **Table 1** indicate non-compliance status for the permitted industries.

Of the five (5) SIUs cited for non-compliance with Categorical or Local Limits, two (2) were determined to be in Significant Non-Compliance (SNC):

One (1) was determined to be in SNC for Local Limits and one (1) was determined to be in SNC for Monthly Categorical Limits as defined in 40 CFR 403.8(f) (2) (vii). Significant Non-Compliance status is determined by calculation of the percentage of non-compliant sample results in a six-month time period.

A list of SNC industries is compiled in **Table 2** of this report. This list will be published in the local newspaper (*The Lowell Sun*) in March 2024. Refer to **Appendix A** for SNC calculations.

COMPLIANCE ASSISTANCE

The Lowell IPP is working with these non-compliant industries to achieve full compliance with the Utility's discharge limits, reporting requirements, and any Categorical Standards that may apply. These industries have been advised that it is a requirement of their discharge permits to re-sample in the event of a non-compliant result. All SIUs are encouraged to sample early in the reporting period to avoid late submittals.

Below is a breakdown of the two (2) SIUs in SNC for Local or Categorical Limits:

1. Starflex, Inc. (Permit No. 076) was non-compliant for Lead (Monthly Categorical Limit). The Lowell IPP instructed them to re-sample within 30-days of a non-compliant result to establish compliance.
2. Schleifring North America (Permit No. 080) was non-compliant for Nickel (Local Limit). The Lowell IPP instructed them to re-sample within 30-days of a non-compliant result to establish compliance and asked them to consider adding ion exchange to their treatment process.

IPP STAFFING

The Engineering and Pretreatment Division is divided into two departments. Both departments receive support and oversight from the Engineering Manager, Evan Walsh. The Pretreatment division includes two full-time employees. The two full-time employees are the Pretreatment Coordinator, Amy Daigneault and Staff Engineer, Michael Butler.

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COST RECOVERY

The Lowell IPP is funded through the Lowell Regional Wastewater Utility's operating budget, which is supported by the City of Lowell's sewer user revenues. Revenues are collected from sewer users through a combination of sewer use charges. All sewer property owners in the City of Lowell pay sewer user fees based on water consumption. The four towns serviced by the Utility are assessed fees based on their measured sewer flows into Lowell.

In addition to paying sewer user fees, permitted industries are charged fees for the collection and analysis of wastewater samples. These fees are comparable to those charged by contract analytical labs. A \$50 fee is charged for a permit application and a \$350 fee is charged for maintenance of the industry's five (5) year SIU permit.

Industrial Hauled Waste Clients pay fees based on their discharge volumes and costs associated with treating their waste stream. Permit fees are also assessed for Hauled Waste and Interim Discharge Permit applications and permit maintenance.

EQUIPMENT

The IPP made several purchases in 2023: Portable pH meters and miscellaneous sampling and spill response equipment. The Utility continues to acquire and maintain equipment necessary to adequately fulfill the objectives of the IPP.

SPILL RESPONSE AND SPECIAL DISCHARGES

LRWWU personnel responded to several small hazardous spills during this reporting period.

All of the hazardous spills required some type of clean up (absorbent pads and/or Speedy-Dry). IPP personnel work in conjunction with the Lowell Fire Department Hazmat Team and are trained in spill response and clean up. These spills were small and were contained before causing damage to the collection system or the POTW.

IPP INITIATIVES

The Lowell IPP is committed to continuous improvement of the methods used to identify and monitor sewer discharges that may impact the effective operation of the Lowell POTW. Below is a short summary of several initiatives that are established and will be continually addressed. These initiatives have been implemented successfully within the last year.

1. Flow Composite Sampling: As new permits are issued, or current permits renewed, SIUs are required to install adequate flow metering and sampler interface equipment that facilitates the implementation of flow composite sampling.
2. pH Monitoring: IPP personnel will continue to take pH samples of our permitted industries during each sampling event throughout the year.
3. Contracted Parameter Analyses: The IPP will continue its contracted lab service for several parameters. Under this protocol, an outside lab is contracted to analyze for Metals, TTOs (Methods 624, 625, 608), Carbonaceous Biochemical Oxygen Demand, Total Organic Carbon, Fluoride, Oil & Grease, Total Nitrogen, and Cyanide. These permitted parameters are not analyzed by the Utility's certified laboratory.
4. Monitoring Requirement Assessment: During permit renewals, IPP personnel assess the efficacy of existing monitoring requirements. The basis of this assessment is the performance of baseline monitoring for each permit renewal. A review of historical sampling results and the new baseline data is also utilized to assess the monitoring requirements and adjust them if necessary.
5. Slug Control Plans: As new permits are issued, or current permits are renewed, the IPP requires industries to submit a Slug Control Plan.

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6. Cameras: The IPP will use photographs to describe SIU monitoring points and highlight areas of concern during facility inspections.
7. General Permits: The IPP will manage small scale, non-significant discharges such as school laboratories and small research facilities through General Permits which will require the users to implement best management practices to ensure proper operation and maintenance of treatment systems.
8. Local Limits: LRWWU re-evaluated its local limits in 2016. The local limits were approved by EPA Region 1 in July 2016, with LRWWU presumptively adopting the limits on January 1, 2017; these limits were approved and adopted by the City in July of 2018. The City approved the SUO update that replaces the old Local Limits with the new Local Limits on May 17, 2023.
9. Sewer Use Ordinance: The City of Lowell's Sewer Use Ordinance (SUO) was approved by EPA on April 12, 2023; approval for Local adoption from Lowell's Legal Department is still pending.

NPDES PERMIT SAMPLING RESULTS

In addition to information regarding the monitoring of local industrial wastewater discharges, this report also includes data for the Lowell POTW. Monitoring data are reported that characterize the nature of the plant influent and plant effluent at the POTW. Two tables are presented in this report to summarize National Pollutant Discharge Elimination System (NPDES) sampling results.

Table 3 provides an overview of the NPDES sampling performed at the POTW during the reporting period. Sampling data indicates that the Lowell POTW consistently operated within its NPDES requirements throughout the reporting period.

Table 4 is a summary of data from plant influent and effluent samples collected on December 17-18, 2023 samples were analyzed for thirteen metals, as required in Attachment B of the Utility's NPDES permit. The results are compared with threshold inhibition values and water quality standards obtained from available scientific literature. Results indicate that no significant levels of these pollutants were found in the POTW effluent.

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**TABLE 1
SIGNIFICANT INDUSTRIAL USER COMPLIANCE SUMMARY**

| Permit No. | CAT | SIC | Industry | Daily Flow | Baseline Monitoring | Periodic Self-Monitoring | Categorical Standards | Local Limits | Authority Sampling | Annual Inspection |
|------------|------------|------|---|------------|---------------------|--------------------------|-----------------------|--------------|--------------------|-------------------|
| 005 | - | 3728 | Specialty Materials Business Trust | 10,000 | N/A | C | N/A | PNC | 5/11/23 | 10/27/23 |
| 012 | - | - | Sutton Brook Disposal Area Superfund Site | 30,000 | N/A | C | N/A | C | 5/24/23 | 5/23/23 |
| 019 | 469 | 3674 | M/A Com Technology Solutions (Chelmsford St.) | 190,000 | N/A | SNC | C | C | 11/15/23 | 11/14/23 |
| 022 | 433 469 | | Thermo Fisher Scientific (Tewksbury) | 500 | N/A | SNC | C | NC | 12/20/23 | 9/21/23 |
| 025 | - | 7542 | Fleetwash, Inc. | 2,500 | N/A | C | N/A | C | 9/15/23 | 9/15/23 |
| 029 | - | 2341 | Synthetic Labs | 2,000 | Submitted | C | N/A | C | 5/25/23 | 9/22/23 |
| 035 | 433 | 3471 | Cirtec Medical (Formerly Metrigraphics) | 3,000 | N/A | SNC | C | C | 11/28/23 | 7/21/23 |
| 040 | - | - | Texas Instruments | 8,000 | N/A | C | N/A | C | 5/12/23 | 9/22/23 |
| 044 | - | 8062 | Lowell General Hospital | 125,000 | N/A | C | N/A | C | 5/18/23 5/31/23 | 7/20/23 |
| 047 | - | 8062 | Lowell General Hospital (Saints Campus) | 100,000 | N/A | C | N/A | C | 4/27/23 | 7/20/23 |
| 050 | 414 | | Thermo Fisher Scientific (Mill Rd-Chelmsford) | 20,000 | Submitted | C | C | C | 12/12/23 | 12/11/23 |
| 052 | 463 | 3061 | 3-M | 45,000 | N/A | C | C | C | 5/3/23 | 10/10/23 |
| 055 | - | 5074 | EVOQUA Lowell | 20,000 | Submitted | C | N/A | C | IF | 6/30/23 |
| 057 | 433 | 3479 | Pace Industries-JEL Finishing (JapEnamelac) | 15,000 | Submitted | C | NC | C | 6/1/23 | 12/12/23 |
| 061 | 433 | 3471 | Coating Systems | 65,000 | N/A | C | C | C | 4/26/23 | 10/2/23 |
| 064 | 423 | 4911 | Tanner Street Generation | 250,000 | N/A | C | C | C | ZD | 12/7/23 |

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| Permit No. | CAT | SIC | Industry | Daily Flow | Baseline Monitoring | Periodic Self-Monitoring | Categorical Standards | Local Limits | Authorize Sampling | Annual Inspection |
|------------|-----|------|---------------------------------------|------------|---------------------|--------------------------|-----------------------|--------------|--------------------|-------------------|
| 066 | 463 | - | Arlin Manufacturing Company | 5,000 | N/A | SNC | C | C | 10/12/23 | 10/11/23 |
| 068 | 469 | 8221 | University of Massachusetts-Lowell | 20,200 | N/A | C | C | C | 9/12/23 | 7/13/23 |
| 070 | - | 9511 | Silresim Superfund Site | 57,600 | N/A | C | N/A | C | 9/7/23 | 6/8/23 |
| 076 | 433 | 3679 | Starflex | 5,000 | N/A | C | SNC | C | 10/6/23 | 12/6/23 |
| 079 | 433 | 3999 | Photo Etch | 1,000 | N/A | C | C | C | CL | 7/7/23 |
| 080 | 433 | | Schleifring North America | 1,000 | N/A | SNC | SNC | SNC | 5/3/23 | 11/16/23 |
| 083 | - | 7218 | Cintas | 110,000 | N/A | C | N/A | C | 5/18/23 | 11/17/23 |
| 084 | 433 | 3471 | T&T Anodizing, Inc. | 10,000 | Submitted | C | C | C | 10/24/23 | 7/12/23 |
| 085 | - | 9511 | Charles George Landfill | 86,400 | Submitted | C | N/A | C | 4/28/23 | 12/5/23 |
| 087 | | | EVOQUA Water Technologies | 50,000 | N/A | SNC | N/A | C | 11/21/23 | 7/25/23 |
| 088 | - | 3523 | Thermo Fisher Scientific (Chelmsford) | 10,000 | Submitted | C | N/A | C | 4/21/23 | 8/3/23 |
| 093 | 469 | 3674 | Microsemi Corp-RFIS Diode Solutions | 20,000 | N/A | C | C | C | 4/11/23 | 8/8/23 |
| 096 | - | 8221 | Middlesex Community College | 2,000 | N/A | C | N/A | C | 9/26/23 | 9/25/23 |
| 097 | - | 8734 | EPA LAB New England | 2,000 | N/A | C | N/A | C | 12/7/23 | 7/26/23 |
| 098 | - | 2033 | Four-in-One | 5,000 | Submitted | C | N/A | C | 10/20/23 | 10/19/23 |
| 099 | - | 3842 | Marine Polymer Technologies | 20,000 | N/A | C | N/A | C | 5/16/23 | 9/29/23 |
| HW001 | - | 4953 | Waste Management of NH | 100,000 | CP | CP | CP | CP | CP | CP |

ZD = Zero Discharge
 IF = Insignificant Flow
 IP = Inactive Permittee
 N/A = Not Applicable
 C = Compliant
 NC = Non-Compliant
 CP = Closed Permit
 CL = Closed
 PNC = Previous Non-Compliance (Already Reported in 2022 Annual Report)
 SNC = Significant Non-Compliant
 NP = New Permit
 DNS = Did Not Sample

**LOWELL REGIONAL WASTEWATER UTILITY
2022 IPP Annual Report**

**TABLE 2
2023 SNC List**

The following is the list of permitted industries that were determined to be in **Significant Non-Compliance (SNC)**, as defined in 40 CFR 403.8(f) (2) (vii), during the reporting period of October 1, 2022 through December 31, 2023.

| Industry | Parameter | Standards |
|---|------------------|---|
| M/A-Com Technology Solutions | N/A | Reporting Requirements |
| Thermo Fisher Scientific-Permit No. 022 | N/A | Reporting Requirements |
| Cirtec Medical | N/A | Reporting Requirements |
| Arlin Manufacturing | N/A | Reporting Requirements |
| Starflex, Inc. | Lead | Categorical Standards |
| Schleifring North America | Nickel | Local Limits and Reporting Requirements |
| EVOQUA Water Technologies- Tewksbury | N/A | Reporting Requirements |

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TABLE 3
2023 NPDES PERMIT REQUIREMENTS

| Effluent Parameter | Permit Limit | Jan Eff | Feb Eff | Mar Eff | Apr Eff | May Eff | Jun Eff | Jul Eff | Aug Eff | Sep Eff | Oct Eff | Nov Eff | Dec Eff |
|---|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | | | | | | | | | | | |
| Flow (MGD) | Mo. Avg. | 34.44 | 26.33 | 36.43 | 29.13 | 30.70 | 26.96 | 41.30 | 38.83 | 37.92 | 29.67 | 24.98 | 38.91 |
| | Daily Max. | 74.92 | 33.52 | 81.74 | 66.80 | 57.31 | 45.76 | 65.07 | 63.76 | 68.27 | 42.08 | 54.11 | 81.64 |
| | Mo. Avg. | 7.2 | 5.2 | 8.3 | 5.5 | 4.6 | 4.9 | 5.0 | 4.8 | 4.6 | 3.9 | 4.3 | 9.4 |
| CBOD 5-Day (mg/L) | Daily Max. | 15.0 | 7.0 | 27.0 | 25.2 | 15.5 | 18.6 | 19.8 | 11.2 | 15.4 | 7.8 | 20.3 | 28.0 |
| | Report mg/L | 7935 | 1621 | 18406 | 14039 | 6271 | 6199 | 8922 | 4768 | 7327 | 2023 | 3412 | 12458 |
| | Report Lbs/day | 30 | 9.7 | 5.6 | 10.9 | 6.1 | 6.9 | 10.9 | 7.7 | 9.1 | 5.5 | 6.8 | 10.5 |
| TSS (mg/L) | Mo. Avg. | 22.0 | 7.7 | 43.0 | 44.5 | 21.4 | 27.4 | 65.6 | 18.6 | 38.4 | 10.0 | 41.0 | 34.5 |
| | Daily Max. | 11247 | 2152 | 29314 | 24791 | 9129 | 9769 | 29560 | 7918 | 18271 | 2983 | 6892 | 13345 |
| | Report Lbs/day | 126 | 33 | 11 | 12 | 13 | 11 | 8 | 13 | 11 | 9 | 11 | 15 |
| E-coli (Colonies/100 mL) | Mo. Avg. | 244 | 70 | 108 | 23 | 23 | 19 | 37 | 43 | 41 | 40 | 28 | 31 |
| | Daily Max. | 6.6 | 6.7 | 6.7 | 6.5 | 6.3 | 6.5 | 6.4 | 6.6 | 6.6 | 6.7 | 6.8 | 6.5 |
| | Min. | 7.1 | 7.1 | 7.1 | 7.0 | 7.1 | 7.2 | 7.1 | 7.0 | 6.9 | 7.1 | 7.2 | 7.1 |
| pH (standard units) | Max. | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.04 | 0.03 | 0.03 | 0.03 | 0.04 |
| | Mo. Avg. | 0.11 | 0.08 | 0.14 | 0.04 | 0.06 | 0.16 | 0.09 | 0.17 | 0.14 | 0.30 | 0.28 | 0.28 |
| | Max. | >100% | | | >100% | | | >100% | | | >100% | | |
| LC50 48 HR ACUTE Ceriodaphnia TAA3B 100 Effluent Gross Value | Test Quarterly | | | | | | | | | | | | |
| | 100% Daily Minimum | >100% | | | | | | | | | | | |
| | 50% Daily Minimum | >100% | | | | | | | | | | | |
| LC50 7 Day HR CHRONIC Ceriodaphnia TBD3B 100 Effluent Gross Value | Test Quarterly | | | | | | | | | | | | |
| | 100% Daily Minimum | >100% | | | | | | | | | | | |
| | 50% Daily Minimum | >100% | | | | | | | | | | | |
| Sludge Parameter | Units | Jan Sltdg | Feb Sltdg | Mar Sltdg | Apr Sltdg | May Sltdg | Jun Sltdg | Jul Sltdg | Aug Sltdg | Sep Sltdg | Oct Sltdg | Nov Sltdg | Dec Sltdg |
| | Arsenic (mg/L)* / (mg/kg)** | ----- | ----- | ----- | ----- | <0.5* | ----- | <0.5* | ----- | <0.5* | ----- | <0.5* | ----- |
| | Barium (mg/L)* / (mg/kg)** | ----- | ----- | ----- | ----- | <0.5* | ----- | <0.5* | ----- | <0.5* | ----- | <0.5* | ----- |
| | Cadmium (mg/L)* / (mg/kg)** | ----- | ----- | ----- | ----- | <0.1* | ----- | <0.1* | ----- | <0.1* | ----- | <0.1* | ----- |
| | Chromium (mg/L)* / (mg/kg)** | ----- | ----- | ----- | ----- | <0.1* | ----- | <0.1* | ----- | <0.1* | ----- | <0.1* | ----- |
| | Lead (mg/L)* / (mg/kg)** | ----- | ----- | ----- | ----- | <0.5* | ----- | <0.5* | ----- | <0.5* | ----- | <0.5* | ----- |
| | Mercury (mg/L)* / (mg/kg)** | ----- | ----- | ----- | ----- | <0.01* | ----- | <0.01* | ----- | <0.01* | ----- | <0.01* | ----- |
| | Selenium (mg/L)* / (mg/kg)** | ----- | ----- | ----- | ----- | <0.1* | ----- | <0.1* | ----- | <0.1* | ----- | <0.1* | ----- |
| | Silver (mg/L)* / (mg/kg)** | ----- | ----- | ----- | ----- | <0.1* | ----- | <0.1* | ----- | <0.1* | ----- | <0.1* | ----- |

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**TABLE 4
ANNUAL PLANT SAMPLING RESULTS
December 17-18, 2023**

| PARAMETER | CONCENTRATION (mg/L) ¹ | | | | | | |
|------------------|------------------------------------|---|--|------------------------------------|---|-------------------------------------|--|
| | Plant Influent (Grab) ² | Plant Influent (Composite) ³ | Activated Sludge Threshold Inhibition ⁴ | Plant Effluent (Grab) ⁵ | Plant Effluent (Composite) ⁶ | Water Quality Standard ⁷ | |
| Antimony (mg/L) | <0.003 | <0.003 | - | <0.003 | <0.003 | NA | |
| Arsenic (mg/L) | <0.005 | <0.005 | 0.1 | <0.005 | <0.005 | 0.15 | |
| Beryllium (mg/L) | <0.001 | <0.001 | - | <0.001 | <0.001 | NA | |
| Cadmium (mg/L) | <0.002 | <0.002 | 1.0 | <0.002 | <0.002 | 0.00025 | |
| Chromium (mg/L) | 0.00345 | 0.00488 | 1.0 | <0.002 | <0.002 | 0.011 | |
| Copper (mg/L) | 0.0124 | 0.0260 | 1.0 | 0.0085 | 0.00985 | 0.009 | |
| Cyanide (mg/L) | <0.01 | - | 0.1 | <0.01 | - | 0.0052 | |
| Lead (mg/L) | 0.0271 | 0.0384 | 0.1 | 0.00652 | 0.00757 | 0.0025 | |
| Mercury (mg/L) | <0.0002 | <0.0002 | 0.1 | <0.0002 | <0.0002 | 0.00077 | |
| Nickel (mg/L) | <0.005 | 0.00509 | 1.0 | <0.005 | <0.005 | 0.052 | |
| Phenols (mg/L) | 0.111 | 0.0622 | - | 0.0780 | 0.0530 | NA | |
| Selenium (mg/L) | <0.005 | <0.005 | - | <0.005 | <0.005 | 0.005 | |
| Silver (mg/L) | <0.002 | <0.002 | 0.25 | <0.002 | <0.002 | 0.032 | |
| Titanium (mg/L) | 0.0339 | 0.0548 | - | 0.0116 | 0.0143 | NA | |
| Zinc (mg/L) | 0.0666 | 0.135 | 0.3 | 0.0518 | 0.0510 | 0.12 | |

Notes:

- 1) All samples collected by Lowell Regional Wastewater Utility personnel and analyzed by MICROBAC (Massachusetts Certification No. M-CT008). Analytical results below Method Detection Limits (MDL's) indicated by "<" symbol, values below MDL are not quantifiable.
- 2) Analytical results obtained from grab samples collected at plant influent wet well at 10:44 AM on December 18, 2023.
- 3) Analytical results obtained for composite sample (48 aliquots - every 1/2 hour) collected from the plant influent wet well on December 17-18, 2023 (7:00 AM – 7:00 AM).
- 4) Activated Sludge Threshold Inhibition values are obtained from *Appendix H* of the Lowell Regional Wastewater Pretreatment Program document.
- 5) Analytical results obtained for a grab sample collected from the plant outfall at 10:52 AM on December 18, 2023.
- 6) Analytical results obtained for composite samples (48 aliquots - one every 1/2 hour) collected from the plant outfall on December 17-18, 2023 (7:00 AM – 7:00 AM).
- 7) Water Quality Standard values obtained from the EPA's *National Recommended Water Quality Criteria: 2002*. This document is published on the Internet.

Appendix A

SNC Worksheets

Lowell Regional Wastewater Facility
 Industrial Pretreatment Program
 Compliance Results Report - by Parameter

Report Period: 10/01/2022 to 12/31/2023

Permit: **076**
 Permittee: **Starflex**
 Location: 52 Meadowcroft Street, Lowell, MA 01852

Lead, total

| Sample ID | Auth? Mon Point | Collection Method | Collection Date | Units | Result | Rslt Flgs | Reporting Limit | Adjusted Result | Comp Flag | Limit |
|------------------|-----------------|-------------------|-----------------|-------|---------|-----------|-----------------|-----------------|-----------|-------|
| October 18 2022 | 001 | COMP | 10-18-2022 | mg/L | 0.013 | | | 0.013 | | 0.685 |
| December 2022 | 001 | COMP | 12-14-2022 | mg/L | <0.01 | | 0.01 | 0 | | 0.685 |
| March 2023 | 001 | COMP | 03-15-2023 | mg/L | <0.01 | | 0.01 | 0 | | 0.685 |
| June 2023 | 001 | COMP | 06-13-2023 | mg/L | 0.0036 | | | 0.0036 | | 0.685 |
| September 2023 | 001 | COMP | 09-18-2023 | mg/L | <0.01 | | 0.01 | 0 | | 0.685 |
| October 5, 2023 | 001 | COMP | 10-06-2023 | mg/L | 0.00821 | | | 0.00821 | | 0.685 |
| December 2023 | 001 | COMP | 12-11-2023 | mg/L | 0.66 | | | 0.66 | | 0.685 |
| Total Results: 7 | Avg: .09783 | Min: .00000 | Max: .66000 | | | | | | | |
| Oct-22-Avg | 001 | | 10-31-2022 | mg/L | .01300 | | | .01300 | | 0.43 |
| Dec-22-Avg | 001 | | 12-31-2022 | mg/L | <.00000 | | | .00000 | | 0.43 |
| Mar-23-Avg | 001 | | 03-31-2023 | mg/L | <.00000 | | | .00000 | | 0.43 |
| Jun-23-Avg | 001 | | 06-30-2023 | mg/L | .00360 | | | .00360 | | 0.43 |
| Sep-23-Avg | 001 | | 09-30-2023 | mg/L | <.00000 | | | .00000 | | 0.43 |
| Oct-23-Avg | 001 | | 10-31-2023 | mg/L | .00821 | | | .00821 | | 0.43 |
| Dec-23-Avg | 001 | | 12-31-2023 | mg/L | .66000 | | | .66000 | MT | 0.43 |
| Total Results: 7 | Avg: .09783 | Min: .00000 | Max: .66000 | | | | | | | |

Report Criteria:

Parameter(s):
 Lead, total

| Permittee: Starflex, Inc. (No. 076) | | | | | | | | | |
|--|---------------|--------------------|---|------------------|---|-----------------|----------------------|-----------|--------------------|
| Monitoring Point: 001 | | | | | | | | | |
| Parameter: Lead | | | | | | | | | |
| *Bolded Values Indicate Significant Non- Compliance | | | | | | | | | |
| Period | Daily Samples | Exceed Daily Limit | % | Exceed Daily TRC | % | Monthly Average | Exceed Monthly Limit | % | Exceed Monthly TRC |
| 10/1/22 – 3/31/23 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 1/1/23 - 6/30/23 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 4/1/23 - 9/30/23 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 7/1/23 – 1/31/23 | 3 | 0 | 0 | 0 | 0 | 3 | 1 | 33 | 1 |

Lowell Regional Wastewater Facility
 Industrial Pretreatment Program
 Compliance Results Report - by Parameter

Report Period: 10/01/2022 to 12/31/2023

Permit: **080**
 Permittee: **Schleifring**
 Location: 222 Mill Road, Chelmsford, Ma 01824

Nickel, total

| Sample ID | Auth? Mon Point | Collection Method | Collection Date | Units | Result | Rslt Flgs | Reporting Limit | Adjusted Result | Comp Flag | Limit |
|-------------------|-----------------|-------------------|-----------------|--------------|---------|-----------|-----------------|-----------------|-----------|-------|
| December 2022 | 001 | COMP | 12-14-2022 | mg/L | 4.76 | | | 4.76 | DT | 1.81 |
| December 14, 2022 | 001 | COMP | 12-14-2022 | mg/L | 5.31 | | | 5.31 | DT | 1.81 |
| January 2023 | 001 | COMP | 01-25-2023 | mg/L | 0.24 | | | 0.24 | | 1.81 |
| February 2023 | 001 | COMP | 02-08-2023 | mg/L | 0.315 | | | 0.315 | | 1.81 |
| May 3, 2023 | 001 | COMP | 05-03-2023 | mg/L | 0.134 | | | 0.134 | | 1.81 |
| May 2023 | 001 | COMP | 05-03-2023 | mg/L | 0.141 | | | 0.141 | | 1.81 |
| August 2023 | 001 | COMP | 08-03-2023 | mg/L | 0.62 | | | 0.62 | | 1.81 |
| November 2023 | 001 | COMP | 11-29-2023 | mg/L | 0.032 | | | 0.032 | | 1.81 |
| Total Results: 8 | | Avg: 1.44400 | Min: .03200 | Max: 5.31000 | | | | | | |
| Dec-22-Avg | 001 | | 12-31-2022 | mg/L | 5.03500 | | | 5.03500 | MT | 1.81 |
| Jan-23-Avg | 001 | | 01-31-2023 | mg/L | .24000 | | | .24000 | | 1.81 |
| Feb-23-Avg | 001 | | 02-28-2023 | mg/L | .31500 | | | .31500 | | 1.81 |
| May-23-Avg | 001 | | 05-31-2023 | mg/L | .13750 | | | .13750 | | 1.81 |
| Aug-23-Avg | 001 | | 08-31-2023 | mg/L | .62000 | | | .62000 | | 1.81 |
| Nov-23-Avg | 001 | | 11-30-2023 | mg/L | .03200 | | | .03200 | | 1.81 |
| Total Results: 6 | | Avg: 1.06325 | Min: .03200 | Max: 5.03500 | | | | | | |

Report Criteria:

Parameter(s):
 Nickel, total

| Permittee: Schleifring (No. 008) | | | | | | | | | |
|--|---------------|--------------------|----|------------------|-----------|-----------------|----------------------|-----------|--------------------|
| Monitoring Point: 001 | | | | | | | | | |
| Parameter: Nickel | | | | | | | | | |
| *Bolded Values Indicate Significant Non- Compliance | | | | | | | | | |
| Period | Daily Samples | Exceed Daily Limit | % | Exceed Daily TRC | % | Monthly Average | Exceed Monthly Limit | % | Exceed Monthly TRC |
| 10/1/22 – 3/31/23 | 4 | 2 | 50 | 2 | 50 | 3 | 1 | 33 | 1 |
| 1/1/23 - 6/30/23 | 4 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 4/1/23 - 9/30/23 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 7/1/23 – 1/31/23 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |

EPA Region 1 Annual Pretreatment Report Summary Sheet December 2023

| | |
|---|------------------------------------|
| POTW Name: | Lowell Regional Wastewater Utility |
| NPDES Permit #: | MA0100633 |
| Pretreatment Report Period Start Date: | January 1, 2023 |
| Pretreatment Report Period End Date: | December 31, 2023 |
| # of Significant Industrial Users (SIUs): | 32 |
| # of SIUs Without Control Mechanisms: | 0 |
| # of SIUs not Inspected: | 0 |
| # of SIUs not Sampled: | 3* |
| # of SIUs in Significant Noncompliance (SNC) with Pretreatment Standards: | 2 |
| # of SIUs in SNC with Reporting Requirements: | 6 |
| # of SIUs in SNC with Pretreatment Compliance Schedule: | 0 |
| # of SIUs in SNC Published in Newspaper: | 7 |
| # of SIUs with Compliance Schedules: | 0 |
| # of Violation Notices Issued to SIUs: | 6 |
| # of Administrative Orders Issued to SIUs: | 0 |
| # of Civil Suits Filed Against SIUs: | 0 |
| # of Criminal Suits Filed Against SIUs: | 0 |
| # of Categorical Industrial Users CIUs: | 15 |
| # of CIUs in SNC: | 7 |
| <u>Penalties</u> | |
| Total Dollar Amount of Penalties Collected | \$ 0.00 |

*Two (2) industries not sampled due to No flow and One (1) industry closed in late 2023.

of IUs from which Penalties have been collected:

0

Local Limits

Date of Most Recent Technical Evaluation of Local Limits:

May 2016

Date of Most Recent Adoption of Technically Based Local Limits:

January 1, 2017

| <u>Pollutant</u> | <u>MAHL (lb/Day)</u> | <u>MAIL (lb/Day)</u> | <u>Limit (mg/L)</u> |
|------------------|----------------------|----------------------|---------------------|
| Arsenic | 2.6909 | 2.662 | 0.235 |
| Cadmium | 1.4908 | 1.220 | 0.108 |
| Chromium (Total) | 114.6738 | 102.56 | 4.53 |
| Copper | 66.2013 | 52.42 | 3.47 |
| Lead | 10.0492 | 7.768 | 0.685 |
| Mercury | 0.37 | 0.321 | 0.028 |
| Molybdenum | 10.2593 | 8.43 | 0.74 |
| Nickel | 23.5636 | 20.55 | 1.81 |
| Selenium | 5.1917 | 2.61 | 0.23 |
| Silver | 17.7409 | 15.86 | 0.98 |
| Zinc | 126.2914 | 72.20 | 4.5 |