PRETREATMENT PROGRAM

ANNUAL REPORT

JANUARY 1, 2024 – DECEMBER 31, 2024

The Narragansett Bay Commission

FIELD'S POINT AND BUCKLIN POINT DISTRICTS

MARCH 15, 2025

The Narragansett Bay Commission
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Vincent J. Mesolella
Chairman

Laurie A. Horridge
Executive Director

March 15, 2025

Dear Friends:

I am pleased to present the 2024 Narragansett Bay Commission (NBC) Pretreatment Program Annual Report for the period from January 1, 2024 through December 31, 2024. This annual report is a detailed summary of the many accomplishments associated with the NBC source reduction and control programs utilized in the two sewage districts.

The pandemic conditions of the past few years have underscored two very important truths: that clean water is essential for public health and that a strong local business community is our best defense against supply chain disruptions and economic volatility. The NBC Pretreatment Program proudly supports a robust local economy and a clean and healthy bay.

Through education, source reduction and source control, the NBC Pretreatment and Technical Analysis & Compliance Sections work with local regulated users to keep toxics out of the NBC sewer system. These efforts are supported by the work of the NBC Environmental Monitoring, Laboratory and Legal sections with the ultimate goal of protecting and enhancing our state's greatest resource, Narragansett Bay.

During 2024, NBC staff conducted 1,407 inspections of and collected 159 samples from industrial and commercial facilities. Notice of Violation letters were issued for all incidents of non-compliance. During 2024, the NBC issued 2,364 of these letters and one Administrative Order against a violator assessing $10,000 in administrative penalties for various violations of the NBC Rules and Regulations. The program also recognized eighteen users for perfect compliance with all NBC regulations.

Since the NBC acquired the Field's Point Wastewater Treatment Facility in 1981, the total metal loadings to the Field's Point facility have been reduced by 931,127 pounds, which equates to 97.6%. In addition, the cyanide loadings were reduced by 79,132 pounds, a 98.4% reduction from 1981 levels. Similar reductions have been achieved at the Bucklin Point Wastewater Treatment Facility. These improvements, in tandem with significant investments in NBC's clean water infrastructure, have yielded a bay that is cleaner this it has been in over 150 years.

The NBC continues to be a national leader in the field of wastewater treatment and environmental protection. The outstanding work done by NBC staff members in environmental education, enforcement, monitoring and analysis will ensure a cleaner Narragansett Bay for all to enjoy. I trust you will find this report to be thoroughly detailed and informative.

Sincerely,

Laurie A. Horridge
Executive Director

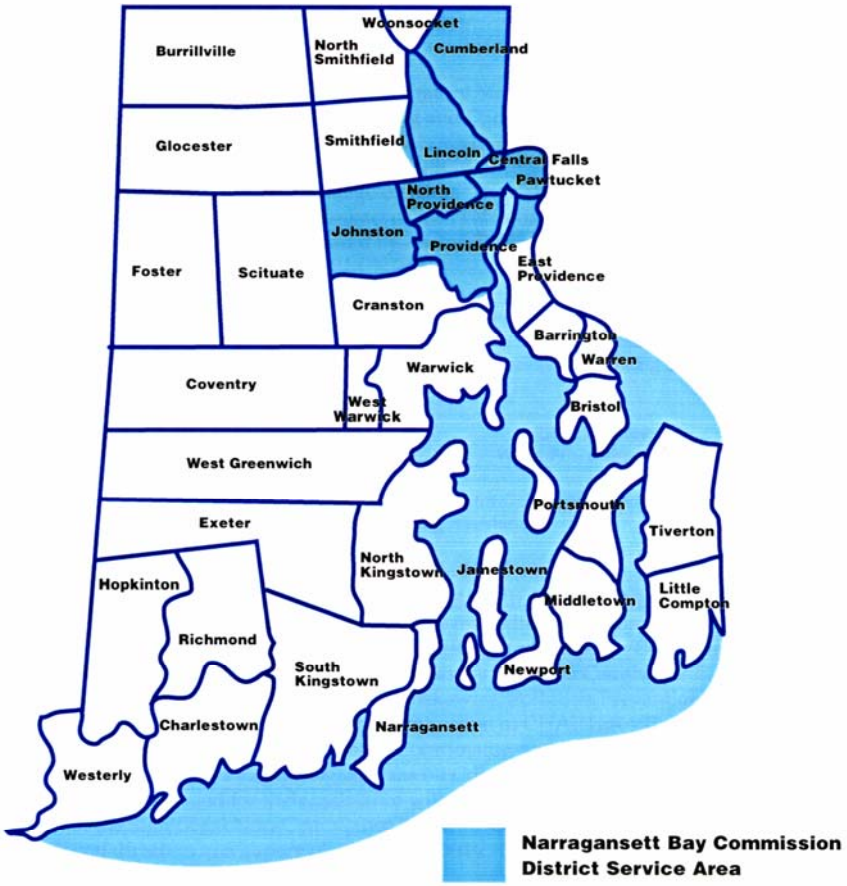
Narragansett Bay Commission
Mission Statement:

To maintain a leadership role in the protection and enhancement of water quality in Narragansett Bay and its tributaries by providing safe and reliable wastewater collection and treatment services to its customers at a reasonable cost.

Narragansett Bay Commission

Service Area

The Narragansett Bay Commission is Rhode Island's largest wastewater authority dedicated to providing reliable, cost-effective wastewater collection and treatment services to over 360,000 residents and 8,000 businesses in ten Rhode Island communities in the metropolitan Providence and Blackstone Valley areas. These communities include: Providence, North Providence, Johnston, Pawtucket, Central Falls, Cumberland, Lincoln, the northern portion of East Providence and small sections of Cranston and Smithfield.



ACKNOWLEDGMENTS

This report was written by Kerry M. Britt, Pretreatment Manager, with the assistance of the staff of the Pretreatment Program:

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A special acknowledgment to Nathan J. Dean and Angelina Glater, and the entire Environmental Monitoring and Laboratory staff. Their hard work allowed the NBC to successfully complete wastewater sampling and analysis of all significant industrial users discharging within the NBC districts and to conduct surveillance manhole monitoring of industrial and sanitary drainage districts. The data analysis presentation provided in CHAPTER V of this report, Impact of the Pretreatment Program on the Control of Toxic and Incompatible Waste, was prepared by Eliza Moore, Tara Franey and Nicole Skyleson.

Holly Ialongo, Chief Legal Counsel, and Jaclyn Cotter, Associate Legal Counsel, are to be credited for their effective Enforcement Program and the preparation of the Enforcement Section, CHAPTER VI, of this report. Jamie Samons, the Public Affairs Manager, is to be acknowledged for her assistance with various sections of this report, including the development of the Significant Non-Compliance Public Notice and Perfect Compliance Advertisement. This report was completed under the supervision of Walter Palm, Director of Environmental Science & Compliance.

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I. EXECUTIVE SUMMARY

The Narragansett Bay Commission

The Narragansett Bay Commission (NBC) was created in 1980 by the R.I. General Assembly. Shortly thereafter voters approved a $87.7 million bond referendum to reduce the amount of pollutants the Field's Point Wastewater Treatment Facility in Providence was discharging into Narragansett Bay and its tributaries. At that time, nearly 45 million gallons of untreated sewage flowed into Rhode Island waterways daily, resulting in temporary and permanent closures of shell fishing beds in Upper Narragansett Bay, violating federal laws, and most importantly, threatening public health and the region's environmental and economic well-being.

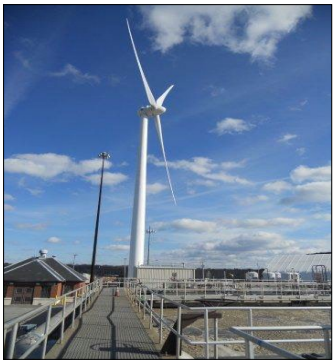
The NBC owns and operates the state's two largest wastewater treatment facilities and provides quality wastewater collection and treatment services to about 360,000 people and 9,390 commercial and industrial customers located in Providence, North Providence, Johnston, Pawtucket, Central Falls, Cumberland, Lincoln, the northern portion of East Providence, and small sections of Cranston and Smithfield. The Pretreatment Program is charged with protecting these treatment facilities and Narragansett Bay from the discharge of toxic and nuisance pollutants.

Field's Point Wastewater Treatment Facility

In 1982 the NBC took over the operation of the Field's Point Wastewater Treatment Facility. Prior to the NBC taking over the operation, the plant was discharging untreated wastewater to the receiving waters of Rhode Island. At that time, the treatment plant was receiving approximately one million pounds of metals per year in the influent.

Field's Point Wastewater Treatment Facility

Since the NBC took over the ownership and operation, Field's Point has been transformed into a highly sophisticated, award-winning facility. As the largest secondary wastewater treatment facility in Rhode Island and the second largest in New England, the Field's Point Wastewater Treatment Facility provides preliminary and primary treatment for up to 200 million gallons per day (MGD) of wastewater, secondary treatment for up to 91 MGD and in 2024 had an average daily flow to the facility of 47.6 MGD.



Field's Point Wind Turbine and IFAS Tank

The NBC installed three 1.5 megawatt (MW) industrial grade wind turbines at the Field's Point plant in 2012. Due to the success of these three wind turbines, the NBC purchased three additional wind turbines located in Coventry, Rhode Island. To advance further toward the goal of net-zero sustainable energy, in 2017 the NBC contracted to obtain electricity from several photovoltaic (PV) farms located in Richmond, RI. In 2024, 72.0% of electricity used by the NBC came from these wind and solar energy services.

In addition to the wind turbine project, the NBC upgraded the Field's Point plant with Biological Nutrient Removal (BNR) technology to comply with Consent Agreement requirements to meet the total nitrogen limitation of 5.0 ppm. This seasonal limit became effective in May 2014 and was maintained in the RIPDES permit that became effective on December 1, 2017. The ten existing secondary treatment aeration tanks were converted to Integrated Fixed Film Activated Sludge (IFAS) tanks, an advanced treatment technology. This project made Field's Point the largest IFAS treatment plant in the world. These tanks have five zones, both aerobic and anoxic, that wastewater travels through in order to remove nitrogen. Media has been added to each IFAS tank to provide a substrate where a film of nitrifying bacteria can grow and be retained in the treatment tank. All of the tanks have been converted and nitrogen concentrations have decreased dramatically in the plant effluent. The seasonal 2024 nitrogen load to the Providence River decreased by 83.5% from 2003 loading levels, the year of the historic Greenwich Bay fish kill. Throughout the 2024 permit season, Field's Point met the seasonal summer total nitrogen permit limits of 5.0 ppm and the loading limit of 2,711 pounds per day, averaging a seasonal discharge concentration of 2.99 ppm and 924.1 pounds per day. The annual average total nitrogen discharged from Field's Point was 5.98 ppm and 2,327.6 pounds per day in 2024.

IFAS Media

Bucklin Point Wastewater Treatment Plant

In 1992, the R.I. General Assembly expanded the NBC mission by placing it in charge of the Bucklin Point Wastewater Treatment Facility in East Providence. This facility is designed to provide secondary treatment of 46 million gallons per day, and the average daily flow was 23.5 MGD in 2024.

During 2006 the Bucklin Point plant completed a series of facility upgrades. A wet weather treatment facility was built that significantly reduced wet weather by-pass events by allowing the plant to process up to 116 MGD during wet weather. The facility upgrades included biological nitrogen removal treatment (BNR) and replaced chlorine disinfection by the use of ultraviolet light (UV). An enhanced BNR treatment system went on-line in 2014. The plant was upgraded to a four-stage nitrification/denitrification process from a two stage process. Also, a building on site was converted to hold a carbon source for the BNR process. Bucklin Point was required to comply with the seasonal total nitrogen limitation of 5.0 ppm beginning in May 2014. The 2024 seasonal nitrogen loading from this facility to Narragansett Bay was reduced by 79.9% from 2003 loading levels, the year of the Greenwich Bay fish kill.

Bucklin Point Wastewater Treatment

Throughout the 2024 permit season, Bucklin Point did well to meet the total nitrogen limits of 5.0 ppm and 1,293 pounds per day. The average total nitrogen discharged from May through October was 3.92 ppm and 576.3 pounds per day. The annual average total nitrogen discharged from Bucklin Point was 4.52 ppm and 798.6 pounds per day in 2024.

Pretreatment Annual Report Overview

CHAPTER I of this report provides an overview of the NBC, its unique and innovative approaches to source reduction and control and provides a summary of each chapter of the annual report. Also contained in this chapter is a section regarding firms that have had their user classification changed during 2024, including a list of new significant industrial users and a section regarding firms that experienced major changes in water usage in 2024. A summary of the work done over the past year by the Pretreatment, Environmental Monitoring (EM), and Enforcement Sections of the NBC is provided at the end of this chapter in TABLES 5, 6, 7 and 8, the Pretreatment Performance Summary Sheets for both districts.

CHAPTER II describes the administration of the NBC Pretreatment Program including the status of Pretreatment, EM, Technical Analysis & Compliance (TAC), and Laboratory staff, a summary of the budgets for these sections, staff training, the Pretreatment information management system and public information and education methods used by the NBC.

CHAPTER III details the industrial and commercial user base of the NBC and includes the NBC permit classification system, user inspections and emergency and special investigations. During 2024, Pretreatment staff issued 480 permits to users located in the Field's Point and Bucklin Point Districts, conducted 1,407 facility inspections, held 76 regulatory compliance meetings with users and responded to 14 emergency or special investigations.

CHAPTER IV details the compliance monitoring protocols and provides a review of all types of monitoring results including user self-monitoring, NBC monitoring of users, and surveillance manhole sampling results. During 2024, the NBC conducted 154 sampling inspections, performed 299 manhole sampling events, and reviewed 2,298 analytical reports of users located in the Field's Point and Bucklin Point Districts.

CHAPTER V of this report provides an analysis of the toxic pollutant loadings contained in the wastewater influent, effluent, and sludge for the Field's Point and Bucklin Point Wastewater Treatment Facilities. This analysis shows that in 2024 the total metals loading to Field’s Point increased by 3,631.7 pounds or 18.8% when compared to 2023. The total metals loading to Bucklin Point increased by 337.6 pounds or 3.7 % when compared to 2023. The cyanide loading to Field’s Point increased by 264.8 pounds or 25.4% in 2024, and the cyanide loading to Bucklin Point decreased by 4.2 pounds or 1.0% in 2024. Loadings to both facilities were well within the Maximum Allowable Headworks Loadings (MAHL) established for each plant.

CHAPTER VI details the types of enforcement actions used by the NBC and reviews the enforcement actions initiated by the NBC over the past year. During 2024, the NBC issued 2,364 Notice of Violation letters. One Administrative Order (AO) was issued in response to violations of a Sewer Connection Permit. The AO assessed $10,000 in administrative penalties. The NBC issues some type of enforcement action against 100% of the violators of the NBC Rules and Regulations.

CHAPTER VII of this report details projects and programs underway and those already completed by the Environmental Science & Compliance Division of the Narragansett Bay Commission. A description of the NBC approach to the EPA Dental Rule (40CFR441) can be found in this chapter.

CHAPTER VIII reviews the status of the goals established by the Pretreatment, EM, TAC, and Laboratory sections for 2024 and describes the ambitious goals established by these sections for 2025.

Unique Program Elements, Activities, Awards And Accomplishments

The NBC uses innovative and unique activities, projects, and programs to control and reduce the discharge of toxic and nuisance pollutants into the sewer system. The following is a short summary of these innovations and unique programmatic elements, along with a summary of NBC awards and accomplishments for the past year. Details about each of these innovations, accomplishments, and awards can be found within the chapters of this report.

Permitting

- Prompt and standardized user plan reviews through weekly internal plan review meetings
- Permitting all users with process wastewater discharges to the sewer system
- Permitting facilities recycling and/or disposing process wastewater off site as they have the potential to discharge to the sewer system via sanitary connections
- Aggressive programs of permitting all users that greatly exceeds EPA permitting requirements

NBC Inspection Program

- NBC internal goal to inspect every Significant Industrial User (SIU) at least twice per twelve month period, exceeding EPA requirements
- Development and use of SIU annual inspection forms ensure thorough and standardized inspections of each SIU
- Zero discharge firms are inspected at least twice per year to ensure compliance with permit requirements
- Extensive inspections of non-significant industrial and commercial users are performed annually
- Monthly inspections of industrial areas are conducted to ensure all sources of non-sanitary wastewater are permitted in accordance with the NBC Rules and Regulations
- Intensive restaurant inspection program to verify grease removal unit maintenance
- All NBC inspections stress user education regarding EPA Significant Non-Compliance (SNC) criteria, NBC mission statement, and available compliance programs, in addition to addressing regulatory compliance issues. This has contributed to the decreased rate of SIU SNC
- Response to 100% of reports regarding spills, unusual influents, odors, etc.

NBC Monitoring Program

- NBC internal goal to sample every SIU twice per twelve month period, exceeding EPA requirements
- Clean sampling programs utilized by EM staff
- Extensive use and documentation of all standard operating procedures to ensure quality assurance and quality control that greatly exceeds EPA requirements
- Extensive receiving water and treatment plant sampling programs
- Sanitary and industrial surveillance manhole monitoring conducted weekly to monitor compliance and loadings to the treatment facilities
- Septage monitoring program to scan for toxic, industrial and non-residential quality waste

User Self-Monitoring

- Permitted users are required to conduct regularly scheduled self-monitoring of their final effluent as well as batch discharges. The frequency of self-monitoring ranges from bi-annually to monthly and is dependent on the category and hydraulic loading from the facility
- Four consecutive weeks of resampling indicating full compliance is required for any effluent violation recorded. Benefits include: users are brought back into compliance quickly, SNC is reduced due to increased monitoring, reduced loadings to the sewer, escalated enforcement due to additional evidence, etc.
- SIU permit required monitoring greatly exceeds monitoring required by EPA regulations

Computerized Compliance and Data Tracking System

- Networked computer database consisting of all company, permit and compliance information which is available via desktop and tablet connections to all Pretreatment, TAC, EM, and Enforcement staff
- Pretreatment system software has been upgraded to increase functionality and is expandable
- System automatically generates violation letters for any non-compliance event and tracks all user requirements
- System calculates SNC and enables flagging of any user approaching SNC, allowing staff to implement corrective actions

Enforcement

- Some type of enforcement action issued against 100% of violators
- Cost of SNC Public Notice billed to firms published
- Use of innovative settlement agreements, which may include:
    - ~ Community based environmental projects
    - ~ Development of public service announcements
    - ~ Purchase of Pollution Prevention and Monitoring Equipment
    - ~ Use of Supplemental Environmental Projects

- Environmental Enforcement Fund - Penalties assessed are deposited into this NBC fund, from which special environmental projects and/or enforcement equipment and resources are funded
- In-house legal staff available for quick enforcement response
- Work with state and federal criminal investigators regarding criminal pollution violations

Pollution Prevention Program

- Free technical compliance assistance program
- On site consultations and pilot testing
- Routine referrals for pollution prevention assistance by regulatory staff in all Notices of Violation (NOV) and other user correspondence and communications
- Solicitations for pollution prevention assistance by TAC staff directly to industries
- Extensive educational efforts
- Free water audits conducted of businesses, large residential buildings and industries

User Education, Training and Outreach

- Workshops and public presentations regarding Pollution Prevention, Pretreatment, Storm Water Management, Water Quality, and Monitoring topics
- Periodic informational mailings to permitted users
- Press releases and public notices
- Development and distribution of fact sheets, and Best Management Practice (BMP) documents
- NBC informational websites (http://www.narrabay.com and http://snapshot.narrabay.com)
- Phase III Combined Sewer Overflow (CSO) Stakeholders Process

Projects, Programs, and Studies

- Environmental Merit Award Programs, include:
  - ~ Pollution Prevention Award
  - ~ Perfect Compliance Award
  - ~ Storm Water Management Award
- Grease Control Program, which has greatly reduced sewage backups and overflows attributable to grease accumulations in sewer lines
- Dental Amalgam Program
- River Water Quality Monitoring Program
- Residential Septage Hauler Discharge Control Permitting Program
- Wet Weather CSO Monitoring Program
- Regional Ocean Modeling Systems Hydrodynamic Model Development Project
- Evaluation of bacteria sources to receiving waters
- Fixed Site Monitoring Network Project to monitor Narragansett Bay water quality and provide on-line monitoring data to the public
- Computerization of Sewer System Mapping
- Woon Watershed Explorers Program
- River Restoration Initiative
- Energy Management Program including alternative energy evaluations
- Sustainable Energy Management at Wastewater Treatment Facilities Program

Staff Training

- NBC provides extensive training to its employees, including safety and procedural training
- Pretreatment, EM, Lab, and TAC staff receive 40-hour and/or 24-hour HAZWOPER and annual 8-hour HAZWOPER refresher training
- NBC has a tuition reimbursement program to assist employees to further their education and enhance their performance
- Intrasectional Training
- Interagency Training

2024 Accomplishments

~ ***Permitting:***

- 480 Permits issued
- 152 New permits issued to previously unpermitted firms
- 328 Revised permits issued

~ ***Inspections and Sampling:***

- 1,407 Non-sampling Inspections conducted
- 254 Non-sampling Inspections of SIUs
- 151 Non-sampling Inspections of Categorical Users
- 103 Non-sampling Inspections of Significant Non-Categorical Users
- 1,153 Non-sampling Inspections of Non-Significant Users
- 76 Regulatory Compliance Meetings held with Users
- Pretreatment staff reviewed 2,298 User Monitoring Reports
- 14 Emergency/Special Investigations conducted
- 159 User Monitoring Reports generated by NBC
- 154 NBC Sampling Inspections of Industry
- 68 Different Facilities Sampled by NBC
- 159 Monitoring Reports of SIUs generated
- 92 Monitoring Reports of Categorical Users generated
- 67 Monitoring Reports of Significant Non-Categorical Users generated
- 299 Manhole Sampling Events conducted
- 257 Industrial Surveillance Manhole Sampling Events conducted
- 42 Sanitary Manhole Sampling Events conducted

~ ***Enforcement:***

- 2,364 NOV Letters Issued
- 18 Firms listed in the February 28, 2025, Public Notice in the Providence Journal as being in Significant Non-Compliance (SNC)
- All but five firms listed in SNC achieved full compliance with cited violations prior to publication of the Public Notice

~ ***User Compliance:***

- 9.1% Rate of SIU SNC in the Field's Point district for 2024, a reduction from 39% in 1992
- Rate of SIU SNC reduced in Bucklin Point from 44.8% in 1994 to 13.5% for 2024
- Overall rate of SIU SNC is 11.4% in 2024
- 90.8% Overall Rate of Compliance for All Significant Users
- 94.7% Overall Rate of Compliance for All Categorical Users
- 94.0% Overall Rate of Compliance for All Non-Significant Users
- 92.4% Overall Rate of Compliance for All Users
- 68.4% of EPA categorically regulated users had perfect effluent compliance records with all effluent parameters excluding pH
- 72.5% of Significant Users AND 87.5% of all users had perfect effluent compliance records with effluent pollutants excluding pH
- Rate of SNC has been significantly reduced in both sewage districts over the past decade through Pretreatment's User Education Methods

Notification of Changes in User Status

During 2024, six users were reclassified from significant to non-significant. None of the six users were categorically regulated. One of these users began operations in late March and completed its project in June. Four of the users were associated with Phase III of the NBC CSO Abatement Project and ceased discharges during 2024. The remaining company completed its project to clean lagoons for the Pawtucket Water Supply Board. One of the users was located in the Field's Point district and eliminated 15,915 gallons per day of industrial flow to the Field's Point facility. The five remaining users were located in the Bucklin Point district and eliminated 73,513 gallons per day of industrial flow to the Bucklin Point facility.

In 2024, there were five newly classified SIUs. Three are located in the Bucklin Point district and contribute 251,008 gallons per day of industrial flow to the plant. One of the new SIUs conducts groundwater remediation operations for a superfund site. During 2024, the company changed its process operations and increased its flow discharged to the sewer system. One new SIU conducts dewatering operations as part of the construction of the tunnel pump station associated with Phase III of the NBC CSO Abatement Project. The remaining new Bucklin Point SIU conducts food processing operations and increased its discharge to greater than 5,000 gallons per day. The remaining two new SIUs are located in Field's Point district and contribute 23,190 gallons per day of industrial flow to the plant. One of the new SIUs conducted hydro-demolition operations. This SIU completed its project and ceased discharges. The remaining new Field's Point SIU conducts food processing operations and increased its discharge to greater than 5,000 gallons per day.

A review of the baseline monitoring reports submitted by the newly classified SIUs indicates that the discharge from these facilities had no adverse effect on the quantity or quality of effluent discharged from either the Field's Point or Bucklin Point Wastewater Treatment Facilities. The SIUs which were reclassified during 2024 and the reason for each reclassification are detailed in TABLE 1.

TABLE 1
2024 Significant Industrial Users Classification Changes

Firms Reclassified to Non-Significant

Field's Point Firms	*Reason for Reclassification*
Bentley Companies	Firm ceased discharges

Bucklin Point Firms	*Reason for Reclassification*
Barletta Heavy Division – Central Avenue Site	Firm ceased discharges
CBNA Barletta Phase IIIA CSO JV - OF 213 Drop Shaft Site	Firm ceased discharges
CBNA Barletta Phase IIIA CSO JV – Receiving Shaft Site	Firm ceased discharges
John Rocchio Corporation	Firm ceased discharges
Synagro Northeast, LLC	Firm ceased discharges

Newly Classified Significant Users

Field's Point Firms	*Reason for Reclassification*
Bentley Companies	Firm discharges greater than 5,000 gallons per day
Ugarit Inc. dba Ocean State Peeled Potatoes	Firm discharges greater than 5,000 gallons per day

Bucklin Point Firm	*Reason for Reclassification*
Conopco, Inc. dba Unilever	Firm discharges greater than 5,000 gallons per day.
Finlay Extracts & Ingredients USA, Inc.	Firm discharges greater than 5,000 gallons per day
Hart Engineering Corporation	Firm discharges greater than 5,000 gallons per day.

During 2024, 22 Field's Point SIUs had changes in water usage that are noted in this section. Eleven of the 22 firms increased their water usage by a combined total of 35,210 gallons per day. The remaining eleven of the 22 firms decreased their water usage by a combined total of 35,672 gallons per day. There was virtually no change in industrial flow to the Field's Point facility from these 22 facilities. The overall change in industrial flow to the treatment plant is an increase of 6,823 gallons per day when the SIU reclassifications noted above are taken into account. This increase in industrial flow did not have an adverse effect on the quality of wastewater discharged from the Field's Point treatment facility.

Twenty-one Bucklin Point SIUs experienced notable changes in water usage during 2024. Eleven of the 21 SIUs increased their water usage by a combined total of 119,480 gallons per day. Ten of the 21 SIUs decreased their water usage by a combined total of 32,393 gallons per day. The net change in flow to Bucklin Point is an increase of 87,087 gallons per day of industrial flow. The overall change in industrial flow to the treatment plant is an increase of 264,574 gallons per day when the SIU reclassifications noted above are taken into account. This increase in industrial flow did not have an adverse effect on the quality of wastewater discharged from the Bucklin Point treatment facility.

The SIUs with significant changes in water usage during 2024 are detailed in TABLE 2.

TABLE 2
2024 Significant Industrial User Changes in Water Usage

Firms with Increased Flow

Field's Point

Company	*Change in Flow (gpd)*	*% Change*
Alloy Holdings, LLC	1,345	9.2%
Armbrust International, Ltd.	940	21.7%
Contract Specialties, Inc.	383	13.2%
DiFruscia Industries, Inc.	2,135	9.4%
E&M Enterprises, Ltd.	2,049	46.6%
Manchester Street, LLC	16,924	85.8%
Narragansett Jewelry Co., Inc. dba C & J Jewelry Company	7,900	159.9%
Technodic, Inc.	1,299	22.1%
Tri-Jay Company	1,371	16.2%
Unique Plating Co., Inc.	305	18.6%
Universal Plating Co., Inc.	559	106.9%

Bucklin Point

Company	*Change in Flow (gpd)*	*% Change*
BEST Engineered Surface Technologies LLC	1,897	186.0%
CBNA Barletta Phase III CSO JV – 804 School Street	68,072	59.1
Ecological Fibers, Inc.	621	28.2%
Ennovi Advanced Mobility Solutions Rhode Island, Inc.	37,594	72.7%
HP Services, Inc.	312	20.6%
Murdock Webbing Co., Inc	2,608	23.3%
Organic Dyes & Pigments, LLC	841	142.8%
Providence Metallizing Company, Inc.	1,720	16.4%
Tedor Pharma, Inc.	339	55.4%
Teknor Apex Company	5,271	32.3%
Truex, Inc.	205	24.3%

TABLE 2
(continued)
2024 Significant Industrial User Changes in Water Usage

Firms with Decreased Flow

Field's Point

Company	*Change in Flow (gpd)*	*% Change*
Induplate, LLC	-4,651	-7.1%
International Chromium Plating Company, Inc.	-427	-34.7%
International Insignia Corporation	-2,704	-45.8%
Ira Green, Inc.	-5,678	-18.4%
Mahr, Inc.	-422	-15.5%
Monarch Metal Finishing Co., Inc.	-1,524	-13.9%
Monarch Metal Finishing, Inc.	-7417	-19.4%
Providence Specialty Products, LLC	-5,248	-16.6%
Rhode Island Heat Treating & Black Oxide Co.	-124	-32.9%
Surface Coatings, LLC	-1,098	27.3%
Textron, Inc.	-6,379	-47.6%

Bucklin Point

Company	*Change in Flow (gpd)*	*% Change*
Accent Plating Company	-465	-33.8%
Chemart Company	-7,338	-33.1%
Hindley Manufacturing Company	-806	-50.8%
Hord Crystal Corporation	-44	-40.4%
John H. Collins & Sons Company	-341	-30.6%
Materion Technical Materials, Inc.	-7,189	-13.1%
Prysmian Cables and Systems USA, LLC	-3,379	-57.3%
Stackbin Corporation	-149	-25.0%
Tanury Industries	-12,268	-15.6%
Tiffany and Company	-414	-20.9%

In 2024, there were two companies that requested to begin discharging flow from its operations at a rate greater than 75,000 gallons per day. As required by the RIPDES permits that became effective in December 2017, the Pretreatment Section notified the DEM of the substantial change in flow in both cases. One company performs dewatering operations as a part of the construction of the tunnel pump station associated with Phase III of the NBC CSO Abatement project. The second firm conducts groundwater remediation of a superfund site. TABLE 3 below summarizes the Notifications of Substantial Change made in 2024.

TABLE 3
2024 Notifications of Substantial Change

District	*Company Name*	*Requested Flow Increase*
Bucklin Point	Conopco, Inc. dba Unilever	215,000 gallons per day
Bucklin Point	Hart Engineering Corporation	110,000 gallons per day

During 2024, one SIU experienced a name change. There were no operational changes associated with this name change. TABLE 4 below summarizes the 2024 name changes.

TABLE 4
2024 Significant Industrial User Name Changes

2023 Company Name	*2024 Company Name*
Interplex Engineered Products, Inc.	Ennovi Advanced Mobility Solutions Rhode Island, Inc.

Pretreatment Program Performance Evaluation

Nationally, the EPA assesses the effectiveness of a pretreatment program by reviewing specific data submitted by each program. This data is reported on a standard EPA form entitled the Pretreatment Performance Summary Sheet. The Pretreatment Performance Summary Sheet contains general information about the sewage agency, the permitting and compliance status of significant industrial users, and the enforcement actions issued.

The NBC believes that the Pretreatment Program has achieved its stated goals and has been quite effective at reducing and controlling the discharge of toxics into the sewer system. This is evidenced by the fact that user compliance rates are excellent, no incidents of pass through or interference occurred, and treatment plant influent loading goals are being met.

Various factors are reviewed to properly evaluate and measure the effectiveness of a Pretreatment Program. These factors include the following:

- Industrial User Rate of Significant Non-Compliance;
- Effectiveness of Enforcement Response Program;
- Sufficiency of Program Funding and Staffing Levels;
- Application of Local Limits;
- Sufficiency of Statutory Authority and Rules and Regulations;
- Evaluation of recent and proposed program modifications;
- Pretreatment Performance Summary Sheet "Bean Counts".

The NBC routinely reviews all the aforementioned criteria to ensure that the Pretreatment Program satisfies and exceeds all EPA and DEM Pretreatment Program requirements. The following paragraphs detail the NBC efforts with regard to each criteria, as required by RIPDES permit requirements C(7)(i) and C(7)(j).

~ Evaluation of Significant Non-Compliance

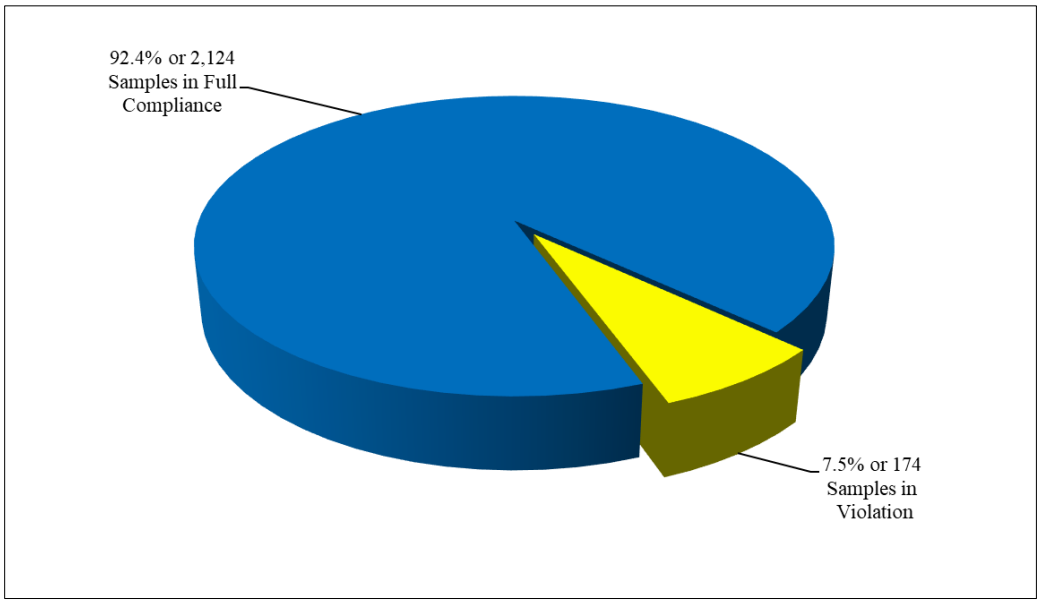
Through extensive user education efforts, quick enforcement response to user violations and regular monthly reminder telephone calls to users, the Pretreatment Section has over the years reduced its SIU rate of Significant Non-Compliance (SNC) substantially in both districts. The combined rate of SNC for significant industrial users located in the two NBC sewage districts for 2024 was 11.4%, a slight decrease from the SNC rate of 13.5% observed in 2023.

The SIU rate of SNC was dramatically reduced in Field's Point from a high of 39.0% in 1992 to 9.1% for 2024, while the SIU rate of SNC for Bucklin Point was reduced from a high of 44.8% in 1994 to 13.5% in 2024. These impressive reductions in the rate of SIU SNC are directly attributed to increased user education efforts made by the Pretreatment staff and by stringent regulatory requirements to promptly identify and correct user violations.

These Pretreatment educational efforts include informing users about the EPA SNC violation criteria during all inspections and by sending annual informational letters to remind users about permit requirements and SNC ramifications. Regulatory efforts to reduce SNC include imposing stringent resampling requirements over four consecutive weeks for any effluent monitoring violation, and by the implementation of a procedure to call users prior to a monitoring report being thirty (30) days late past the due date. In addition, Pretreatment runs monthly reports to identify companies with the potential to be in SNC. Staff contact these companies and informs them of the steps necessary to avoid SNC.

As a result of these efforts, the NBC has been able to maintain overall SIU rates of SNC to 11.4%. As can be seen from FIGURE 1, 92.4% of the 2,298 analytical reports reviewed by the Pretreatment staff during 2023 were in full compliance with effluent discharge limitations, standards which are more stringent than EPA categorical standards.

FIGURE 1
USER COMPLIANCE RATE
FOR ALL EFFLUENT ANALYSES



2,298 Total Analyses Reviewed

In addition, as shown in CHAPTER IV of this report, the 2024 rate of compliance of categorical users in the two districts was 94.7%, while the compliance rate for significant users was 90.8%. These excellent rates of user compliance with effluent limits are reflected in the long-term reductions in toxic loadings to the Field's Point and Bucklin Point treatment facilities, as shown in CHAPTER V of this report.

Eighteen firms located in the Field's Point and Bucklin Point districts were listed in a Public Notice in the Providence Journal on February 28, 2025, as being in SNC for the period from October 1, 2023 through December 31, 2024. Of the eighteen firms published for being in SNC, nine users are located in Field's Point and nine users are located in Bucklin Point.

There were five categorical users published for being in SNC. Three categorical users are located in Bucklin Point and two are located in Field's Point. The names of three non-categorical significant users were published for being in SNC, one is located in Field's Point and two are located in Bucklin Point. Ten non-significant industrial users were listed in the Public Notice, six from Field's Point and four from Bucklin Point. Eleven of the 18 firms, or 61.1%, were listed as being in SNC solely for administrative violations such as submitting a report late. Three firms listed in the notice were cited as being in SNC solely due to violations of effluent limitations. The four remaining facilities listed in the notice were cited as being in SNC for both violations of effluent limitations and administrative violations. At the time of publication of this report, all but five of the facilities cited as being in SNC were back in full compliance with NBC regulations.

~ *Effectiveness of NBC Enforcement Response Program*

The NBC has a very aggressive and effective enforcement program. The Pretreatment Program issues some type of enforcement action for 100% of all violations observed, in accordance with the NBC approved Enforcement Response Plan (ERP). Pretreatment staff works very closely with the Legal Section and has the capability to issue an Administrative Order or Cease and Desist Order immediately, if necessary, to halt illicit discharges as detailed in the approved ERP.

During 2024, the NBC issued 2,436 Notice of Violation letters. The NBC Enforcement Program is efficient and clearly effective at ensuring users comply with NBC regulations and requirements. Additional information regarding the Enforcement Program is provided in CHAPTER VI.

~ *Sufficiency of Program Funding and Staffing Levels*

The NBC has provided continual support and funding to the Pretreatment, EM, TAC, and Laboratory sections, the departments responsible for controlling and reducing toxic loadings to the NBC treatment facilities and Narragansett Bay. This funding commitment has ensured adequate staffing levels necessary to get the job done in an exemplary manner. Additional information regarding the budgets and staffing of these sections is provided in CHAPTER II.

~ *Application of Local Limits*

The two NBC Wastewater Treatment Facilities have separate and distinct local limits designed to protect each wastewater treatment facility from pass-through and interference, ensuring the proper operation of the facility, to protect the receiving waters of the state, to protect the sludge quality and to protect the health and safety of NBC workers and the general public. The local limits are rigidly enforced by the NBC Pretreatment staff. The NBC routinely reviews influent, effluent, sludge, and receiving water analytical data to ensure that the NBC local limits are appropriate for each treatment facility. Based upon this review and on-going studies being conducted by the NBC, the existing local limits are appropriate and enforceable. A review of the local limits and loading evaluations for each NBC plant is provided in CHAPTER V of this report.

On September 29, 2017, the DEM issued new RIPDES permits to the Field's Point and Bucklin Point facilities. The permits became effective on December 1, 2017. The permits required the local limits for both facilities to be re-evaluated. The initial Local Limits Monitoring Plans (LLMP) were submitted to DEM on December 29, 2017. Revised LLMP incorporating comments from DEM and the Local Limits Workplan (LLWP) were submitted to DEM on February 28, 2018. The LLMPs were approved by DEM on Aril 10, 2018 and the LLWP was approved on November 15, 2018. The final Local Limits Re-Evaluation Reports (LLE) were submitted to DEM on May 15, 2019. In November 2019, DEM requested additional information. The revised LLEs, including the additional information, were submitted on January 15, 2020 and February 21, 2020.

The DEM granted preliminary approval of the proposed local limits detailed in the LLEs submitted in February 2020. The proposed local limits included mass-based limits for Ammonia, Biochemical Oxygen Demand (BOD), Total Nitrogen, and Total Suspended Solids (TSS), concentration based limits for Arsenic and the elimination of the 10 day average limits in Field's Point and the monthly average limits in Bucklin Point. Along with the preliminary approval, the DEM required the NBC to submit a request for a substantial Industrial Pretreatment Program modification. The request for the modification, along with a red-lined copy of the NBC Rules and Regulations incorporating the proposed local limits, was submitted on October 5, 2020. The DEM granted approval of the request for modification on October 19, 2020. The approval required the NBC to Public Notice and finalize the Rules and Regulations.

The NBC is required to comply with R.I.G.L. §42-35-1 et seq., also known as the RI Administrative Procedures Act (ADA). Prior to commencing with the rulemaking process governed by ADA, approval of the Rules and Regulations revisions was needed by the NBC Board of Commissioners. This approval was obtained during the December 2020 Board of Commissioners meeting. Once approval was obtained, the rulemaking process began. All required documents were submitted to the RI Office of Regulatory Reform (ORR) for review and approval. ORR approved the documents in January 2021. The revised Rules and Regulations were uploaded to the RI Secretary of State's office (SOS) website in late January 2021. The SOS office approved the revisions within 24 hours. On January 28, 2021, the NBC published a Notice of Rulemaking which opened the 30-day comment period. A Public Hearing was not held as only two comments were received. In early March 2021, a letter stating that all requirements of 40CFR 403.9(b)(2) had been met was sent to DEM. DEM put the revised NBC Rules and Regulations out for a 30-day comment period. This comment period ended in late April 2021. No comments were received during this period. The DEM issued a final approval letter on May 10, 2021. The letter indicated the NBC had 30 days to implement the IPP modification and it needed to be fully implemented by June 9, 2021. The SOS office approved the revised Rules and Regulations on May 5, 2021. The Rules and Regulations including the proposed local limits became final and enforceable on June 1, 2021. Throughout the rulemaking process, it was determined a total of 56 companies located in both districts would be required to comply with the new local limits. New categories were created for these companies. The new categories can be found in CHAPTER III. The Wastewater Discharge Permits for these 56 companies were revised to incorporate the new categories, new local limits, and new sampling requirements. The revised permits were issued in May 2021 and became effective on June 1, 2021. On May 18, 2021, the remaining permitted users were issued a letter informing them the new local limits would become final and enforceable on June 1, 2021. A new local limits table was included with the letter. The companies were instructed to replace the local limits table attached to their permits with the revised table. All Pretreatment forms, both paper and electronic versions, which reference local limits have been revised to include the new local limits.

~ Sufficiency of Statutory Authority and Rules and Regulations

The NBC has statutory authority detailed in the State of Rhode Island General Laws, Title 46, Chapter 25 et seq. This legislation permits the NBC to develop, adopt, and enforce Rules and Regulations for use of the sewage system. In 2020, the DEM required the NBC to request a modification to the Pretreatment Program to incorporate new local limits. The modification required the Rules and Regulations to be revised to ensure the new local limits are enforceable. The existing Rules and Regulations were revised to incorporate the new local limits and clarify existing regulations. The revisions were preliminarily approved by DEM in October 2020. The Rules and Regulations revisions received approval by the NBC Board of Commissioners in December 2020. In accordance with the Administrative Procedures Act (Act), the NBC submitted a Cost Benefit Analysis and red-lined copy of the NBC Rules and Regulations to the RI Office of Regulatory Reform (ORR). In January 2021, once ORR granted approval, the red-lined version was uploaded to the RI Secretary of State's office (SOS) website for approval. Both the NBC and the DEM put the revised Rules and Regulations out for public comment. The NBC received two comments and the DEM did not receive any comments. Therefore, Public Hearings were not held. The DEM and SOS office gave final approval of the Rules and Regulations in May 2021. The Rules and Regulations became final and enforceable on June 1, 2021. The NBC Rules and Regulations are available on-line at www.narrabay.com.

~ Evaluation of Recent and Proposed Program Modifications

During 2020, the DEM required the NBC to request a modification to the Pretreatment Program. The modification would incorporate new local limits. The request was submitted on October 5, 2020 and approved by the DEM on October 19, 2020. The NBC is required to comply with the Administrative Procedures Act, which requires revisions to its Rules and Regulations be reviewed and approved by the RI Secretary of State's Office. All approvals were granted in May 2021. The modification was fully implemented by June 9, 2021 as required by DEM.

~ Pretreatment Performance Summary Sheets

The U.S. EPA measures the effectiveness of a Pretreatment Program by tracking routine activities performed by the program. These include the number of users of each type, number of violations cited, number of inspections conducted, number of permits issued, number of sampling events conducted, amount of penalties assessed, etc. This information is provided in the Pretreatment Performance Summary Sheets. The Pretreatment Performance Summary Sheets, one for each NBC sewage district, are provided in TABLES 5 and 7 and detail the 2024 accomplishments of the NBC Pretreatment, Environmental Monitoring, and Enforcement Programs. In early 2008, the EPA revised the Pretreatment Performance Summary Sheet. The revised summary sheets can be found in TABLES 6 and 8.

TABLE 5

NARRAGANSETT BAY COMMISSION

FIELD'S POINT DISTRICT

PRETREATMENT PERFORMANCE SUMMARY SHEET

1. General Information

Control Authority Name	Narragansett Bay Commission
Address (treatment facility)	2 Ernest Street, Providence, RI 02905
(main office)	1 Service Road, Providence, RI 02905
(pretreatment office)	2 Ernest Street, Providence, RI 02905
Contact Persons	Laurie A. Horridge, Executive Director
	Walter Palm, ES&C Director
	Kerry M. Britt, Pretreatment Manager
Contact Telephone	(401) 461-8848
RIPDES Number	RI 0100315
Reporting Period	January 1, 2024 - December 31, 2024
Total Categorical Industrial Users as of the date of this report (throughout the reporting period)	22
Total Significant Non-Categorical IUs as of the date of this report (throughout the reporting period)	10(11) (see Note 1)
Total # Significant Industrial Users (SIUs)	32 (33) (see Note 1)

2. Significant Industrial User (SIU) Compliance

	Significant Industrial Users	
	Categorical	**Non-Categorical**
1. # Of SIUs Submitting BMRs/# Required	3/3	2/2
2. # Of SIUs Submitting 90-Day Compliance Reports/# Required	0/0	1/1
3. # Of SIUs in SNC with Pretreatment Compliance Schedule/ # Required To Meet Schedule	0/0	0/0
4. # Of SIUs In Significant Noncompliance With Self-Monitoring Reporting Requirements and have not returned to compliance	0	0
5. # Of SIUs in SNC for Violating Effluent or Reporting Requirements and have Not had Adequate Enforcement Action by POTW	0	0
6. # Of SIUs in SNC with Reporting Requirements At End of Report Period	0	0
7. # Of SIUs in SNC With Effluent Requirements At End of Report Period	0	1 (see Note 2)

TABLE 5

(continued)

NARRAGANSETT BAY COMMISSION

FIELD'S POINT DISTRICT

PRETREATMENT PERFORMANCE SUMMARY SHEET

3. Compliance Monitoring Program

	Significant Industrial Users	
	Categorical	**Non-Categorical**
1. # Of Control Documents Issued/# Required	3/3	2/2
2. # Of SIUs Without Active (Expired) Permits	0	0
3. # Of SIUs With Permits Expired For 180 Days Or More	0	0
4. # Of Non-Sampling Inspections Conducted	79	32
5. # Of Sampling Visits Conducted	57	24
6. # Of Facilities Inspected (Non-sampling)	22	11
7. # Of Facilities Sampled	22	11
8. # Of SIUs (Both) Not Inspected And Not Sampled By POTW In Past 12 Months	0	0
9. # Of SIUs Not Sampled/Not Inspected By POTW In Past 12 Months	0/0	0/0
10. # Of SIUs in SNC with Self-Monitoring and Not Inspected and Not Sampled in the Past 12 Months	0	0

TABLE 5

(continued)

NARRAGANSETT BAY COMMISSION

FIELD'S POINT DISTRICT

PRETREATMENT PERFORMANCE SUMMARY SHEET

4. Enforcement Actions

	Significant Users			
	Categorical	**Non-Categorical**	**Non-Significant**	**Total All Users**
1. Compliance Schedules Issued	0	0	0	0
2. Notices Of Violation Issued	132	60	1,261	1,461
3. Admin. Orders Issued	0	0	0	0
4. Combined Total Of Administrative Orders and Notices of Violation	132	60	1,261	1,461
5. Civil Suits Filed	0	0	0	0
6. Criminal Suits Filed	0	0	0	0
7. Combined Total of Civil and Criminal Suits	0	0	0	0
8a. Published IUs in SNC (See Newspaper Notice in Enforcement Chapter)	2	1	6	9
8b. Rate of IUs in SNC	2/22 = 9.1%	1/11 = 10.0%	N/A	N/A
9a. Amount Of Penalties Collected (Total Dollars/IUs Assessed)	0/0	$0/0	$0/0	$0/0
9b. Amount Of Penalties Assessed (Total Dollars/IUs Assessed)	$0/0	$0/0	$0/0	$0/0
10. # of IUs Subject to Any Enforcement Action	18	6	416	440
11. Other Actions (Mandatory Enforcement Meetings, Permit Suspensions, Etc.)	0	0	2	2

I certify that the information contained in the Pretreatment Performance Summary Sheet is complete and accurate to the best of my knowledge.

AUTHORIZED REPRESENTATIVE

March 15, 2025

DATE

TABLE 5
(continued)
NARRAGANSETT BAY COMMISSION
FIELD'S POINT DISTRICT
PRETREATMENT PERFORMANCE SUMMARY SHEET

Notes Regarding the Pretreatment Performance Summary Sheets

Note 1: Numbers in parentheses () reflect totals for users classified as significant for some time during the reporting period. Some of these companies are no longer classified as SIUs since they may have changed process operations or have ceased operations eliminating discharges to the sewer.

Note 2: One non-categorical SIU, Providence Specialty Products, LLC, was still exceeding the Total Oil & Grease and Biochemical Oxygen Demand limits at the end of the report period. This firm was issued an Administrative Order in July 2023. Additional information on this company can be found in CHAPTER VI.

TABLE 6

NARRAGANSETT BAY COMMISSION

FIELD'S POINT DISTRICT

REVISED PRETREATMENT REPORT SUMMARY SHEET

January 1, 2024 through December 31, 2024

POTW Name:	Narragansett Bay Commission (NBC)
NPDES Permit #:	RI0100315
Pretreatment Report Period Start Date:	January 1, 2024
Pretreatment Report Period End Date:	December 31, 2024
# of Significant Industrial Users (SIUs):	32(33) (see Note 1)
# of SIUs Without Control Mechanisms:	0
# of SIUs not Inspected:	0
# of SIUs not Sampled:	0
# of SIUs in Significant Noncompliance (SNC) with Pretreatment Standards:	3
# of SIUs in SNC with Reporting Requirements:	1
# of SIUs in SNC with Pretreatment Compliance Schedule:	0
# of SIUs in SNC Published in Newspaper:	3
# of SIUs with Compliance Schedules:	0
# of Violation Notices Issued to SIUs:	192
# 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):	22
# of CIUs in SNC:	0
Penalties Total Dollar Amount of Penalties Collected:	$0
# of IUs from which Penalties have been collected:	0

TABLE 6
(continued)
NARRAGANSETT BAY COMMISSION
FIELD'S POINT DISTRICT
REVISED PRETREATMENT REPORT SUMMARY SHEET
January 1, 2024 through December 31, 2024

Local Limits Date of Most Recent Technical Evaluation of Local Limits:	February 1, 2020
Date of Most Recent Adoption of Technically Based Local Limits:	June 1, 2021

Pollutant	**Category** (see Note 3)	**Limit (mg/L)** (see Note 2)	**MAHL (lbs/day)** (see Note 2)
Arsenic	31	0.40	2.89
	all others	0.02	
Cadmium	all	0.11	66.3
Chromium	all	2.77	238.7
Copper	all	1.20	129.2
Lead	all	0.60	111.9
Mercury	all	0.005	0.501
Nickel	all	1.62	71.0
Silver	all	0.43	191.4
Zinc	all	2.61	145.4
Cyanide	11 & 15	0.58	5.1
	all others	0.40	
BOD	14	5 (see Note 4)	85,714
	25, 28, 34 & 36	10 (see Note 4)	
	23 & 29	20 (see Note 4)	
	33	75 (see Note 4)	
	all others	300	
TSS	14	5 (see Note 4)	62,000
	25, 28, 34 & 36	10 (see Note 4)	
	23 & 29	20 (see Note 4)	
	33	75 (see Note 4)	
	all others	300	
Ammonia (see Note 5)	33	10 (see Note 4)	8,000
	all others	50	
Total Nitrogen (see Note 5)	33	10 (see Note 4)	12,000
	all others	115	

TABLE 6
(continued)
NARRAGANSETT BAY COMMISSION
FIELD'S POINT DISTRICT
REVISED PRETREATMENT REPORT SUMMARY SHEET

Notes Regarding the Revised Pretreatment Report Summary Sheets

Note 1: Numbers in parentheses () reflect totals for users classified as significant for some time during the reporting period. Some of these companies are no longer classified as SIUs since they may have changed process operations or have ceased operations eliminating discharges to the sewer.

Note 2: Local limits proposed in February 2020 became final and enforceable on June 1, 2021. The limits and MAHLs in the table are the limits in effect as of June 1, 2021.

Note 3: Category descriptions can be found in CHAPTER III.

Note 4: BOD, TSS, Ammonia and Total Nitrogen limits are in lbs/1000 gallons for these categories.

Note 5: Ammonia and Total Nitrogen limits are seasonally enforceable from May 1st through October 31st.

TABLE 7

NARRAGANSETT BAY COMMISSION

BUCKLIN POINT DISTRICT

PRETREATMENT PERFORMANCE SUMMARY SHEET

1. General Information

Control Authority Name	Narragansett Bay Commission
Address (treatment facility)	102 Campbell Avenue, East Providence, RI 02916
(main office)	1 Service Road, Providence, RI 02905
(pretreatment office)	2 Ernest Street, Providence, RI 02905
Contact Persons	Laurie A. Horridge, Executive Director
	Walter Palm, ES&C Director
	Kerry M. Britt, Pretreatment Manager
Contact Telephone	(401) 461-8848
RIPDES Number	RI 0100072
Reporting Period	January 1, 2024 - December 31, 2024
Total Categorical Industrial Users as of the date of this report (throughout the reporting period)	17
Total Significant Non-Categorical IUs as of the date of this report (throughout the reporting period)	15 (20)
Total # Significant Industrial Users (SIUs)	32 (37) (see Note 1)

2. Significant Industrial User (SIU) Compliance

	Significant Industrial Users	
	Categorical	**Non-Categorical**
1. # Of SIUs Submitting BMRs/# Required	3/3	3/3
2. # Of SIUs Submitting 90-Day Compliance Reports/# Required	0/0	1/1
3. # Of SIUs in SNC with Pretreatment Compliance Schedule/ # Required To Meet Schedule	0/0	0/0
4. # Of SIUs In Significant Noncompliance With Self-Monitoring Reporting Requirements and have not returned to compliance	0	0
5. # Of SIUs in SNC for Violating Effluent or Reporting Requirements and have Not had Adequate Enforcement Action by POTW	0	0
6. # Of SIUs in SNC with Reporting Requirements At End of Report Period	0	0
7. # Of SIUs in SNC With Effluent Requirements At End of Report Period	0	2

TABLE 7
(continued)

NARRAGANSETT BAY COMMISSION

BUCKLIN POINT DISTRICT

PRETREATMENT PERFORMANCE SUMMARY SHEET

3. Compliance Monitoring Program

	Significant Industrial Users	
	Categorical	**Non-Categorical**
1. # Of Control Documents Issued/# Required	3/3	4/4
2. # Of SIUs Without Active (Expired) Permits	0	0/0
3. # Of SIUs With Permits Expired For 180 Days Or More	0	0
4. # Of Non-Sampling Inspections Conducted	64	63
5. # Of Sampling Visits Conducted	32	41
6. # Of Facilities Inspected (Non-sampling)	17	20
7. # Of Facilities Sampled	16 (see Note 2)	19 (see Note 3)
8. # Of SIUs (Both) Not Inspected And Not Sampled By POTW In Past 12 Months	0	0
9. # Of SIUs Not Sampled/Not Inspected By POTW In Past 12 Months	0/0	0/0
10. # Of SIUs in SNC with Self-Monitoring and Not Inspected and Not Sampled in the Past 12 Months	0	0

TABLE 7
(continued)

NARRAGANSETT BAY COMMISSION

BUCKLIN POINT DISTRICT

PRETREATMENT PERFORMANCE SUMMARY SHEET

4. Enforcement Actions

	Significant Users			
	Categorical	**Non-Categorical**	**Non-Significant**	**Total All Users**
1. Compliance Schedules Issued	0	0	0	0
2. Notices Of Violation Issued	83	100	574	757
3. Admin. Orders Issued	0	0	0	0
4. Combined Total Of Administrative Orders and Notices of Violation	83	100	574	757
5. Civil Suits Filed	0	0	0	0
6. Criminal Suits Filed	0	0	0	0
7. Combined Total of Civil and Criminal Suits	0	0	0	0
8a. Published IUs in SNC (See Newspaper Notice in Enforcement Chapter)	3	4	4	11
8b. Rate of IUs in SNC	3/17 = 17.6%	4/19 = 21.1%	N/A	N/A
9a. Amount Of Penalties Collected (Total Dollars/IUs Assessed)	$0/0	$0/0	$0/0	$0/0
9b. Amount of Penalties Assessed (Total Dollars/IUs Assessed)	$0/0	$0/0	$0/0	$0/0
10. # of IUs Subject to Any Enforcement Action	9	14	207	230
11. Other Actions (Sewer Bans, Etc.)	0	0	0	0

I certify that the information contained in the Pretreatment Performance Summary Sheet is complete and accurate to the best of my knowledge.

AUTHORIZED REPRESENTATIVE

March 15, 2025

DATE

TABLE 7
(continued)

NARRAGANSETT BAY COMMISSION

BUCKLIN POINT DISTRICT

PRETREATMENT PERFORMANCE SUMMARY SHEET

Notes Regarding the Pretreatment Performance Summary Sheets

Note 1: Numbers in parentheses () reflect totals for users classified as significant for some time during the reporting period. Some of these companies are no longer classified as SIUs since they may have changed process operations eliminating discharges to the sewer.

Note 2: The categorical SIU that was not sampled by the NBC in 2024 discharges on a batch basis and decided to ship all process wastewater off-site for disposal in 2024. This was verified during inspections.

Note 3: One non-categorical SIU, John Rocchio Corporation, was not sampled by the NBC in 2024. This SIU conducted dewatering operations as part of Phase III of the NBC CSO Abatement project. Groundwater was not generated in quantities great enough to be discharged to the sewer from this location. Construction was completed at this location during 2024.

TABLE 8

NARRAGANSETT BAY COMMISSION

BUCKLIN POINT DISTRICT

REVISED PRETREATMENT REPORT SUMMARY SHEET

January 1, 2024 through December 31, 2024

POTW Name:	Narragansett Bay Commission (NBC)
NPDES Permit #:	RI0100072
Pretreatment Report Period Start Date:	January 1, 2024
Pretreatment Report Period End Date:	December 31, 2024
# of Significant Industrial Users (SIUs):	32 (37) (see Note 1)
# of SIUs Without Control Mechanisms:	0
# of SIUs not Inspected:	0
# of SIUs not Sampled:	2 (see Notes 2 and 3)
# of SIUs in Significant Noncompliance (SNC) with Pretreatment Standards:	3
# of SIUs in SNC with Reporting Requirements:	4
# of SIUs in SNC with Pretreatment Compliance Schedule:	0
# of SIUs in SNC Published in Newspaper:	5
# of SIUs with Compliance Schedules:	0
# of Violation Notices Issued to SIUs:	246
# 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):	17
# of CIUs in SNC:	3
Penalties Total Dollar Amount of Penalties Collected:	$0
# of IUs from which Penalties have been collected:	0

TABLE 8
(continued)
NARRAGANSETT BAY COMMISSION
BUCKLIN POINT DISTRICT
REVISED PRETREATMENT REPORT SUMMARY SHEET
January 1, 2024 through December 31, 2024

Local Limits Date of Most Recent Technical Evaluation of Local Limits:	February 21, 2020
Date of Most Recent Adoption of Technically Based Local Limits:	June 1, 2021

Pollutant	**Category** (see Note 5)	**Limit (mg/L)** (see Note 4)	**MAHL (lbs/day)** (see Note 4)
Arsenic	All	0.03	0.37
Cadmium	all	0.11	12.3
Chromium	all	2.77	55.3
Copper	all	1.20	42.9
Lead	all	0.69	31.6
Mercury	all	0.06	0.521
Nickel	11 & 15	1.62	8.4
	All others	0.5	
Silver	all	0.40	11.1
Zinc	all	1.67	37.7
Cyanide	11 & 15	0.50	5.1
	all others	0.40	
BOD	14	5 (see Note 6)	59,420
	25, 28, 34 & 36	10 (see Note 6)	
	23 & 29	20 (see Note 6)	
	33	75 (see Note 6)	
	32	570 (see Note 6)	
	all others	300	
TSS	14	5 (see Note 6)	58,440
	25, 28, 32, 34 & 36	10 (see Note 6)	
	23 & 29	20 (see Note 6)	
	33	75 (see Note 6)	
	all others	300	
Ammonia (see Note 7)	33	10 (see Note 6)	7,440
	32	300 lbs/day	
	all others	50	
Total Nitrogen (see Note 7)	33	10 (see Note 6)	7,440

Notes Regarding the Revised Pretreatment Report Summary Sheets

Note 1: Numbers in parentheses () reflect totals for users classified as significant for some time during the reporting period. Some of these companies are no longer classified as SIUs since they may have changed process operations or have ceased operations eliminating discharges to the sewer.

Note 2: The categorical SIU that was not sampled by the NBC in 2024 discharges on a batch basis and decided to ship all process wastewater offsite for disposal in 2024. This was verified during inspections.

Note 3: One non-categorical SIU, John Rocchio Corporation was not sampled by the NBC in 2024. This SIUs conducted dewatering operations as part of Phase III of the NBC CSO Abatement project. Groundwater was not generated in quantities great enough to be discharged to the sewer from this locations. Construction was completed at this location during 2024.

Note 4: Local limits proposed in February 2020 became final and enforceable on June 1, 2021. The limits and MAHLs in the table are the limits in effect in 2023.

Note 5: Category descriptions can be found in CHAPTER III

Note 6: BOD, TSS, Ammonia and Total Nitrogen limits are in lbs/1000 gallons for these categories.

Note 7 Ammonia and Total Nitrogen limits are seasonally enforceable from May 1st through October 31st.

II. PROGRAM ADMINISTRATION

RIPDES Permit Numbers

On September 29, 2017, the Rhode Island Department of Environmental Management (DEM) issued new or revised RIPDES permits to both the Field's Point and Bucklin Point facilities. The final permits became effective on December 1, 2017. The RIPDES permit number for Field's Point is RI0100315 and the RIPDES permit number for Bucklin Point is RI0100072. These permits specified the stringent seasonal total nitrogen limits of 5.0 ppm of both facilities. In addition to specifying the nitrogen permits limits the new permits also imposed many new requirements including requirements dealing with climate change resiliency and public notification. The NBC requested and received a stay of several new requirements. Throughout 2018, the NBC worked with DEM to resolve these issues. In January 2019, the NBC and DEM entered into a Consent Agreement (CA), RIA-424. The CA addressed the new stringent limits and other requirements that had been stayed in 2018. On March 20, 2019 DEM issued final permit modifications for both facilities. Further discussion on the permits can be found in CHAPTER V.

Personnel

The control and reduction of toxic and nuisance discharges to the sewer system falls under the Environmental Science and Compliance (ES&C) Division. The ES&C Division works closely with and relies upon the resources of many other NBC sections to achieve its goal of protecting the two NBC treatment facilities and ultimately Narragansett Bay. From the wastewater operators that report unusual influents to the legal staff that issues escalated enforcement actions against violators, environmental protection is a team effort at the NBC. The organizational plan for the NBC is provided in FIGURE 2, while the organizational plan for the ES&C division is provided in FIGURE 3.

The ES&C Division consists of the Pretreatment, Environmental Monitoring (EM), Laboratory, and Technical Analysis & Compliance (TAC) sections. ES&C is responsible for developing, implementing, and performing source reduction and control activities and programs for the NBC. The Pretreatment Section works to control the discharge of toxics through regulatory and user educational mechanisms, while Pollution Prevention staff achieve pollutant reductions through user education efforts and by providing free technical assistance. These activities rely on the services and expertise of the EM and Laboratory Sections. The EM Section conducts permitted user, river, treatment facility, and manhole monitoring activities and is responsible for logging and preparing data reported on samples analyzed by the Laboratory Section. The TAC Section analyzes all types of data and submits regulatory reports necessary to ensure agency compliance.

During 2024, there were several personnel changes in the Pretreatment Section. In March, Caitlyn Vallee accepted a position with the TAC Section as an Environmental Sustainability Specialist vacating her Pretreatment Inspector III position. Jared Urban was promoted to fill this position in June, leaving his Pretreatment Inspector II position vacant. Victoria Dinh was promoted to this position in August, leaving her Pretreatment Inspector I position vacant. Jayna McCarvill accepted a position in the private sector in June vacating her Pretreatment Inspector I position. In addition to these two vacant positions, there was an unfilled Pretreatment Inspector I at the beginning of 2024. These three vacant Pretreatment Inspector I positions were filled by Alejandra Tobon in August, Rebecca Songolo in December and Daniel Heu in January 2025. At the time of the submission of this report, the Pretreatment Section was fully staffed.

There were several personnel changes that occurred in the EM, TAC and Laboratory sections during 2024. These changes include the creation of positions, title changes and staff promotions and position changes.

FIGURE 2
Narragansett Bay Commission

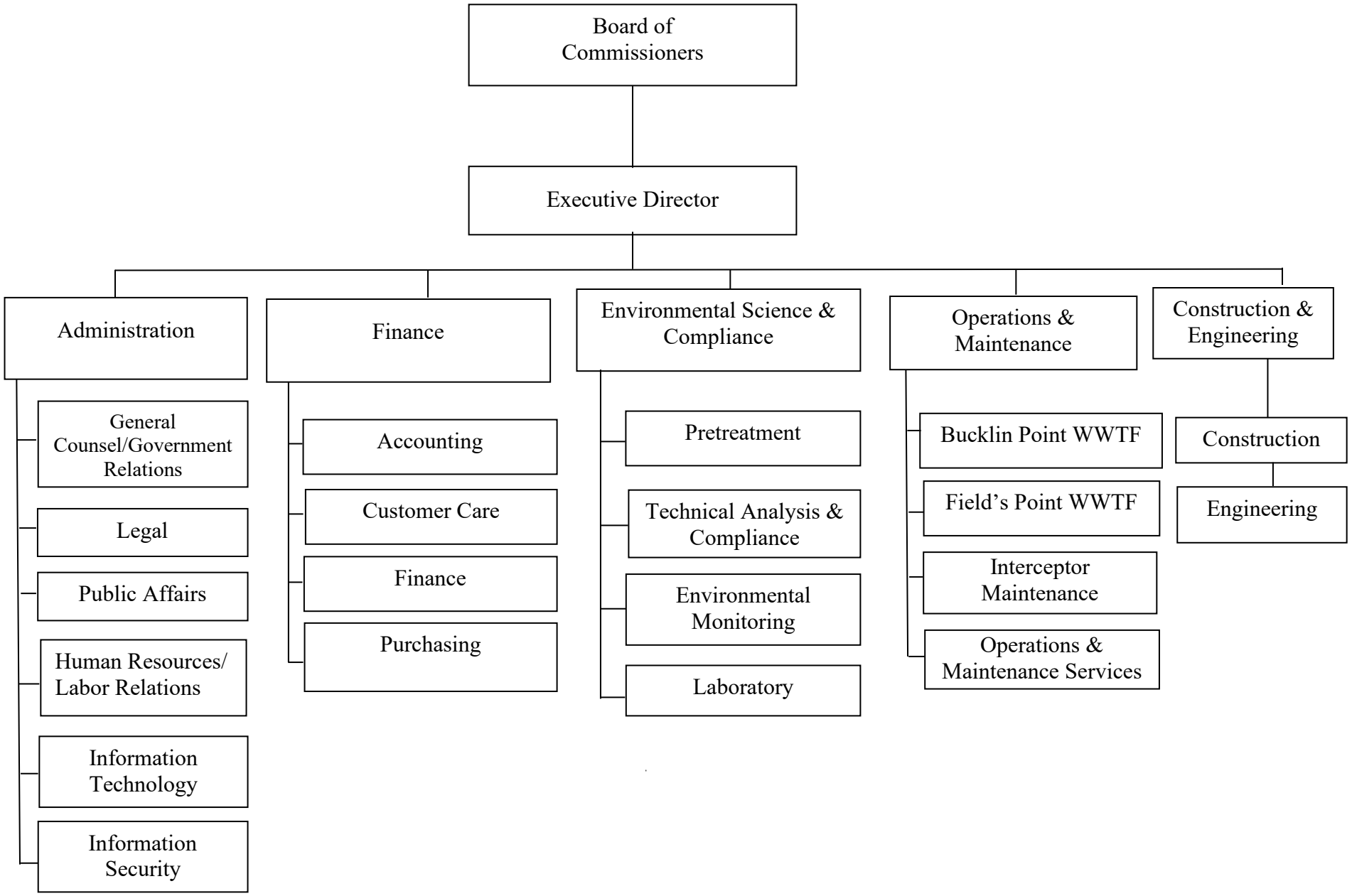
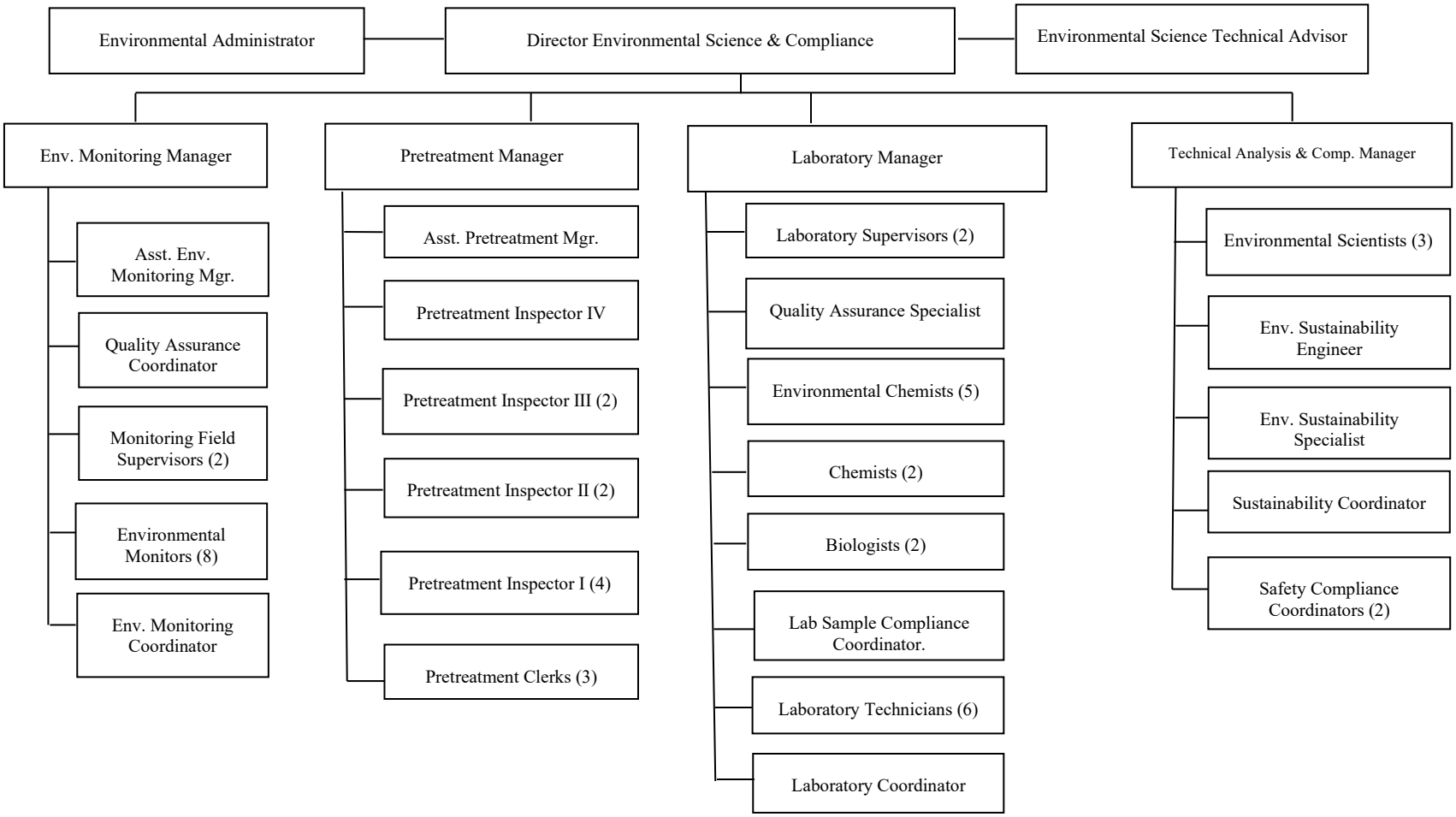


FIGURE 3
Narragansett Bay Commission
Division of Environmental Science & Compliance
March 15, 2025



Staff Training

The NBC provides extensive training to its employees and has a tuition reimbursement program to assist employees in furthering their education. During 2024, staff received training by attending seminars, workshops and classes in many areas including safety, technical and office productivity.

The NBC places a high value on the safety of its employees. Therefore safety training is provided to all personnel and in many cases this training is mandatory for certain positions. The following lists the safety trainings provided in 2024:

- Environmental Health & Safety Awareness
- HazCom/Right-to-Know Training
- Healthy Back, Slips, Trips and Falls
- Confined Space Entry Training
- Boating Safety Training
- Gas Meter Training
- SIU/Manhole Sampling Safety Training
- Dangers of Boating in Winter Training
- Hearing Protection & Conservation Training
- Supervisor Safety Awareness Training
- Boat Operation & Navigation
- Active Shooter & Workplace Violence
- Workzone Safety Training
- Infectious Materials Exposure Control Program Training
- CPR/AED/First Aid
- Fire Prevention
- Defensive Driving
- Spill Tracking Training

To ensure that staff can adequately perform their job functions, specialized technical training is provided. Staff often suggests topics for training. The following is a list of the technical trainings provided to Pretreatment, EM, TAC and Laboratory personnel during 2024:

- 24-hr HAZWOPER Training
- 8-hr HAZWOPER Refresher Training
- Spill Prevention Control & Countermeasures Plan/Storm Water Management Plan Training
- Boat Operation Training
- Map Reading
- Biological Nutrient Removal

ES&C staff is encouraged to attend conferences and workshops to educate themselves on current and emerging issues in the wastewater and environmental fields. The technical conferences and workshops that were attended in 2024 are as follows:

- 2024 National Association of Clean Water Agencies (NACWA) Pretreatment & Pollution Prevention Conference
- 2024 NACWA Virtual Pretreatment Workshop
- EPA Electronic Pretreatment Annual Reports

- RIPDES Multi-Sector General Storm Water (MSGP) Reissuance Informational Workshop
- EPA Webinar-What Does Your Permit Say? A look at Pretreatment & Biosolids Requirements for POTWs
- 2024 New England Regional Pretreatment Coordinators Association (NERPCA) Conference
- Northeast Waste Management Officials Association (NEWMOA) Science of PFAS Conference
- Disaster Management for Water and Wastewater Utilities
- Simulating Coastal Ocean Acidification in Narragansett Bay-Role of Wastewater
- 2024 New England Water Environment Association (NEWEA) Conference
- NEWEA Spring Conference
- NACWA Virtual Workshop-Unmasking PFAS…Ensuring Informed Clean Water Decisions
- Caution! New Regulations on the Way PFAS Sampling is Complicated
- NEWMOA PFAS-Improving Risk Communication with the Public
- Methane Emissions from Wastewater Treatment
- RI Clean Water Association (RICWA) UV Disinfection Training
- E-learning Modules on Data Configuration for Sample Manager
- Workflow Development
- Therma Fisher Scientific Administrator
- Digestor Rehab Project Sampling Procedures
- Cyanide Sampling Standard Operating Procedures (SOP)
- Sampling for Microbiological Examination SOPs
- Quality Assurance/Quality Control Blank Sampling SOPs
- EPA Method 1633 PFAS Sampling Procedures
- Analytical and Quantitative Light Microscopy
- 2024 Water Environment Federation Technical Exhibition & Conference (WEFTEC)
- 2024 Storm Water Innovation Expo
- NEWMOA PFAS Webinar-Investigating Wastewater & Septic Systems as the Source

The NBC provides 24-hour HAZWOPER training to all new Pretreatment, EM, TAC and Laboratory personnel. The HAZWOPER training program is required by OSHA of all emergency response personnel that may be first responders to chemical spills or who may work at hazardous waste sites. This training includes hands-on use of Self-Contained Breathing Apparatus (SCBA) equipment, respirators, personal protective equipment, air and water monitoring equipment, etc. Staff members were instructed in First Aid, CPR, confined space entry, hazardous waste handling, toxicology and spill and hazardous waste site control and coordination.

An eight-hour HAZWOPER recertification training session is provided annually to staff that have previously completed the 40-hour or 24-hour HAZWOPER training programs. The eight-hour recertification training session is required by OSHA annually as a refresher class. The recertification program covers many topics, such as incident command, confined space entry, spill tracking, boom deployment, personal protective equipment, use of air monitoring equipment, CPR/AED and first aid.

In order to ensure productivity remains efficient and of high quality, staff participate in many administrative trainings. The trainings that staff participated in during 2024 are as follows:

- Budgeting Basics Workshop
- Sexual Harassment: Prevention & Response
- Advanced Leadership Training
- Microsoft Office
- ADP Workforce Now Training
- Paymentus Electronic Payment System
- Performance Acceleration
- Online Security Awareness Trainings
- Sample Manager Training
- Google Maps Training

In addition to attending trainings, workshops and seminars, ES&C staff also provide technical training for other sections of the NBC as well as assist other agencies with developing and training on inspection skills. The following trainings were conducted by ES&C staff in 2024:

- Kerry Britt, Pretreatment Manager, conducted the required annual Spill Prevention, Control & Countermeasures Plan/Storm Water Management Plan training in December to both Bucklin Point and Field's Point treatment plant personnel and EM staff.

ES&C staff also participate in the NBC tuition reimbursement program for college level courses. Staff enrolled in the following classes in 2024:

- Financial Accounting
- Personal Finance

NBC Toxics Reduction, Control and Monitoring Program Budgets

The NBC is committed to protecting the two wastewater treatment facilities and Narragansett Bay from toxic discharges. This pledge to protect the environment is evidenced by NBC continued commitment to ensure adequate staffing and funding levels for the ES&C Division as necessary to ensure environmental protection. The ES&C Division budget for fiscal year 2025 (FY25) was $7,193,266. The FY25 ES&C Division budget allocated $6,008,682 or 83.5% to personnel costs.

The approved FY25 Pretreatment budget was $1,270,761, a 2.6% decrease from the FY24 budget of $1,304,140. The FY25 Pretreatment budget allocated 97.3%, or $1,235,911, to personnel costs.

The budget for the EM Section in FY25 was $1,802,800 of which 83.5% or $1,505,175 was attributed to personnel expenses. The FY25 EM budget increased by 11.5% from the previous year.

The approved TAC budget for FY25 was $1,367,340. The approved FY25 Laboratory budget was $2,752,365. Personnel costs associated with the TAC, and Laboratory budgets were 91.8%, and 73.1% respectively.

In 1983, the R.I. General Assembly passed Public Law 1983, Chapter 235 which required that the NBC begin direct billing of sewer users effective July 1, 1985 and that all sewer use rates be subject to review and approval by the RI Public Utilities Commission (PUC). On July 1, 1995, a new permit fee rate structure approved by the PUC became effective to ensure recovery of Pretreatment costs. These rates were increased in 2003 in accordance with a PUC Rate hearing. After completing a study in 2019 it was determined that the annual permit fee structure was no longer needed. The consumption rates for industrial and commercial users were slightly increased and permit application fees were implemented to ensure the Pretreatment Program is adequately funded. The rates and fees were approved by the PUC and went in to effect on July 1, 2019. In 2024, $75,960 in application fees was collected. The application fee structure is provided in CHAPTER III.

Pretreatment Information Management Computer System

The Pretreatment software system was completely developed in-house by the NBC Information Technology (IT) Section. User Wastewater Discharge Permits and Zero Process-Sanitary Discharge Permits are uploaded to the Pretreatment System and can be viewed on all desktop computers. The software also allows entry of photographs of users sampling locations, pretreatment systems and surveillance manholes to be uploaded to the system. The Laboratory purchased and implemented a new Laboratory Information Management system (LIMS) in 2012. IT staff wrote a program to ensure LIMS would interface with the Pretreatment system to ensure there was no loss in data transfer. During 2021, IT staff rewrote the interface program in response to upgrades that were made to LIMS.

Throughout 2024 Pretreatment and IT staff continued to optimize the Pretreatment System which had been upgraded in 2016. The upgrade improved the functionality and efficiency of the system. The upgraded system can be accessed on iPads. In addition staff can access mapping apps directly from the software. During 2024 Pretreatment staff will continue to work with IT to enhance the system. These enhancements include pages to track manhole data, and industrial area inspection data.

In August 2020, DEM gave preliminary approval for local limits that include mass-based limits. Pretreatment and IT staff began working on upgrading the Pretreatment System to be able to compare analytical results submitted by users to the new limits. The NBC Rules and Regulations were revised to incorporate the new local limits. The revisions were approved by DEM and the Rhode Island Secretary of State's Office and became final and enforceable on June 1, 2021. The upgrades to the Pretreatment System were in place and functioning when the new local limits became enforceable.

The Pretreatment software system was developed to track the requirements specified by the DEM in the RIPDES permits issued to the NBC. The Pretreatment software package has the following capabilities:

- Ability to track users in multiple drainage districts with different local limits and analyze the user data either separately or collectively.

- Ability to create a file for each user containing information pertinent to the user such as company name, address, permit number, company contacts, compliance status, solvents and chemicals used, user classification, user category, water usage, permit history, inspection history, the key manhole that the user discharges to, sample locations, monitoring requirements, reporting requirements, etc.

- Automatically generate form letters, based on data entered into the system, to notify users that are not meeting standards or have failed to submit monitoring results and certifications.

- Subroutines that summarize compliance monitoring and other user requirements and print the data in a format suitable for inclusion in the annual report.

- Maintain a user requirements file for tracking of user compliance with administrative orders, compliance schedules, submittal due dates, and other requirements that are issued to users to ensure that user requirements are met on time. Notices of Violation are generated automatically to notify the user of noncompliance with specified deadlines.

- Ability to maintain files of NBC and EPA pretreatment standards and compare monitoring results with these standards to automatically generate a Notice of Violation form letter notifying user of Failure to Meet Standards.

- Subroutines to review monitoring data to determine a user's compliance with standards for any time period specified. These subroutines are used to determine the "List of Firms in Significant Non-Compliance" for exceeding discharge standards 66% of the time or the EPA TRC value of 1.2 times the standard for metals and cyanide and 1.4 times the standard for oil and grease, biochemical oxygen demand and total suspended solids 33% of the time.

- Ability to send out mailings to specific users or various categories or classifications of users to notify them of changes in standards, requirements, etc.

- Subroutines that allow input, output, tracking and maintenance of a list of all inspections performed and the type of the inspection conducted for any specified reporting period.

- Ability to run an "EPA Counts" program that will review and analyze all user data for any specified time period and print out pertinent data that must be routinely reported to the EPA and the local control authority.

- Subroutines that track worker performance, such as number of inspections and meetings conducted, permits written, number of active assigned users, and the number of days required by the worker to process user submittals.

- Ability to enter industrial and sanitary manhole monitoring data and create reports based upon this data.

- Ability to track and print out any changes in user classification from significant to non-significant status or vice versa, the date of the change, and the inspector that made the change.

- Ability to print out a report of all companies with the number of batch, non-batch, and pH violations for any specified reporting period.

- Ability to print out a list of all companies indicating the number of months since the last sampling or non-sampling inspection.

- Subroutines that track the number of user parameter violations and analyze and track pollutant loadings for various classes of users.

In 2018 the software system was programmed to give Pretreatment staff the ability to enter schedules to track the submittal of required certifications including Certification of No Discharge, Certification of Compliance with Dental Amalgam Best Management Practices, Meter Calibration Certification and Cooling Tower Chemical Certification. Prior to this programming being put online, staff had to track these submittals by using other methods and custom tailor computer generated Notices of Violation if necessary.

In 2018 the NBC requested and received a minor modification to the Pretreatment Program to allow electronic signatures on permit applications. Throughout 2024, Pretreatment and IT staff worked on the development of permit applications that can be completed online and submitted electronically. IT staff created electronic permit applications on a third party platform that meet the needs of the Pretreatment Program along with maintaining user security. Throughout 2024, IT worked with Finance staff to develop a platform for customers to pay their consumption fees online. This platform was extended to allow Pretreatment permit application fees. Links on www.narrabay.com have been created and will go live in early 2025.

Public Information and Education Methods

One of the most effective means of ensuring user compliance is through continued user education regarding environmental problems, NBC programs and ever-changing regulations. The NBC is committed to user education and public information. The NBC Public Affairs Office, in conjunction with Pollution Prevention and Pretreatment staff continually inform users of various NBC activities. The NBC uses several means for providing public education about the goals, requirements, and accomplishments of the NBC source reduction and control programs. These include the following:

- Mailings to users informing them of pretreatment requirements;
- Newspaper and Magazine Articles, Public Notices, and various NBC newsletters;
- Development and distribution of educational fact sheets and technical bulletins;
- Public Meetings, Workshops, and Hearings;
- Displays at Public Events;
- Social Media outlets, such as Facebook, Instagram and YouTube;

During the past twelve months, the NBC used all of these means to keep users and the community informed of the requirements, activities and accomplishments of the NBC source reduction and control program. Activities in each of the above-listed categories are described in the following paragraphs.

Mailings

During 2024, the NBC sent ten informational letters to various categories of regulated users located in the two districts. TABLE 9 describes each of these informational letters.

TABLE 9
2024 Informational Letters

Issue Date	Description
January 8, 2024	This letter was issued to all permitted septage haulers to transmit vehicle identification stickers and notify them discharges would not be permitted without a valid sticker.
February 8, 2024	This letter was sent to all permitted users announcing the 28th annual Environment Merit Awards and invited them to nominate themselves for an award.
March 8, 2024	This letter was issued to all SIUs notifying them they were classified as SIUs during 2023. This letter reminded these companies of the reporting requirements outlined in 40CFR§403.12.
March 8, 2024	This letter was issued to all SIUs congratulating the 21 companies that achieved perfect compliance for the 2023 review period.
March 12, 2024	This letter was issued to all industrial users and notified them of EPA SNC criteria used by the NBC and outlined permitting and reporting requirements.
April 15, 2024	This letter was issued to all industrial users published as being in Significant Non-Compliance (SNC) on February 29, 2024. An invoice for their portion of the notice was included with the letter.
June 6, 2024	This letter was sent to all industrial users notifying them prohibited substances should not be discharged to the sewer system during the holiday shut down and clean-up operations. The letter warned users that civil and criminal penalties would be strictly enforced against violators caught illegally dumping.
October 11, 2024	This letter was issued to all facilities utilizing #4, #5 or #6 fuel oil. The letter recommended the companies inspect their heating systems prior to seasonal start-up of the system to prevent accidental releases of fuel oil to the sewer.
November 22, 2024	This letter was sent to all industrial users notifying them prohibited substances should not be discharged to the sewer system during the holiday shut down and clean-up operations. The letter warned users that civil and criminal penalties would be strictly enforced against violators caught illegally dumping.
December 30, 2024	This letter was issued to all permitted septage haulers to transmit vehicle identification stickers and notify them discharges would not be permitted without a valid sticker.

Newspaper and Magazine Articles, Public Notices and the NBC Newsletter

The NBC routinely issues press releases on its activities and discusses events relating to pretreatment and other environmental matters with reporters. Articles pertaining to the NBC have appeared in newspapers and magazines over the past year relating to:

- Educational workshops, meetings and articles by the Pretreatment and TAC Sections;
- Articles regarding NBC personnel;
- NBC Progress on the Combined Sewer Overflow (CSO) project;
- Public and community outreach projects;
- Capital Improvements for NBC facilities;
- Water Quality;
- Permitting Issues;
- NBC Energy Projects.

Copies of each of the aforementioned newspaper and magazine articles are provided in ATTACHMENT VOLUME I, SECTION 1. The NBC also published numerous Public Notices regarding the following topics:

- Public Notice listing the names of firms in Significant Non-Compliance;
- Public Notice listing the names of Significant Industrial Users in Perfect Compliance;
- Public Notice announcing the NBC Environmental Merit and Regulatory Compliance Award winners;
- Public Notices of Rate Filing and Public Hearings regarding various NBC projects and informational meetings.

In addition to public notices, newspaper and magazine articles, the NBC also publishes notices requesting proposals and qualifications, issues press releases, publishes bill inserts which are sent to all permitted users, and develops educational brochures and fact sheets. The NBC bill inserts inform the users of various NBC activities including: improvements at the treatment facilities, billing activities, reductions in toxic loadings, water conservation, and pollution prevention. Copies of the 2024 public notices and NBC newsletters are included in ATTACHMENT VOLUME I, SECTION 1.

Public Relations & Outreach Events

Public participation and outreach has played an essential part of fulfilling the challenging goal of increasing public awareness and understanding of wastewater treatment. A summary of this year's highlights include:

- *Facility Tours* – Public tours were suspended in March 2020 due to the COVID pandemic. However, in the spring of 2021, a limited number of socially-distanced tours were allowed. Tours of the facilities surpassed to pre-pandemic levels in 2024. These visitors ranged from school children to university students to engineers. The NBC also created a virtual tour of the treatment plants on YouTube (https://www.youtube.com/watch?v=WN25vVYeLII&t=222s) to bring the tour experience to anyone with an internet connection. The NBC also participated in RI Clean Water Week offering tours of the Field's Point treatment plant to the general public.

- *Maintaining a Presence on the World Wide Web (**www.narrabay.com**)* - To further improve communications with our customers, the NBC continued to enhance its website. Performance Statistics relating to the NBC Combined Sewer Overflow (CSO) and wind turbine projects are regularly updated on the site. Full documentation of the re-evaluation stakeholders process for Phase III of the CSO Project was published on the website as well. The NBC continued weekly updates of its water quality website "Snapshot of Upper Narragansett Bay". This website contains fact sheets, monitoring and data reports regarding water quality. The public is able to easily download all NBC receiving water monitoring data. In 2021, the NBC launched a website dedicated to the CSO Phase III project at RestoredWatersRI.com which is regularly updated to reflect news about the project.

- *Advocacy for Clean Water* - In 2024, the NBC worked with over 1,600 wastewater treatment facilities nationwide to advocate for federal funding for clean water infrastructure. In response to the COVID pandemic, the NBC worked closely with the Rhode Island Congressional delegation, presenting the municipal perspective on the importance of an affordable and sustainable solution to our clean water requirements. These efforts resulted in key provisions in the Infrastructure Investment and Jobs Act, which passed Congress with bipartisan support in November.

- *Teaching Children About Water Conservation and Wastewater Treatment* - During 2024, the NBC continued to work with area schools to educate children about the impacts of pollution on water quality, using distance learning when necessary. During the 2023-2024 school year the NBC worked with fourteen schools and 850 students. The program, named NBC Watershed Explorers (NBCWE), uses in-classroom and in-watershed lessons that focus on water quality, renewable energy and environmental stewardship and awarding student achievement badges. In 2007, the program won a national public education award from the NACWA. In 2024, the NBCWE continued its popular summer camp, which also won a national public education award.

- *Celebrating the Importance of Narragansett Bay* - For the thirtieth year, the NBC sponsored its annual poster contest for elementary school students in kindergarten through sixth grade. Participation remained strong and several young artists enthusiastically illustrated clean water themes with colorful, original depictions of the importance of our water resources. Winners received a prize and had their artwork showcased in a 2024 calendar.

- *Student Internships* –This year, high school and college students gained experience in engineering, legal and laboratory procedures.

- *Career Opportunities Outreach* - Through the efforts of the NBC Affirmative Action Committee, the NBC delivered career day presentations to students in Providence, Cumberland, and Central Falls. The NBC also hosted Central Falls High School for a career day trip at the main NBC campus.

- *Supporting Community Programs* - Each year, the NBC solicits funding ideas from employees and the public for the monies collected from environmental violators. This year, 16 community organizations were awarded Earth Day clean-up grant funds to support local efforts.

- *Honoring Industrial and Commercial Users for Environmental Performance* – In 2024, the NBC recognized 21 companies in the service district with Environmental Merit Awards for Perfect Compliance with regulatory requirements. The companies were honored at the annual Environmental Merit Awards Breakfast. Additional information regarding this program is provided in CHAPTER VII.

- *Keeping Our Stakeholders Informed* - The NBC Facebook pages, and Instagram continue to offer up-to-the-minute information on construction, water quality monitoring, and public events. With the launch of the CSO Phase III-specific website RestoredWatersRI.com, the NBC included informational videos on the project needs, scope, and benefits. In addition, the NBC continued to make available its 22-minute DVD about the CSO Project, entitled *The Biggest Project You'll Never See* and the 30-minute DVD about the NBC *Environmentalism at Work.* The DVDs are available free to the public and streamed on NBC's YouTube Channel.

- *Celebrating the Connection Between Clean Water and Green Energy* – In 2024, approximately 72.0% of the energy used by the NBC was generated by the three 1.5 megawatt wind turbines, located at Field's Point, three NBC owned wind turbines, located in Coventry, RI and solar arrays in Richmond, RI. The wind turbines serve as a visual reminder to all Rhode Islanders of the NBC leadership in sustainable energy and clean water.

- *Bi-lingual Information* – During 2024, the NBC continued distributing Spanish language versions of its billing and collections information.

- *Casual Days* - Throughout the year, the NBC continued to participate in a casual day program. The proceeds benefited various local and state organizations, such as the Gloria Gemma Breast Cancer Research Foundation and ALS-Rhode Island.

- *State Employee Charitable Appeal* - NBC employees participated in the 2024 State Employees Charitable Appeal (SECA) and raised over $10,000 for a host of worthwhile, appreciative charitable organizations.

- *Enhanced YouTube Channel* - The NBC YouTube channel features virtual WWTF tours and informational videos on CSO Phase III. The channel also features benthic monitoring videos, showing creatures along the floor of Narragansett Bay. In addition, the NBC feature video as a Utility of the Future can be found on the channel.

- *Residential Grease Control Program* – In 2024, the NBC enhanced its award-winning campaign to educate school children on the impacts of cooking grease on the sewer system and how to dispose of it. An eight-foot diameter pipe featuring Mr. Can is now a part of the facility tours at Field's Point. Mr. Can continues to be a part of the NBCWE underscoring the importance of NOT flushing disposable wipes.

~Water Conservation Education Programs

The NBC makes great efforts to educate its users about water conservation. The NBC has a non-regulatory Water Audit and Technical Assistance Program, which is available to its commercial and industrial sewer users. Additional information about this program is provided in CHAPTER VII.

NBC Speakers Bureau

The NBC has a well-established Speakers Bureau to address the many requests received to speak at schools, workshops and meetings, both locally and nationally. During 2024, NBC personnel gave many presentations to educate public and professional organizations about the NBC and its programs and accomplishments. The following paragraphs detail these activities:

Pretreatment Presentations

~National Association of Clean Water Agencies (NACWA)

The 2024 NACWA Pretreatment and Pollution Prevention Conference was held in Pittsburgh, PA on May 15th through May 17th, 2024. Kerry Britt, Pretreatment Manager, gave a presentation on Pretreatment PFAS Requirements - EPA Region 1, Rhode Island and Narragansett Bay Commission. In addition, she served as a facilitator and moderator throughout the workshop.

NACWA held a virtual Pretreatment workshop on December 3rd and 4th 2024. Kerry Britt, Pretreatment Manager, served as a facilitator and moderator throughout the workshop.

~New England Regional Pretreatment Coordinators Association (NERPCA)

The 2024 NERPCA conference was held on October 29th through 31st, 2024 in Nashua, NH. During the conference, Kerry Britt, Pretreatment Manager, gave presentations on Mass Based Limits for High Strength Waste and Conducting Significant Industrial User Inspections. In addition, she conducted the NERPCA Business meeting and served as a facilitator for roundtable discussions.

~Industrial Training – Tanury Industries

On July 9, 2024, Kerry Britt, Pretreatment Manager, gave a presentation to the employees of Tanury Industries on the impacts of metal finishing wastewater on the sewer system and treatment plant.

Water Quality Presentations

~ New England Estuarine Research Society (NEERS)

Abigail Ernest Beck, Environmental Scientist II, gave a presentation on urban river bacteria at the NEERS Spring Conference.

Professional Affiliations

The NBC has affiliated itself with many professional groups and organizations, both locally and nationally, to learn from these groups and to educate them about the NBC. The NBC is a member of the Providence Chamber of Commerce, the Northern Rhode Island Private Industry Council, the National Association of Clean Water Agencies (NACWA), New England Water Environment Association (NEWEA), the Water Environment Federation, American Electroplaters & Surface Finishers Society, and the American Academy of Environmental Engineers, to name a few. Various NBC staff routinely attend association meetings and conferences and often are speakers at such events.

III. INDUSTRIAL & COMMERCIAL USERS, PERMITS AND INSPECTIONS

User Classification System

Since the inception of the Pretreatment Program, the NBC has identified and inspected 9,498 different industrial and commercial users located within the two NBC sewer districts. During 2024 Pretreatment staff identified and entered information on 108 previously unknown users into the NBC Pretreatment database. Pretreatment users are categorized according to the classification system shown in TABLE 10. This classification system categorizes users in nine general categories. Each class of users is subdivided into more specific classes of users. Firms classified by the Pretreatment Section as industrial facilities may be listed in Categories 1 through 7, while commercial facilities can be classified in Categories 5 through 9. Users in Categories 1, 2 and 3 are of primary concern to the NBC Pretreatment Section as their discharges contain toxic and conventional pollutants that can have an impact on NBC facilities. Category 4 consists of users with the potential to discharge toxics. Category 5 users may have non-toxic discharges such as cooling water. Category 6 users have no discharges or potential for discharge to the sewer and Category 7 users have gone out of business or moved out of the district. Commercial users with the potential to discharge conventional pollutants are classified in Category 8, while commercial users with the potential to discharge toxic or prohibited pollutants are listed in Category 9.

Significant Industrial Users

In 1995, the NBC standardized its definition of Significant Industrial User (SIU) in both districts by modifying the NBC Rules and Regulations. This definition was essentially an adoption of the Field's Point SIU definition, and classifies a SIU as any industrial user that satisfies any one of the following criteria:

- Firm is subject to Federal EPA categorical standards;
- Firm discharges an average of 5,000 or more gallons per day of process waste water;
- Firm contributes a process waste stream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the NBC's Treatment Plant;
- Firm is designated as significant by the NBC on the basis that the user has reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

TABLE 10
NBC User Classification System
Industrial User Categories

Category 1: Industries subject to Federal EPA Categorical Standards.

10. Other Categorical Users
11. Electroplaters, Metal Finishers
12. Metal Molding and Casting
13. Organic/Inorganic Chemical Manufacturers
14. Pharmaceutical Manufacturers
15. Metal Formers
16. Steam Electric Power Generators
17. For Future Use
18. Centralized Waste Treatment Facilities
19. Transportation Equipment Cleaning

Category 2: Industries discharging toxic and/or prohibited pollutants, but who are not subject to Federal EPA Categorical Standards.

20. For Future Use
21. Tubbing/Vibratory/Mass Finishing
22. Chemical Transporters, Refiners, Recyclers, Manufacturers
23. Textile Firms
24. Printers
25. Industrial Laundries
26. Machine Shops/Machinery Rebuilding
27. Other Facilities Discharging Toxic and/or Prohibited Pollutants
28. Facilities Discharging Toxic and/or Prohibited Pollutants with High Conventional Pollutant Loads
29. Non-Textile Operations Using Pigments & Dyes

Category 3: Industries discharging or having the potential to discharge conventional pollutant (BOD, TSS, pH, oil and grease, fecal coliforms) loads in sufficient quantities to cause violation of RIPDES permit or local discharge limitations.

30. For Future Use
31. Landfill Operations
32. Aerogel Manufacturing with High Conventional Pollutant Loads
33. Wholesale Food Processing Operations with High Conventional Pollutants Loads
34. Manufacturers with High Conventional Pollutant Loads and Low Flows
35. Other Facilities Discharging Conventional Pollutants
36. Brewing & Distilling Operations
37. Automotive Maintenance/Service Facilities
38. Anaerobic Digestion Facilities with High Concentrations of Conventional Pollutants
39. For Future Use

TABLE 10
(Continued)
NBC User Classification System
Industrial User Categories

Category 4: Industries with sanitary or non-toxic discharges using solvents, toxic and/or hazardous chemicals that could potentially be discharged to the sewer.

40. Groundwater Remediation/Excavation Projects
41. Recycled or Disconnected Electroplating or Chemical Processes
42. Other Process Operations that are Disconnected or Recycled
43. Recycle Electroplating or Chemical Processes with Non-contact Cooling Water or Boiler Discharges
44. Other Recycled or Disconnected Processes with Cooling Water, Boiler, or other Discharges
45. For Future Use
46. Cooling Water Discharges with Solvents, Toxic and/or Hazardous Chemicals on site
47. For Future Use
48. For Future Use
49. Other Discharges with Solvents, Toxic and/or Hazardous Chemicals on site

Category 5: Industries discharging only sanitary wastes and/or non-toxic discharges.

50. For Future Use
51. Cooling Water
52. Boiler Blowdown/Condensate Discharges
53. Cooling Tower Discharges
54. For Future Use
55. For Future Use
56. For Future Use
57. For Future Use
58. For Future Use
59. Other Non-Toxic Industrial Discharges

Category 6: Dry industries with no wastewater discharges to the sewer using solvents, toxics and/or hazardous chemicals.

60. All users

TABLE 10
(Continued)
NBC User Classification System
Commercial User Categories

Category 7: Industries with no waste discharges to the sewer.

70. Septic System Discharger
71. Out of Business
72. Moved out of the District
73. Permit Expired/Not Renewed or Reissued
74. Proposed Discharges - Permit Not Issued
75. Accidental Discharges/Spills/Non-Permitted Discharge

Category 8: Commercial Users with the potential to discharge conventional pollutant (BOD, TSS, pH, oil and grease, fecal coliforms) loads in sufficient quantities to cause violation of RIPDES permit or local discharge limits.

80. Septage Haulers/Dischargers
81. Food/Fish/Meat Produce Processing (Wholesale)
82. Supermarkets (Retail Food Processing)
83. Parking Garages/Lots
84. Cooling Water/Groundwater/Boiler Discharges
85. Restaurants/Food Preparation Facilities
86. Commercial Buildings with Cafeteria and/or Laundry Operations
87. For Future Use
88. For Future Use
89. Other Commercial Facilities with Potential to Discharge Conventional Pollutants

Category 9: Commercial Users with the potential to discharge toxic substances, prohibited pollutants and/or conventional pollutants.

90. Hospitals
91. Cooling Water/Groundwater/Boiler Discharges
92. Laundromats/Dry Cleaners
93. Photo Processing
94. X-Ray Processing
95. Clinical, Medical, and Analytical Laboratories
96. Funeral Homes/Embalming
97. Motor Vehicle Service/Washing
98. For Future Use
99. Other Commercial Users with Potential to Discharge Toxic, Prohibited and/or Conventional Pollutants.

A list of the industrial and commercial users, separated by district, is provided in ATTACHMENT VOLUME II, SECTION 1. The users' category and designation as significant or non-significant is also provided in this listing. As of the date of submission of this report 9,498 industrial and commercial users have been identified through user surveys, 5,053 are still conducting business in the NBC service areas and 70 were classified as SIUs sometime during 2024. Of the 70 SIUs reported for 2024, there were 39 classified as categorical industries which are subject to both NBC and EPA regulations, and 31 significant non-categorical industrial users of the NBC sewer system. During this reporting period, six SIUs were reclassified to non-significant due to operational changes implemented within their facilities. These operational changes may range from installation of a wastewater recycle pretreatment system to the firm going out of business or moving out of the NBC district. Five firms were newly classified as significant during 2024. A listing of these firms, detailing the specific reason for reclassification, is provided in CHAPTER I.

Wastewater Discharge Permits

As of the date of this submission, the NBC has 1,900 Wastewater Discharge Permits in effect, which were issued to facilities located in the Field's Point and Bucklin Point drainage districts. Presently, 1,275 permits are in effect for users in the Field's Point district, while 625 permits are in effect in the Bucklin Point district. Discharge permits which are no longer in effect may have been terminated for one of the following reasons:

- The permit expired, was revised, and reissued.
- The firm has gone out of business (Category 71).
- The firm has moved out of the NBC District (Category 72).
- The firm's Wastewater Discharge Permit was terminated and reissued in a new classification to reflect operational changes.
- The firm has ceased process discharge to the sewer system (Categories 41, 42, 43, 44, 60 or 73).

TABLE 11 provides a summary of the number of permits issued and presently in effect by category of user for each district. Permits have been issued and are in effect for industries classified in 48 of the 77 categories listed in TABLE 10. During this reporting period, Pretreatment staff issued 480 permits to users located in the two districts. Of the 480 permits issued during 2024, there were 152 new permits issued to new commercial and industrial users and 328 permits were reissued to existing users because their old permit expired or changed process operations. A listing of the permits issued in 2024 is provided in ATTACHMENT VOLUME II, SECTION 2.

TABLE 11
Narragansett Bay Commission
Summary of Wastewater Discharge Permits in Effect

Category	Company	Field's Point District	Bucklin Point District	Total Permits In Effect
11	Electroplaters, Metal Finishers	22	14	36
12	Metal Molding And Casting	0	0	0
13	Organic Chemical Manufacturer	0	0	0
14	Pharmaceuticals	0	2	2
15	Metal Formers	0	1	1
16	Steam Electric Power Generating	0	0	0
18	Centralized Waste Treatment Facilities	0	0	0
19	Transportation Equipment Cleaning	0	0	0
21	Tubbing/Vibratory/Mass Finishing	2	3	5
22	Chemical Transporters, Refiners, Recyclers, Manufacturers	1	2	3
23	Textile Firms	1	6	7
24	Printers	7	5	12
25	Industrial Laundries	0	1	1
26	Machine Shops/Machinery Rebuilding	1	2	3
27	Other Firms Discharging Toxics	7	7	14
28	Facilities Discharging Toxic and/or Prohibited Pollutants with High Conventional Pollutant Loads	0	2	2
29	Non-Textile Operations Using Pigments & Dyes	0	2	2
31	Landfill Operations	1	0	1
32	Aerogel Manufacturing with High Conventional Pollutant Loads	0	1	1
33	Wholesale Food Processing Operations with High Conventional Pollutant Loads	18	8	26
34	Manufacturers with High Conventional Pollutant Loads and Low Flow	3	3	6
35	Firms Discharging Conventional Pollutants	3	4	7
36	Brewing and Distilling Operations	9	8	17
37	Automotive Maintenance/Service Facilities	16	5	21
38	Anaerobic Digestion Facilities with High Conventional Pollutant Loads	1	0	1
40	Groundwater Remediation/Excavation Projects	2	8	10
41	Regulated Electroplating Or Chemical Processes Disconnected Or Recycled	4	6	10
42	Other Regulated Processes That Are Disconnected Or Recycled	17	26	43
43	Recycle Electroplating Or Chemical Processes With Cooling Water Or Boiler Discharges	9	0	9
44	Other Recycle Processes With Non-contact Cooling Water Or Boiler Discharges	1	6	7
46	Cooling Water With Solvents/Toxics On Site	4	0	4
49	Firms With Solvents, Toxics, Etc. On Site	1	3	4
51	Cooling Water	3	1	4
52	Boiler Blowdown/Condensate Discharges	6	4	10
53	Cooling Tower Discharges	8	6	14
59	Other Nontoxic Discharges	1	3	4
80	Septage Haulers/Dischargers	1	14	15

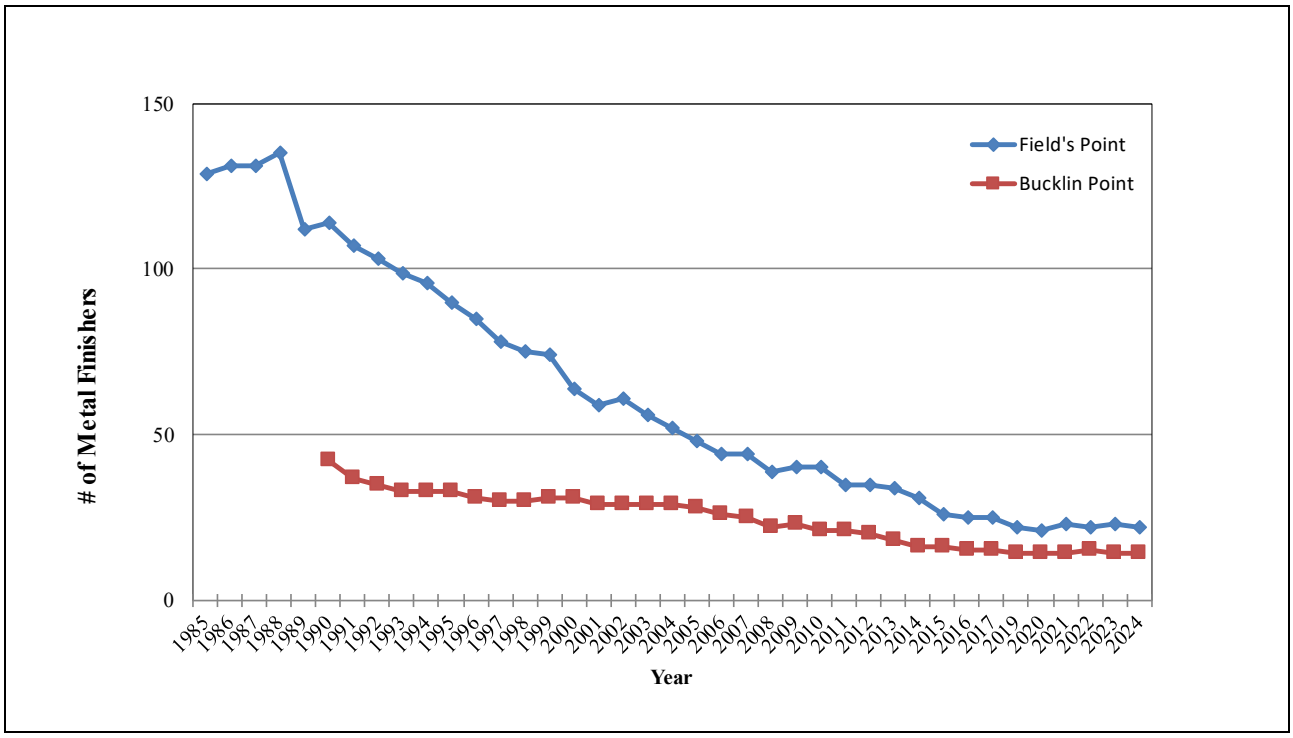
TABLE 11
(Continued)
Narragansett Bay Commission
Summary of Wastewater Discharge Permits in Effect

Category	Company	Field's Point District	Bucklin Point District	Total Permits In Effect
81	Food/Meat/Fish Produce Processing (Wholesale)	31	28	59
82	Supermarkets (Retail Food Processing)	27	14	41
83	Parking Garages/Lots	1	0	1
84	Cooling Water/Groundwater/Boiler Discharges	9	0	9
85	Restaurants/Food Preparation Facilities	650	265	915
86	Commercial Buildings With Cafeteria/Laundry	174	57	231
89	Other Commercial Users With Potential to Discharge Conventional Pollutants	14	5	19
90	Hospitals	10	0	10
91	Cooling Water/Ground Water/Boiler Discharges	0	0	0
92	Laundromats/Dry Cleaners	43	27	70
93	Photo Processing	3	0	3
94	X-Ray Processing	44	35	79
95	Clinical, Medical, And Analytical Laboratories	33	2	35
96	Funeral Homes/Embalming	13	7	20
97	Motor Vehicle Service/Washing	40	20	60
99	Other Commercial Users With Potential To Discharge Toxic Or Conventional Pollutants	34	12	46
	Total Permits in Effect	**1,275**	**625**	**1,900**

There were 10 permits revised and reissued to SIUs in the two districts during 2024, while two new permits were issued to this class of users. Six of the 10 revised permits were issued to categorical users during 2024, while the four remaining revised permits were issued to significant non-categorical users.

As can be seen from TABLE 11, the largest number of permits in effect are issued to the commercial restaurant and food preparation facilities classified in Category 85, followed by Category 86 permits which are issued to commercial buildings with cafeterias and/or laundry facilities. The next largest category of permitted users is the x-ray processing which includes dental facilities in Category 94. Facilities classified in Category 11 are the industrial users that contribute the majority of the toxic metal and cyanide loadings to the NBC treatment facilities due to the nature of the metal finishing operations they conduct. The dramatic decline of metal finishers in the Field's Point district since 1984 and in Bucklin Point since 1990 is clearly detailed in FIGURE 4. During 2024 the number of metal finishers in both districts decreased by one when compared to 2023.

FIGURE 4
Number of Metal Finishers vs. Time



The NBC issues Wastewater Discharge Permits to all sewer users that discharge non-domestic wastewater into the NBC system and is presently in the process of permitting the remaining non-significant commercial users located throughout the two NBC drainage districts. Copies of the various typical Wastewater Discharge Permits issued by the NBC are provided in ATTACHMENT VOLUME I, SECTION 2.

Permits issued by the NBC typically include the following conditions and requirements:

- A requirement that the user meet local and federal discharge standards at all times.
- Maintenance of a logbook requiring record keeping regarding the operation and maintenance of the pretreatment system, quantity of sludge generated, completed manifest forms, a list of all batch discharges, quantity of chemicals used to provide pretreatment, etc.
- Self-monitoring requirements regarding monitoring and reporting of effluent characteristics and concentrations.
- Reporting requirements for accidental discharges to the sewer system. The user is required to immediately notify the NBC of a spill into the sewer system and is required to file a written report within five (5) days of the incident.

- Submission of a Spill and Slug Prevention Control Plan and a Toxic Organic/Solvent Management Plan. The user is required to contain all spills within the facility as part of the Spill and Slug Control Plan. The Toxic Organic/Solvent Management Plan requires the user to detail process operations, perform a mass balance on the quantity of solvents used in the facility, to sample the waste stream to verify that no solvents are being discharged to the sewer system, and to provide containment of all solvents in case of a spill. Copies of these documents are provided in ATTACHMENT VOLUME I, SECTION 3.

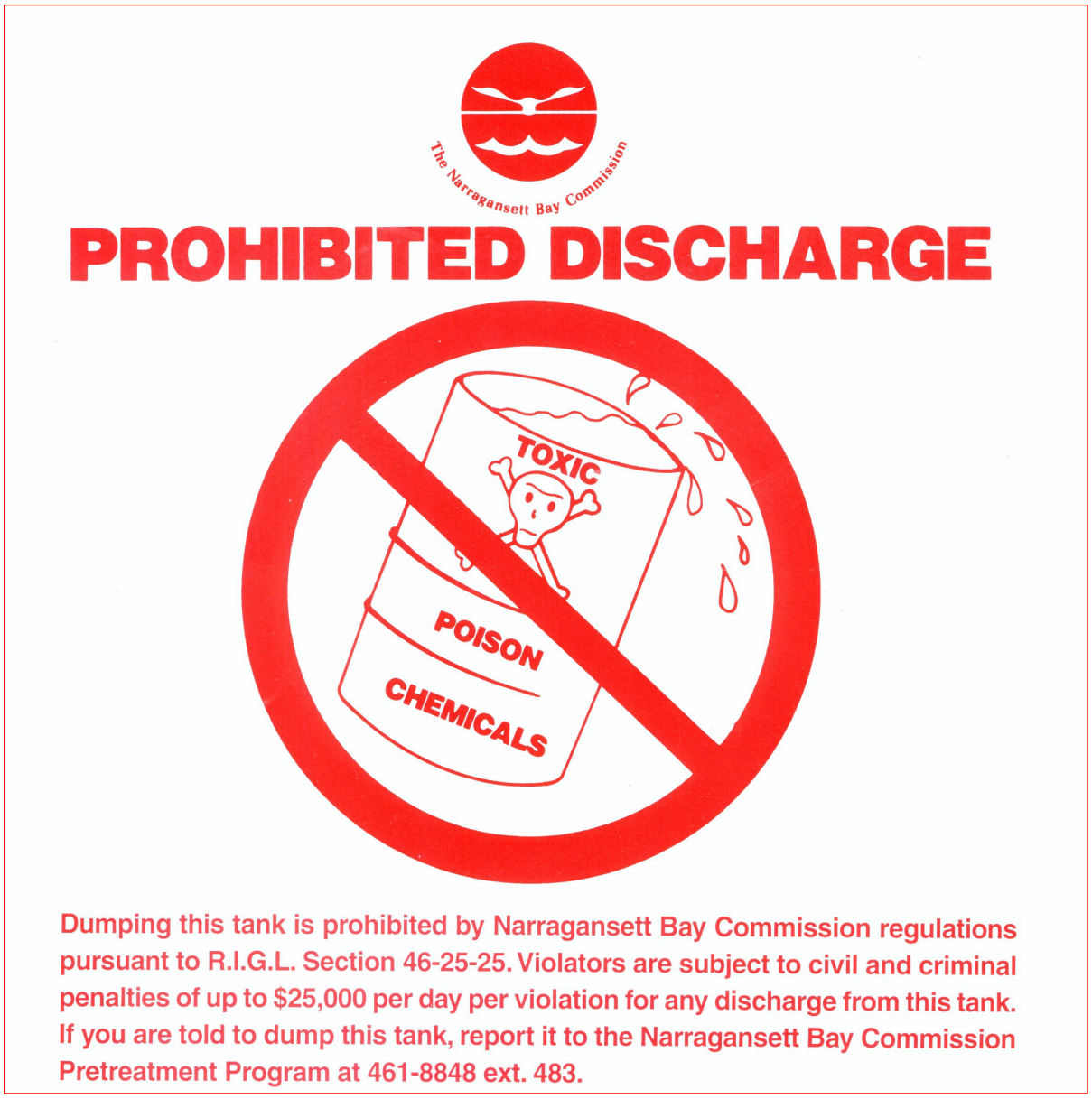
- A prohibition against batch discharges without prior written approval from the NBC to prevent the discharge of concentrated solutions to the sewer system. The NBC developed the prohibited discharge sticker shown in FIGURE 5. This sticker is affixed to all tanks which the industrial user is prohibited from discharging.

- Administrative provisions regarding inspection powers, retention of records, civil and criminal liability and associated penalties, selling the facility, revocation and transferability of the permit, etc.

Tanks at a shutdown plating shop are stickered "PROHIBITED DISCHARGE"

FIGURE 5

PROHIBITED DISCHARGE STICKER



Most permits are issued for a five-year period, but may be issued for shorter periods of time. Permits may be revoked, after notice and hearing, for violations of the NBC Rules and Regulations. Beginning in late 2018 Pretreatment staff worked with the NBC Finance Section to evaluate the optimal way to recuperate the costs of the Pretreatment Program while not placing an excessive financial burden on business. It was determined the annual permit fee structure was burdensome. A study determined that slightly increasing the consumption fees for industrial and commercial users and implementing permit application fees would ensure the Pretreatment Program is adequately funded. The rates and application fees were approved by the PUC and went into effect on July 1, 2019. In 2024, $75,960 was collected in Pretreatment Permit Application fees. The NBC application fees are provided in TABLE 12.

TABLE 12
Narragansett Bay Commission
Pretreatment Permit Application Fees

Category	Fees
Significant Industrial Users	$500.00
Industrial Users	$300.00
Commercial Users	$140.00

Zero Process Discharge Wastewater Systems

During 2024, there were 69 users in the two NBC districts operating facilities which have eliminated or significantly reduced their process discharges to the sewer system through the installation of closed loop or zero discharge systems. Although still conducting operations which generate wastewater containing toxic materials, this wastewater is treated and reused in the process operation, resulting in no discharge of industrial process wastewater, or in some cases, insignificant discharges to the sewer system consisting primarily of boiler condensate or non-contact cooling wastestreams. Once Pretreatment staff has verified that the process wastewater discharge has been eliminated or significantly reduced, the user is reclassified into Category 41 through 44 depending upon the type of recycle process operations conducted.

Part of an Ion Exchange System at a Permitted Zero Discharge Facility

Although an industrial user may cease discharging process wastewater into the sewer system by installing a wastewater recycle system, the firm will still be permitted and inspected by Pretreatment staff. Since the facility has sanitary sewer connections, it could still be a potential source of pollutant discharges into the NBC sewer system which could potentially contribute to a plant upset or a pass-through situation. For this reason, the Pretreatment Section routinely issues Zero Process Wastewater-Sanitary Discharge Permits to category 41 and 42 industries. Fifty-three facilities are presently classified in categories 41 and 42 and do not discharge process wastewater to the sewer system. Users with recycle process operations but still discharge condensate, boiler or cooling water wastestreams are issued discharge permits. There are 16 of these users which are classified in categories 43 and 44. Of the 69 users classified in categories 41 through 44, 29 facilities are permitted to operate zero process discharge wastewater recycle systems in the Field's Point district, while 38 users in the Bucklin Point district are permitted to perform zero discharge recycle operations. Prior to the issuance of a Zero Process Wastewater-Sanitary Discharge Permit, the NBC thoroughly notifies the industrial users of all DEM and RCRA requirements and the user must satisfy the following NBC requirements:

- Submit a Zero Discharge Permit Application.
- Submit a Facility Sewer Access Site Plan showing all sewer connections.
- Submit Process Operation Plans.
- Submit Pretreatment System Plans.
- Submit a Spill and Slug Prevention Control Plan.
- Seal all floor drains and cap off all process sewer access locations.
- Install prohibited dumping signs at all sanitary sewer connections.

Once all the aforementioned tasks have been completed by the user, the facility is inspected, and the Zero Process Wastewater-Sanitary Discharge Permit is issued. The Zero Discharge Permit requires the user to submit a written certification either monthly or biannually, depending upon facility process operations, listing water meter readings and certifying that no process discharges have occurred. Pretreatment staff use this water meter data to routinely calculate daily water usage. Deviations from the expected zero discharge water usage are promptly investigated by Pretreatment staff. In addition, unannounced inspections of every zero discharge firm are conducted at least twice annually. A copy of the Zero Process Wastewater-Sanitary Discharge Permit can be found in ATTACHMENT VOLUME I, SECTION 2.

User Survey Methods

The Pretreatment Program utilizes many methods to identify and locate new and previously unknown users of the sewer system. These NBC methods have been very successful at maintaining an accurate inventory of non-domestic regulated users and at ensuring that modifications to existing user facilities are quickly discovered. The following is a summary of the survey methods:

- *Newspaper Reviews* - The local newspapers are routinely reviewed to identify and locate new or previously unknown and unpermitted users. Review of the classified, business and new corporation sections of the local newspapers have allowed the NBC to successfully identify many new sewer users over the years. Form letters are issued to new corporations to alert them to NBC Rules and Regulations and permitting requirements. Routine reviews of the bankruptcy and auction sections of the newspaper alert Pretreatment staff to firms which may be in financial trouble or ceasing operations. This allows Pretreatment staff to be proactive at preventing illegal discharges from financially troubled firms. Such firms are promptly inspected, inventoried and required to comply with a rigid facility shutdown procedure. The NBC will often seal the sewer connections at these firms once operations have ceased to ensure that hazardous waste and chemicals are not illegally discharged into the sewer system.

- *Business Listing Website Reviews* - Pretreatment staff reviews business listing websites such as www.whitepages.com and www.yellowpages.com to identify new industrial and commercial users that may require regulation. Particular attention is given to reviewing categorically regulated user categories such as electroplaters, metal finishers, metal formers, etc.

- *Social Media Reviews* - Pretreatment staff routinely reviews social media websites such as Facebook and Yelp to identify any previously unknown industrial and commercial users. This survey method is particularly useful in identifying new food service establishments.

- *Intra-Governmental Agency, Building and Sewer Connection Permit Referrals* - The Pretreatment Section becomes aware of many new facilities through the building permit issuance process. New facilities under construction in the NBC districts must obtain a sewer connection permit and a discharge permit, if necessary, prior to beginning construction and/or process operations. Firms performing construction modifications to their buildings are referred to the NBC by the local building inspectors and must obtain NBC approval in order to obtain the necessary city or town building permit or certificate of occupancy. Local building inspectors, plumbing inspectors and inspectors from the Department of Health, DEM and EPA New England refer information to the Pretreatment staff regarding new or unpermitted users. This cooperative work effort has resulted in the permitting of many users over the years.

- *Industrial Area Inspection Program* - Regular inspections of industrial areas within the NBC service district are performed to identify new and possibly transient users of the NBC facilities. Each staff member is assigned several industrial areas located throughout the NBC districts. Staff members are required to inspect at least one industrial area per month to identify potential new nondomestic users of the NBC sewer system. During the industrial area inspections, staff members compile a listing of all unpermitted facilities located within the area and systematically inspect each unpermitted facility to determine whether a wastewater discharge permit is necessary based upon the operations performed, wastewater generated and discharged to the sewer system. A listing of each facility, the type of operations performed, and whether or not a wastewater discharge permit is necessary is maintained for each industrial area and is filed by the streets forming the boundaries of the industrial area. This procedure enables the NBC to track changes within individual mills and prevents duplication of efforts by ensuring that this information is continually updated. Industrial areas are routinely driven through and all industrial facilities in the area are cross-checked against the NBC Pretreatment database. Unknown or unpermitted users are promptly inspected and permitted, if necessary.

- *Public Information Programs* - Over the years, the NBC has routinely published public notices to alert NBC users of the need to obtain a wastewater discharge permit if specific operations are conducted.

  The NBC has also met with various user groups and held workshops that focused on educating any new class of users required to obtain a discharge permit.

NBC User Inspection Programs

One of the main objectives of the Pretreatment Program is to protect the NBC wastewater treatment plants from toxic discharges which could result in pass through to the receiving waters or interference with their proper operation, as outlined in 40CFR§403.5. In addition, Pretreatment staff ensure that federal, state and local pretreatment regulations pertaining to the Clean Water Act are met. The strategy the NBC adopted and implemented to satisfy these objectives include developing local discharge limitations to protect the treatment facilities and public health, permitting of industrial and commercial facilities to control the discharge of toxics, inspecting and sampling nondomestic facilities to ensure user compliance, and the development and implementation of extensive user education programs. The extensive user education efforts implemented by the NBC as part of routine inspections have been very effective at improving user compliance rates. TAC staff educates users of the many pollution prevention alternatives available instead of discharging toxics into the sewer system, while Pretreatment staff incorporates user education into every regulatory inspection.

- **Innovative and Effective Inspection Techniques** - Pretreatment staff employs many effective and innovative inspection techniques to aid in achieving the objectives of the NBC to control and reduce pollutant loadings to the treatment plants and hence Narragansett Bay. These techniques range from implementing simple internal procedures to standardize inspection activities to forming partnerships with the regulated industrial community. The following is a summary of these highly effective and innovative techniques and programs:

    ~ *Standardization of User Inspection Activities and Documents* - The Pretreatment Section has made great efforts to thoroughly standardize all aspects of the inspection process from inspection scheduling to writing the inspection report and letter. Annual inspection checklists have been standardized and customized for various classes of users, including for SIUs, non-significant industrial users, restaurants, dental facilities, septage haulers, etc. Pretreatment has also developed form letters to schedule the annual SIU inspection and to summarize and transmit the results of facility inspections for various user classes. The various inspection checklists ensure Pretreatment staff inspect and review all items of importance at a particular type of facility in a uniform, clear, and concise manner consistent with NBC and EPA protocols. The annual inspection checklist for SIUs has been developed to ensure full NBC compliance with all EPA regulations and to ensure uniform inspections of all SIUs, irrespective of the inspector conducting the facility inspection. The inspection summary form letters may be a Notice of Violation (NOV) or a "Job Well Done" letter. The NOV has all routine deficiencies clearly listed. The inspector can then quickly check off the violations observed, add any special facility requirements and the letter can be promptly prepared and issued. In addition to citing the deficiency, the letter explains in an educational manner the reason for the regulation and the importance for ensuring compliance. The standardization of inspection

documents has resulted in speedy completion and issuance of uniform inspection reports and summary letters to the user. An inspection report and summary letter are issued for each and every user inspection, typically within fourteen (14) days from the site visit.

Throughout 2024 Pretreatment staff continued to utilize inspection checklists that were developed to be used on iPads. These checklists allow staff to begin filling in checklists electronically in the office, complete it in the field, then download and print it back in the office. The iPads also allow staff to take pictures in the field and attach them directly to the inspection memo.

~ *Specialized and Innovative Inspector Training Programs* – The NBC provides extensive training to new employees and continued training to existing staff. Pretreatment, EM, TAC and Laboratory staff receive training in all aspects of their positions. On an annual basis, the NBC conducts its own training or contracts outside vendors for the training in the following areas:

- Confined Space Entry Training
- 40 Hour and 24 Hour OSHA HAZWOPER Training
- 8 Hour OSHA HAZWOPER Refresher Training
- OSHA Right to Know Training
- CPR/AED Training
- First Aid Training
- Spill Tracking Training
- Emergency Response Training

The NBC stresses consistency to Pretreatment staff in regulating industrial and commercial users. Pretreatment staff are continually being trained to be consistent. The following is a list of the methods used to ensure consistency:

- In-box reviews of staff
- Weekly Plan Review Meetings consisting of all technical staff
- Supervisors accompany staff members on inspections
- Supervisors review staff letters, memos, and permits

In addition to the aforementioned methods used to ensure consistency, senior Pretreatment staff conduct training sessions on Pretreatment procedures. The training includes the following topics:

- Rules & Regulations
- Permit Writing
- Letter and Memo Writing
- Industrial Process Operations
- Pretreatment Technologies
- Spill Response and Tracking
- Map Reading
- Permitted User Flow Data

Pretreatment staff also routinely attend technical seminars to further their knowledge and productivity. The Pretreatment Section has developed several innovative employee-training programs which resulted in more efficient inspection procedures. Supervisory staff work very closely with the inspectors charged with performing the daily user inspections. New staff members are closely supervised by senior staff members to ensure that they properly learn the standard operating procedures.

In-box reviews are conducted of staff to ensure that they understand user requests and what response is required and monthly in-box reviews are conducted of all staff members to ensure standardization of methods and conformance with work schedules. Senior staff members accompany new staff members on their inspections to help them become familiar with NBC user education presentations, process operations, pretreatment systems, and permit requirements. In addition, senior staff routinely conduct inspections with veteran inspectors to ensure continued conformity with NBC inspection policies and protocols.

Feedback, detailing what aspects of the inspection were done well and what aspects need improvement, is provided to the inspector verbally as well as in writing. The Pretreatment Inspector Feedback Form was developed for this purpose. The feedback form consists of several sections which cover all aspects of the facility inspection process, including pre-inspection preparation, inspection interaction with the user, user education, facility inspection observational abilities, inspection documentation, professionalism, self-confidence, etc. New employees are not permitted to conduct inspections alone until all aspects of a good inspection, as noted on the feedback form, are satisfactory.

Another innovative training program implemented is the annual Spill Response and Tracking Drill. Staff participate in a classroom presentation which includes tabletop exercises simulating unusual discharges to the treatment plant and spills occurring in the sewer system. In addition, staff participate in training exercises in the field. Senior staff establish a source of "illegal discharge" and identify key manholes for the staff to follow. Senior staff assign a team leader to head the mock investigation to track the "illegal discharge" to the source. For the training drill, a newer employee is typically chosen to be the team leader. The mock spill is tracked through the sewer system in an attempt to identify the source, where a thorough facility inspection is conducted. Inspectors are trained to collect evidentiary samples necessary for a good enforcement action. This annual tracking, evidence gathering and inspection drill has greatly improved the awareness and inspection abilities of all Pretreatment staff.

Pretreatment staff participate in the annual Spill Response and Tracking Drill

~ *Pollution Prevention Referral Program* – During all Pretreatment regulatory inspections, Pretreatment staff routinely refer the user to the Pollution Prevention Program for free technical assistance. All NOVs also advise users to obtain the free expertise of the Pollution Prevention staff. These referrals have resulted in improved compliance rates and non-compliant users achieving compliance more quickly.

~ *Inspection Educational Efforts* – User education is by far the single most important aspect of any user inspection. During the annual inspection, industrial users are educated regarding all aspects of the NBC including the NBC Mission Statement, the purpose and types of all NBC inspections, and SNC criteria. The inspector clearly explains what constitutes SNC, the importance of maintaining full compliance and all permit requirements are explained to the user in detail. NBC inspection summary letters are also very educational in nature. Instead of simply requiring a user to perform a task, the letter educates the user regarding the reason for the imposed requirement. This often results in quick user compliance with the imposed requirements. These extensive user education efforts have been very effective at encouraging user compliance. The SIU rate of SNC was impressively reduced in the Field's Point District from a high of 39.0% in 1992 to 9.1% in 2024, while the SIU Rate of SNC for Bucklin Point was reduced from a high of 44.8% in 1994 to 13.5% in 2024. The overall rate of SNC for all NBC SIUs for 2024 was 11.4%, a decrease from the rate of SNC of 13.2% observed in 2023. These impressive reductions in the Rate of SIU SNC are clearly attributable to improved user education, prompt resampling requirements for any effluent violation and proactive communication with users to encourage correcting the violation before being in SNC.

- **Types of Pretreatment Inspections -** The NBC conducts six types of inspections of industrial and commercial users. The following is a summary of the inspection types utilized by the NBC:

  ~ *Initial Inspection* – The initial inspection can be an announced or unannounced inspection and is performed to determine if the user is regulated under pretreatment regulations and to inform the user of pretreatment requirements.

  ~ *Annual Inspection* – An annual inspection is a thorough, announced inspection of the facility and the user's records to determine if the firm is complying with all NBC and permit requirements. This inspection is done once per 12 month period for SIUs and covers all the items shown in the Annual Inspection Checklist which is provided in ATTACHMENT VOLUME I, SECTION 3. The annual inspection consists of an extensive review of paperwork, processes, pretreatment systems, treatment procedures, sampling procedures, spill containment measures, and chemical/waste storage areas.

  ~ *Follow-up Inspection* – This inspection may be an announced or unannounced inspection to determine if specific items noted in an annual inspection were completed as required. Follow-up inspections may be conducted to view work in progress, work completed or discuss problems that the firm may be having in complying with or understanding NBC or Pretreatment Program requirements.

  ~ *Sampling Inspection* – The sampling inspection is an unannounced inspection which must be conducted of every SIU at least once every 12 months, as required by EPA regulations. The NBC typically conducts sampling of each SIU twice every 12 months.

~ *Emergency Response or Special Investigation Inspection* – This is an immediate unannounced inspection initiated in response to a complaint or spill to determine the source of problems occurring in the sewer system. These problems or complaints are typically reported by NBC employees, local authorities or by district residents.

~ *Facility Shutdown Inspection* – This is typically an announced inspection to conduct an inventory of all chemicals and solutions on-site, to observe facility decontamination procedures, to seal sewer connections to prevent illegal discharges to the sewer, and to install prohibited discharge stickers on all tanks.

Facility Shutdown Inspection of an electroplating facility that is no longer in operation.

Follow-up inspection of the same facility to verify that the firm has disposed of all solutions and complied with NBC Shutdown Procedures.

During 2024, Pretreatment staff conducted 1,407 non-sampling inspections, 254 were inspections of SIUs and 1,153 were inspections of non-significant users. Pretreatment staff conducted 151 inspections of categorical users and 103 inspections of significant non-categorical users in both districts excluding sampling inspections. Pretreatment staff conducted 76 regulatory compliance meetings in 2024.

Pretreatment staff inspected all companies classified as SIUs at least twice during the 12 month review period with the exception of two during 2024. The first SIU only inspected once, CBNA Barletta Phase IIIA CSO JV-Receiving Shaft Site, was part of Phase III of NBC CSO abatement project. Dewatering operations ceased at this location ceased very early in 2024. The annual inspection was conducted prior to dewatering operations ceasing. The second SIU only inspected once, Summit Manufacturing Corporation, ceased operating in early 2024. Pretreatment staff contacted the owner and was able to conduct the annual inspection. The Pretreatment Section satisfied and exceeded EPA requirements to inspect every SIU at least once every twelve month period.

During 2024, EM staff conducted 154 industrial user sampling inspections of 68 industrial user facilities resulting in the collection of 159 composite and grab samples. All of the 159 monitoring reports were issued to significant users. There were 89 sampling inspections of 38 categorical industries and 65 sampling inspections of 31 significant non-categorical users.

All facilities classified as SIUs were sampled at least twice within the required 12-month period with the exception of two facilities. These two SIUs were unable to be sampled. The first SIU not sampled in 2024, Tanury Industries PVD, Inc., discharges on a batch basis. During 2024, the company collected all process wastewater and shipped it offsite for disposal. This was verified by Pretreatment staff during inspections. EM staff regularly contacted the company to inquire if a batch was to be discharged. The remaining SIU not sampled during 2024, John Rocchio Corporation performed construction activities as part of Phase III of the NBC CSO abatement project. Large volumes of ground water were expected to be discharged to the sewer from this site. However, this location did not generate adequate quantities of ground water to discharge to the sewer. Therefore, samples could not be collected.

TABLE 13 summarizes the status of each company that was inspected or sampled by the NBC less than twice in 2024.

TABLE 13
Summary of SIUs Inspected or Sampled Less than Twice in 2024

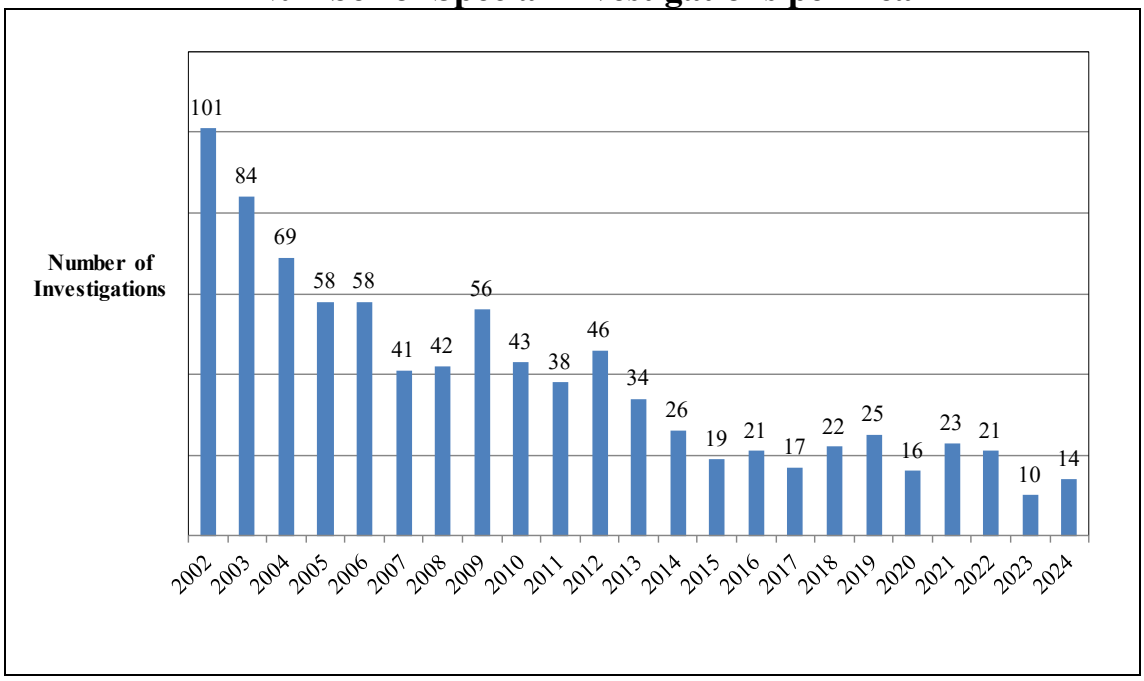
Company Name	2024 Inspection & Sample Summary	Explanation
Bucklin Point		
CBNA Barletta Phase III CSO JV-Receiving Shaft Site	1 Inspection	Firm ceased discharges very early in 2024
John Rocchio Corporation	No Samples	Firm did not discharge in 2024
Summit Manufacturing Corporation	1 Inspection	Firm ceased operations in early 2024
Tanury Industries PVD, Inc.	No Samples	Firm shipped all process wastewater offsite for disposal

A summary of the number of types of inspections performed by the NBC this reporting period is provided in TABLES 5 and 7, the Pretreatment Performance Summary Sheets, which are contained in CHAPTER I of this report. A list of each NBC sampling and non-sampling user inspection and the inspection date is provided in ATTACHMENT VOLUME II, SECTION 2.

Emergency or Special Investigations

During 2024, Pretreatment staff investigated 14 reports of spills, odors, blockages, unusual plant influents, and illegal discharges to the sewer system within the Field's Point and Bucklin Point service areas. A listing of 2024 emergency or special investigations is provided in ATTACHMENT VOLUME II, SECTION 4. FIGURE 6 is a graphical trend analysis detailing the number of pretreatment investigations conducted annually since 2002.

FIGURE 6
Number of Special Investigations per Year

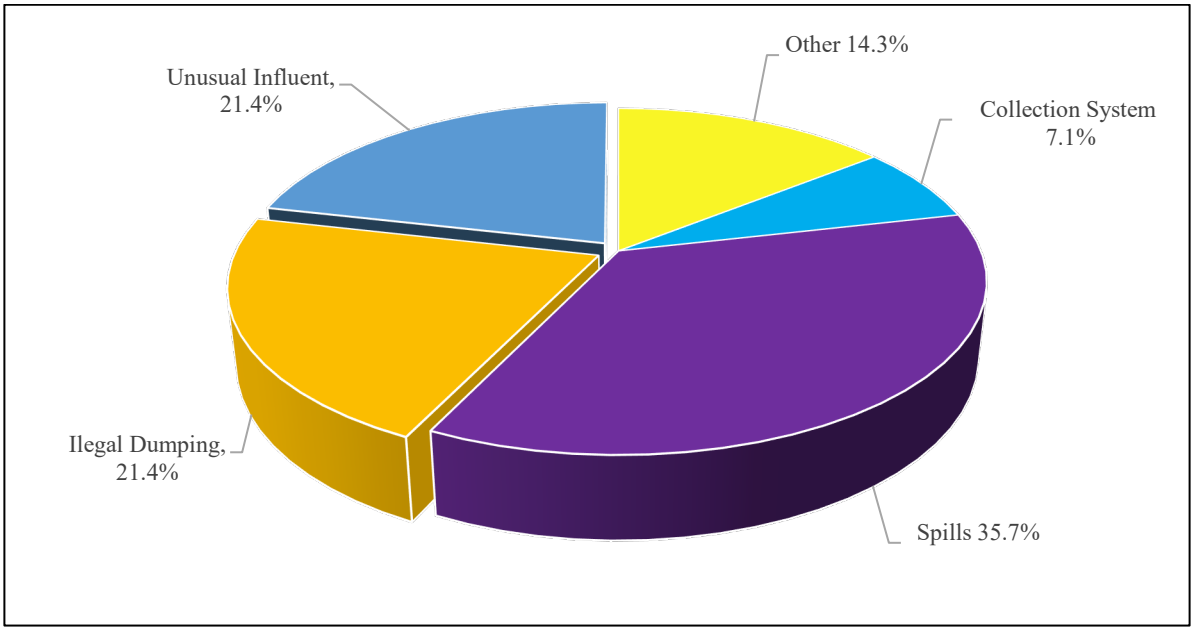


As can be seen from FIGURE 6, the number of investigations and spill response activities fluctuates from year to year, but has been significantly reduced from the number of investigations conducted in the early 2000s. This is attributed to better education of users regarding spill prevention practices, overall environmental awareness by industry and the decline of SIU manufacturing facilities in the district.

FIGURE 7 graphically depicts the breakdown of the types of investigations that occurred in 2024. As can be seen from the chart, the majority of the investigations resulted primarily from reports of spills, which accounted for five investigations. There were three reports of illegal dumping and three reports of unusual influent. In addition, there was one investigation conducted in response to a report of odors, one report of problems in the collection system and one investigation into fire department training activities.

These investigations often require frequent follow-up activities, subsequent inspections and clean-up activities, and may result in the initiation of enforcement actions by the NBC. Numerous follow-up inspections were required as a result of these initial 14 investigations. Those NBC investigations of major concern and interest to the NBC over the past year are described in the following paragraphs.

FIGURE 7
Breakdown of 2024 Investigations



Unusual Influent Investigations

Pretreatment staff investigates all incidents of unusual influent at both treatment plants. In 2024, Pretreatment investigated three reports of unusual influent all of which occurred at the Bucklin Point plant.

Two of the Bucklin Point unusual influent investigations were in response to reports of low influent pH. One report stated the influent in the Blackstone Valley Interceptor (BVI) had a pH lower than normal. The other report stated the pH in the East Providence Interceptor (EPI) was very low. Pretreatment staff attempted to track the source of the low pH in both incidents. When staff arrived at the plant the pH had returned to normal levels. In both cases, the low pH was of short duration and did not adversely impact the plant.

The final Bucklin Point unusual influent investigation was in response to a report stating the BVI influent sampler contained red influent. This colored influent was of a short duration and did not adversely impact the plant. In response to this report, Pretreatment staff contacted all facilities with the potential to impact the treatment plant with colored process wastewater. These companies were required to submit their color logs. A review of the color logs did not reveal the source of the colored influent.

Food Preparation Related Grease Investigations

During 2024 Pretreatment staff conducted three grease related investigations. All three of these investigations occurred in the Field's Point district.

The first investigation was conducted in response to a report from Interceptor Maintenance (IM) staff stating grease was observed in lines located on Ericson Place and Atwells Avenue in Providence. The area upstream of the impacted area was investigated and it was determined there were five facilities with the potential to discharge grease laden wastewater. All of these facilities were permitted. Three of the facilities were in full compliance with their permits as their grease removal equipment and logbooks were being maintained. The remaining two facilities were not in compliance. At one of the facilities, the grease removal unit was not operational, the trough from the unit was hard piped to the sewer and the required logbook was not being maintained. The outdoor inground grease interceptor at the remaining facility was full of grease and needed to be pumped out. In addition, a logbook was not being maintained. Both facilities were issued Notices of Violation (NOV) requiring them to make the necessary repairs and create and maintain logbooks. The second investigation was conducted in response to a report from the Rhode Island Department of Health (DOH) stating grease was observed on the ground outside of a restaurant located on Ives Street in Providence. At the time of the investigation Pretreatment staff observed grease was coming from the restaurant's outside storage area. The owner of the facility stated his staff had spilled grease on the ground when disposing it in a waste grease bun. The owner was instructed to clean up the area and put measures in place to prevent future occurrences. Subsequent inspections showed the area was cleaned up. The final grease related investigation was conducted in response to a report from the City of Providence Department of Public Works (DPW) stating greasy wastewater was observed being discharged to a catch basin located on Hope Street at the corner of Ninth Street. At the time of the investigation, Pretreatment staff noted that kitchen mats from a restaurant located at this corner were being washed on the sidewalk and grease stains were observed on the pavement outside of the restaurant's storage area. Pretreatment staff met with a representative of the restaurant who stated the stains were from grease in the dumpster and it leaked out. It was also stated the mats were routinely washed outside of the facility. The facility was instructed to place grease in sealed containers prior to disposing it in the dumpster and to wash the kitchen mats in a sink that discharges to its grease removal unit. The Field's Point plant was not impacted by any of these investigations.

Spills

In 2024, Pretreatment staff responded to five reports of spills. Four of the spills occurred in the Bucklin Point district.

Three of the four Bucklin Point spills occurred at the treatment plant. Two of these spills were of returned activated sludge (RAS) leaking from an underground pipe. In the first incident the pipe was patched to stop the leak. The spilled material was returned back to the treatment process. The second leak occurred when a weld on the RAS pipe farther below grade failed causing RAS to come up through the ground surrounding the pipe. After this incident, a bypass line was installed so the RAS line could be repaired. In both incidents, operations staff contained the spilled material with the use of sandbags and covered all catch basins in the area. The remaining plant spill occurred when a catch basin became clogged with debris and leaves. Secondary digester seal water which is contaminated with digested sludge discharges to the headworks through this catch basin. The clogged drain caused the seal water to pool on the ground and spill to the roadway below the digesters via the riprap area. Operations staff contained the material using sandbags. A portable pump was used to redirect the seal water to a catch basin downstream while the clog was being cleared. IM staff was on scene and used a vactor truck to collect the material on the ground. All of the collected material was discharged back to the headworks of the plant. The plant storm water system and the Seekonk River were not impacted by any of these spills. The final Bucklin Point spill investigation was conducted in response to a report stating that oil was leaking from underground tank located at 335 Barton Street in Pawtucket. The tank was located in an alley of the mill complex at this location. Pretreatment staff observed there was approximately four to five inches of oily water over the cover of the tank. There were no direct connections to the sewer in the area. A representative of the owner of the complex was contacted and instructed the oily water was prohibited from being discharged to the sewer. The matter was referred to DEM.

The Field's Point spill investigation was conducted in response to a report from the Providence Fire Department (PFD) stating a gasoline tank truck rolled over on the 95N on-ramp from Allens Avenue. Approximately 2,500 gallons of gasoline was released from the tanker. The spilled gasoline was contained to the area at the entrance to the ramp. PFD applied foam and collected the material for disposal. The catch basins in the area discharge directly to the Providence River. The spilled gasoline did not enter the sewer system and the treatment plant was not impacted by the spill.

Pass-through and Interference

During 2024, the Pretreatment Section conducted 14 special or emergency investigations within the Field's Point and Bucklin Point districts. All reports of spills, dumping activities, unusual influents, and other related incidents during 2024 were thoroughly investigated. It is not known at the onset of an unusual influent report if the influent pollutant will cause interference with either mechanical equipment or with the microbial organisms utilized at the treatment facilities to break down the sanitary waste. Nonetheless, each report must be investigated to ensure that the unusual influent does not cause interference with NBC operations, pass through the facility into the receiving waters, or cause a discoloration of the receiving body of water, all of which would result in NBC being in violation of its RIPDES permits. None of the unusual influent incidents, dumping reports or spills investigated during 2024 resulted in interference or pass-through situations at either of the NBC wastewater treatment facilities. This is a testament to the excellent job done daily by the NBC to control the discharge of toxic and nuisance pollutants.

IV. COMPLIANCE MONITORING

Compliance Monitoring

The Narragansett Bay Commission utilizes two types of industrial and commercial user monitoring to determine compliance with effluent discharge limitations. These are:

- User Self-Monitoring;
- Compliance monitoring conducted by NBC personnel.

A description of both types of monitoring is provided in the following sections.

User Self-Monitoring

User self-monitoring is sampling conducted by an industrial or commercial user in accordance with the terms of their permit. The frequency of self-monitoring required by the permit may vary from once every twelve months (one time per year) to once per month (twelve times per year) depending on the nature and volume of the wastewater discharges. In some cases, permits may require compliance monitoring of each facility discharge. The frequency of self-monitoring is automatically increased to weekly when a user fails to meet discharge limitations by self-monitoring or by NBC sampling results. Once the user has demonstrated full compliance during four consecutive sampling events, the user is returned to the monitoring frequency specified in the permit.

User self-monitoring must be conducted in accordance with federal pretreatment requirements as specified in 40CFR§403 and analytical techniques specified in 40CFR§136. A Certification of Analysis (COA) detailing the results must be submitted with a properly completed Self-Monitoring Compliance Report (SMCR) form and Chain of Custody (COC) documentation. The SMCR requires the user to review the analytical results prior to submittal, to notify the NBC of any violation within twenty-four (24) hours of becoming aware of the violation and to enter the analytical report identification number on the SMCR. The SMCR notifies the users of the NBC requirement to resample their wastewater for any parameters violating standards. This resampling must be done and results submitted within thirty (30) days of becoming aware of the violation. The SMCR also requires the user to notify the NBC of the reasons for the violation and the steps and time frame necessary to correct the violations. This form must be signed by an authorized agent of the company. A sample SMCR is provided in ATTACHMENT VOLUME I, SECTION 3.

Pretreatment staff developed the 24-Hour Violation Notification Fax form so that the user could quickly report an effluent violation to the NBC. This form also provides a good file record that the proper NBC violation notification requirement was satisfied by the user. A sample 24 Hour Violation Notification Fax form is provided in ATTACHMENT VOLUME I, SECTION 3.

Samples collected by industrial and commercial users can be either composite samples or grab samples. Composite samples consist of a number of samples taken over a period of time that are combined. Most permit sampling consists of composite samples.

Grab samples consist of a single sample taken at one point in time. This type of sample is typically used to monitor the pollutant concentrations of batch discharges from facilities and to ensure that wastewater discharged on a batch basis is receiving proper pretreatment. A batch discharge usually occurs from one tank over a short period of time.

Many users are required to perform both composite and grab sampling of their discharges. Composite samples are collected from the continuous final effluent and grab samples are collected from batch treatment tanks and/or small process tanks that are batch discharged to the final discharge point. Composite sample results are evaluated for compliance with the NBC discharge limitations shown in TABLE 14. This table indicates the discharge standards that must be maintained by users located in the Field's Point and Bucklin Point districts. Batch discharges are evaluated for compliance by means of a concentrated discharge formula. This formula is based on the allowable mass loading from a facility and is essentially equivalent to the EPA combined waste stream formula.

In addition to regular wastewater sampling, many industrial users, including all metal finishers, are required to continuously record the pH of the effluent discharged from their firm. These users are required to submit a monthly pH Monitoring Report summarizing the maximum, minimum, and average pH values for each day of operation. The pH Monitoring Report form requires the user to certify that the data reported to the NBC was taken directly from the pH recording chart and is reported to an accuracy of 0.1 standard units. Firms that discharge wastewater on a batch basis must record the final pH of the batch prior to discharge. This data must also be reported monthly. The NBC Batch and Continuous pH Monitoring Report forms are provided in ATTACHMENT VOLUME I, SECTION 3.

NBC Industrial User Sampling Program

Environmental Monitoring (EM) staff conducts compliance monitoring of industrial and commercial facilities to assess users compliance status and to verify the validity of user self-monitoring results. Sampling is conducted inside the facility and is random and unannounced. A chain of custody procedure is used which includes completion of a chain of custody section on the Sample Submission Sheet. Sample bottles are sealed with bottle sealing tape to prevent tampering after sampling and preservation has been completed. A sample submission sheet is completed by EM staff conducting the sampling and specifies the exact sampling procedure to be implemented, the laboratory analysis requested to be conducted, facility water consumption data, sample preservation documentation and a certification of split sample acceptance or refusal signed by the user. Copies of these sampling and chain of custody documents are provided in ATTACHMENT VOLUME I, SECTION 3.

TABLE 14

NBC Field's Point Effluent Discharge Limitations

(Providence, North Providence, Johnston, small sections of Lincoln and Cranston)

Parameter	Limitation (Max)	Parameter	Limitation (Max)
Arsenic (Total)	0.02*	Zinc (Total)	2.61
Cadmium (Total)	0.11	Total Toxic Organics (TTO)	2.13
Chromium (Total)	2.77	Biochemical Oxygen Demand (BOD_5)	300
Copper (Total)	1.20	Total Suspended Solids (TSS)	300
Cyanide (Total)	0.58**	Total Oil and Grease (fats, oils and grease)	125
Lead (Total)	0.60	Total Nitrogen	115***
Mercury (Total)	0.005	Ammonia	50***
Nickel (Total)	1.62	pH range (at all times)	5.0-11.0 s.u.
Silver (Total)	0.43		

Industrial User Category/Categories	Parameter(s)	Limitation (lbs/1000 gal)
14	BOD_5 and TSS	5
23 and 29	BOD_5 and TSS	20
25, 28, 34, and 36	BOD_5 and TSS	10
33	BOD_5 and TSS	75
33	Total Nitrogen	10***
33	Ammonia	2***

NBC Bucklin Point Effluent Discharge Limitations

(Pawtucket, Central Falls, Lincoln, Cumberland, Rumford Section of East Providence, and Eastern Section of Smithfield)

Parameter	Limitation (Max)	Parameter	Limitation (Max)
Arsenic (Total)	0.03	Zinc (Total)	1.67
Cadmium (Total)	0.11	Total Toxic Organics (TTO)	2.13
Chromium (Total)	2.77	Biochemical Oxygen Demand (BOD_5)	300
Copper (Total)	1.20	Total Suspended Solids (TSS)	300
Cyanide (Total)	0.50**	Total Oil and Grease (fats, oils and grease)	125
Lead (Total)	0.69	Total Nitrogen	115***
Mercury (Total)	0.06	Ammonia	50***
Nickel (Total)	1.62**	pH range (at all times)	5.0-11.0 s.u.
Silver (Total)	0.40		

Industrial User Category/Categories	Parameter(s)	Limitation (lbs/1000 gal)
14	BOD_5 and TSS	5
23 and 29	BOD_5 and TSS	20
25, 28, 34, and 36	BOD_5 and TSS	10
32	BOD	570
32	TSS	10
33	BOD_5 and TSS	75
33	Total Nitrogen	10***
33	Ammonia	2***

Industrial User Category/Categories	Parameter(s)	Limitation (lbs/day)
32	Total Nitrogen	300***
32	Ammonia	300***

* The Arsenic Limitation in Field's Point applies to all Industrial Users except the landfill which must meet 0.4 mg/l.

** The Cyanide Limitations for each district only applies to Industrial Users in categories 11 and 15. All other users in both districts must meet 0.4 mg/l. The Nickel Limitation for Bucklin Point only applies to Industrial Users in categories 11 and 15. All other uses in Bucklin Point must meet 0.50 mg/l for nickel.

*** Total Nitrogen and Ammonia Limitations in both districts are seasonal from May 1st through October 31st.

EMDA Lab Area

EM utilizes many controls to ensure the legal integrity of the samples collected for compliance and enforcement monitoring. Quality Assurance and Quality Control (QA/QC) begins with the purchase of materials. The sample bottles purchased are high quality and pre-cleaned. New bottles are purchased and utilized for each sampling event and all old bottles are discarded. Only the bottles used in automatic samplers and cyanide sample bottles are washed and reused by NBC staff Preservatives purchased are reagent grade with ultra low levels of impurities.

Standard Operating Procedures (SOP) have been established for glassware and equipment cleaning. These were developed in accordance with EPA established protocols. A copy of the SOP Manual is kept in each EM field laboratory at all times for reference. The procedures include specific information relative to the types of chemicals used, such as phosphate free detergents, deionized water, types and strengths of acids, and solvents. EM sampling equipment and protocols were modified to satisfy EPA Clean Sampling requirements.

A logbook is maintained for each automatic sampler to document all usage, cleaning and repairs, as well as all preventive maintenance. All sample lines are prepared in the same manner as sample containers. Acids used in this process are also periodically analyzed for contaminants. A blank water sample of the sampler hose and pump lines is collected and preserved upon completion of the cleaning process. This blank is submitted to the laboratory with the samples that are collected with that sampler. In addition, the deionized water system used by EM is checked each week at the ppb level to ensure the integrity of the final deionized water rinse.

Whenever the NBC conducts user sampling, the user is offered a replicate sample that they may have analyzed by an independent laboratory for comparison with the NBC results. The user is notified of the NBC results as soon as they are reported by the NBC Laboratory.

In addition to compliance monitoring inside the industrial and commercial user facilities, the NBC also monitors manholes strategically located throughout the sewer system on a regular basis. The purpose of this manhole monitoring is to track spills, concentrated or non-compliant discharges, and to monitor users without them being aware that sampling is being conducted.

The majority of samples collected in 2024 by EM were analyzed at NBC laboratory facilities at Field's Point. The laboratory utilizes state-of-the-art wastewater analytical equipment that is able to comply with the most stringent EPA and RI Department of Health (DOH) regulations that call for sensitive detection of various materials contained in wastewater.
The EM and Laboratory sections work together to ensure that samples are collected and processed in accordance with all EPA protocols.

Water Quality Science Building

The EM laboratory section of the building has been designed to include separate areas for plant sampling work, industry and manhole sampling, nutrient sampling, and fixed site sonde maintenance work. Preparation and cleaning of sampling equipment and bottles for these different sampling initiatives is performed in segregated areas to minimize the risk of equipment cross contamination.

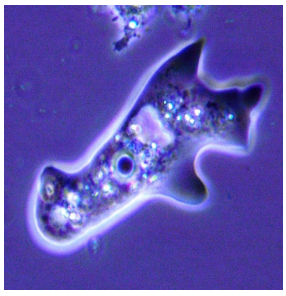
The EPA has outlined several analyses that require ultra-low level detection. These analyses are for trace metals utilizing an inductively coupled plasma/mass spectrometer (ICP/MS), mercury using a cold vapor atomic fluorescence spectrometer, and cyanide. To achieve these ultra-low levels, the instruments must be kept in an environment free of contaminants. The major contaminant of concern is metals. The building has been designed to allow for samples to flow smoothly through the lab. The building has been equipped with state of the art instrumentation and with an advanced class 10,000 clean room.

Analytical Laboratory

The class 10,000 clean room is used to process ultra low level metal samples and ultra low level mercury samples. Fume hoods in the lab clean room are clean classified as approaching Class 1000 Clean Room Criteria. This means that there is very minimal exposed metal in this area. Everything in this area from the light fixtures to the door jambs are coated or made of a non-metallic material and all air is processed through HEPA filters. There are two labs utilized for microbiology analysis. This area allows the NBC to process the enterococcus samples required by the RIPDES permits.

There are separate areas of the laboratory designated for digestion of metals, metals analysis on the ICP and metals analysis on the mercury analyzer. The mercury analyzer uses EPA Method 245.7 and currently has a detection limit of 1.0 parts per trillion (ppt). This detection limit is expected to improve as protocols for this equipment are further refined. The ultimate goal is to use EPA Method 1631 for the measurement of total mercury, with an estimated method detection limit of 0.05 ppt and minimum reporting limit (ML) of 0.2 ppt. The ICP/MS is used for ultra-trace multi-elemental analysis. The method used is EPA Method 200.8 for trace metals at EPA Water Quality Criteria levels.

ICP used at the NBC Laboratory



Amoeba

The Laboratory has a microbiology department dedicated to enterococcus, fecal coliform and various other bacterial analysis. A microscope, camera, and monitor are some of the tools used in the "Micro" room. There is also a room specifically used for making media, which is the material used to promote bacteria growth. The use of a separate room for media preparation is important to control contamination. To accommodate the projects conducted by NBC and to satisfy EPA regulations, it is vital to properly maintain and continuously improve the NBC Laboratory. Throughout 2024, the NBC Biologists performed bioassay analysis for the NBC.

Between the period of January 1, 2024 through December 31, 2024, NBC staff conducted 154 sampling inspections of industries located within the Field's Point and Bucklin Point districts, resulting in 159 monitoring reports. Of these 159 monitoring reports, 132 were in full compliance with the NBC standards and 27 were not in compliance, resulting in a user compliance rate of 83.0% based upon NBC analyses. This is virtually the same rate of compliance reported for 2023 at 83.2% NBC monitoring results.

The NBC conducted sampling of 68 SIUs is the two NBC districts during 2024. Of the 68 facilities sampled by the NBC, 38 facilities were classified as categorical industries at the time of the sampling event. There were 30 firms classified as significant non-categorical facilities when sampled by the NBC during 2024.

Computer printouts of the 2024 sampling results for significant and non-significant users, separated by district, are provided in ATTACHMENT VOLUME II, SECTIONS 5 and 6 respectively. NBC analyses are identified in the printout. These printouts list cadmium, chromium, copper, lead, nickel, silver, zinc, cyanide, BOD, TSS, Oil and Grease, and other categorical parameters specific to the user. The compliance status of each result is also indicated.

Analysis of Monitoring Results

NBC permits required industrial and commercial users to submit 1,626 wastewater monitoring reports for the period from January 1, 2024 through December 31, 2024. For this period, the industrial and commercial users actually submitted 2,139 sample results, 1,990 of which were in full compliance with NBC and EPA standards. This is a user self monitoring report rate of compliance of 93.0%. The users submitted 33.4% more analyses than required by permits due to the NBC requirement to conduct weekly sampling once non-compliance has occurred.

TABLE 15 provides a summary of the batch and non-batch compliance monitoring results for categorical and non-categorical industries located in both NBC districts for the period from January 1, 2024 through December 31, 2024. TABLE 16 provides a summary of the batch and non-batch compliance monitoring results for the significant and non-significant industrial users. The data reported in TABLES 15 and 16 is shown graphically in FIGURES 8 and 9. TABLE 17 is a comparison of the percent compliance for both self-monitoring and NBC sampling results for the aforementioned period. This table indicates that there may be inconsistencies between NBC and user sampling results. While user self-monitoring compliance reports submitted by significant users indicate a compliance rate of 91.9%, NBC results indicate a compliance rate of 84.3% for this class of users.

TABLE 15

Narragansett Bay Commission
Field's Point and Bucklin Point Districts

Summary of All Compliance Monitoring Results for Categorical and Non-Categorical Users

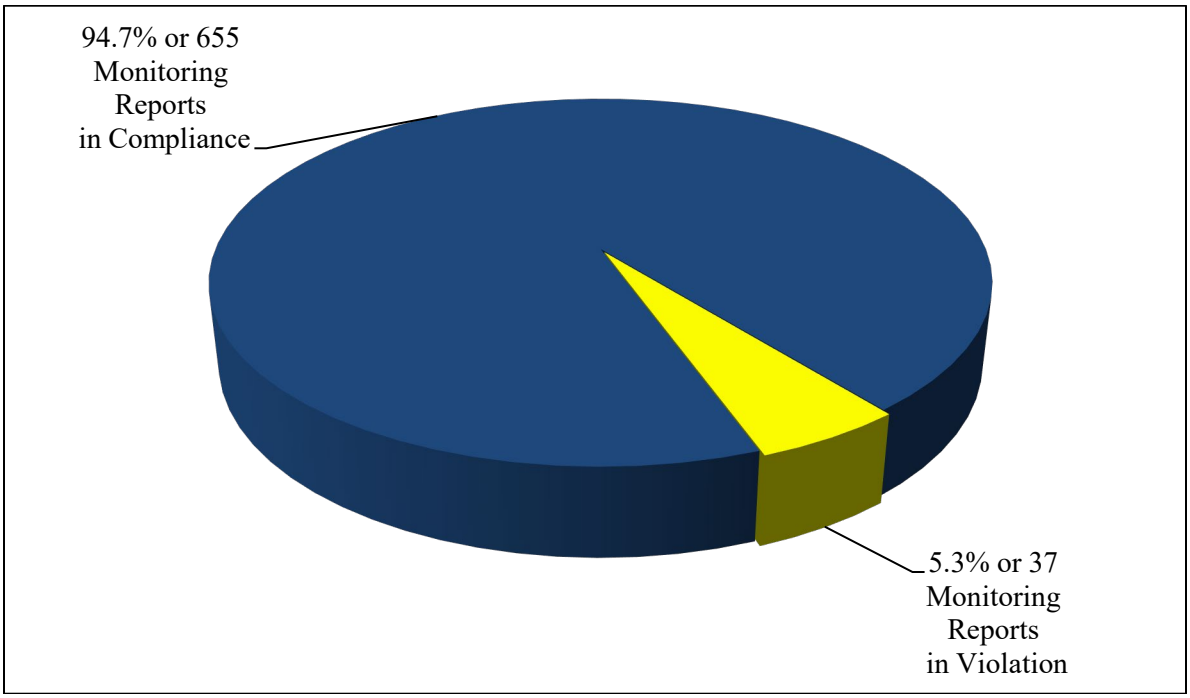
January 1, 2024 - December 31, 2024

User Self-Monitoring Results	**Categorical**	**Non-Categorical**	**Totals**
Total Monitoring Reports Required	**496**	**1,130**	**1,626**
Total Monitoring Reports Submitted	**601**	**1,538**	**2,139**
Total Monitoring Reports In Compliance	**579**	**1,411**	**1,990**
Total Monitoring Reports Not In Compliance	**22**	**127**	**149**
NBC Monitoring Results			
Total Monitoring Reports Collected	**91**	**68**	**159**
Total Monitoring Reports In Compliance	**76**	**58**	**134**
Total Monitoring Reports Not In Compliance	**15**	**10**	**25**
All Results			
Total Monitoring Reports Reviewed	**692**	**1,606**	**2,298**
Total Monitoring Reports With Violations	**37**	**137**	**174**
Total Monitoring Reports In Compliance	**655**	**1,469**	**2,124**
Total Users Sampled	**38**	**371**	**409**
Total Users With Violations	**12**	**39**	**51**
Total Users Without Violations	**26**	**332**	**358**

FIGURE 8

2024 Rates of Compliance for Categorical and Non-Categorical Users
Field's Point & Bucklin Point Districts

Categorical User Analyses
Total Number of Monitoring Reports = 692



Non-Categorical User Analyses
Total Number of Monitoring Reports = 1,606

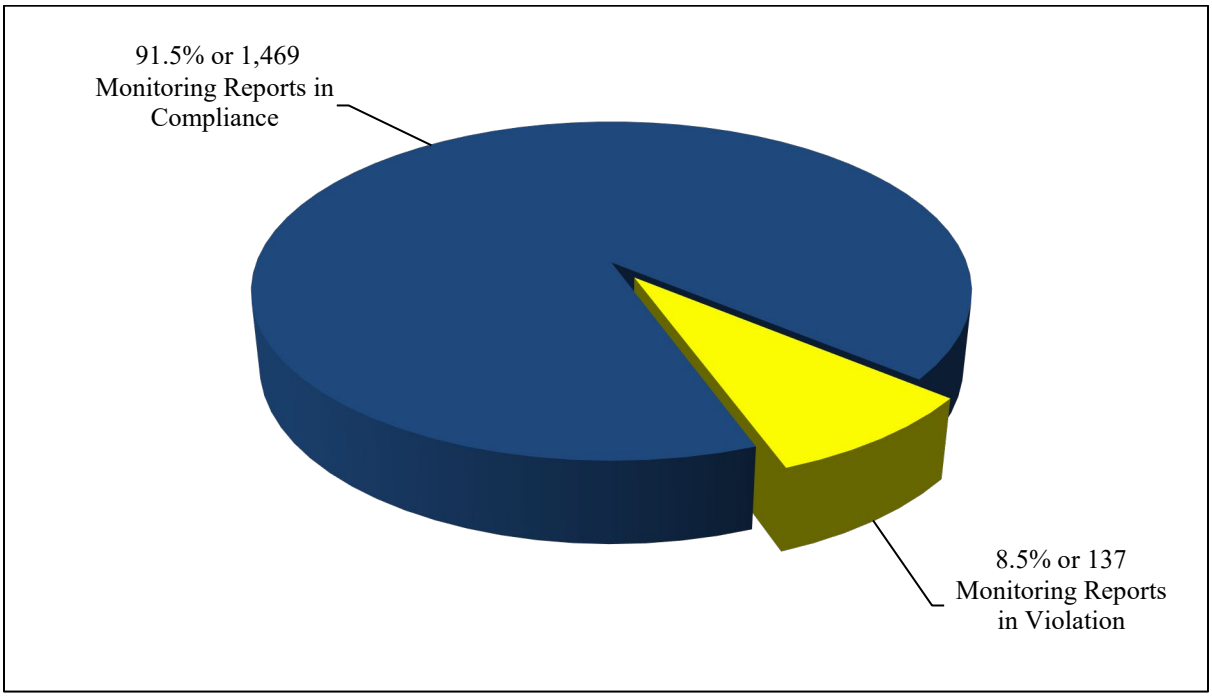


TABLE 16

Narragansett Bay Commission
Field's Point and Bucklin Point Districts

Summary of All Compliance Monitoring Results for Significant and Non-Significant Users

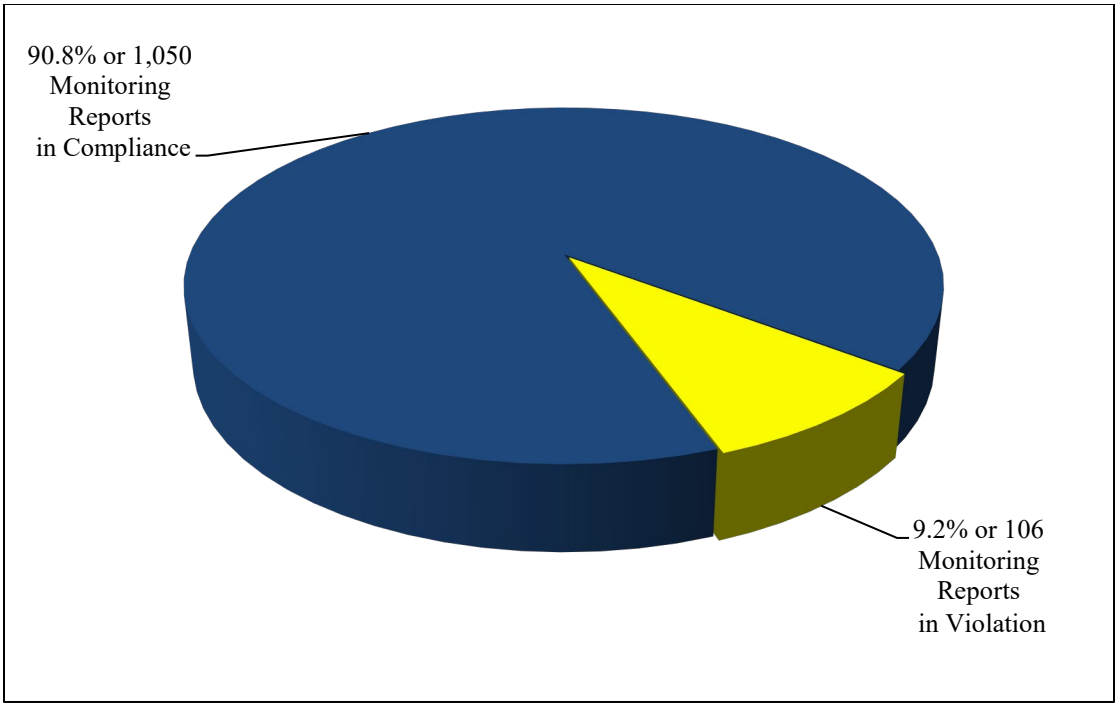
January 1, 2024 - December 31, 2024

User Self-Monitoring Results	Significant Users	Non-Significant Users	Totals
Total Monitoring Reports Required	**756**	**870**	**1,626**
Total Monitoring Reports Submitted	**997**	**1,142**	**2,139**
Total Monitoring Reports In Compliance	**916**	**1,074**	**1,990**
Total Monitoring Reports Not In Compliance	**81**	**68**	**149**
NBC Monitoring Results			
Total Monitoring Reports Collected	**159**	**0**	**159**
Total Monitoring Reports In Compliance	**134**	**0**	**134**
Total Monitoring Reports Not In Compliance	**25**	**0**	**25**
All Results			
Total Monitoring Reports Reviewed	**1,156**	**1,142**	**2,298**
Total Monitoring Reports With Violations	**106**	**68**	**174**
Total Monitoring Reports In Compliance	**1,050**	**1,074**	**2,124**
Total Users Sampled	**69**	**340**	**409**
Total Users With Violations	**19**	**32**	**51**
Total Users Without Violations	**50**	**308**	**358**

FIGURE 9

2024 Rates of Compliance for Significant and Non-Significant Users
Field's Point & Bucklin Point Districts

Significant User Analyses
Total Number of Monitoring Reports = 1,156



Non-Significant User Analyses
Total Number of Monitoring Reports = 1,142

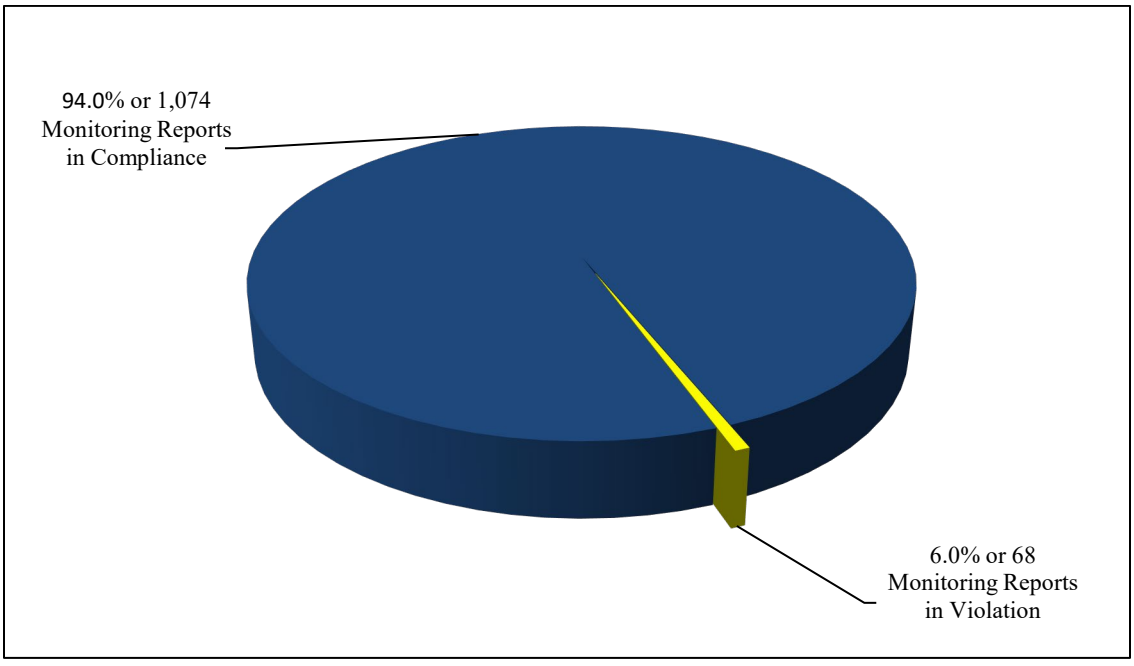


TABLE 17

Narragansett Bay Commission
Field's Point and Bucklin Point Districts

Comparison of Compliance Rates for
Self-Monitoring and NBC Monitoring Reports

January 1, 2024 - December 31, 2024

	User Self-Monitoring	NBC Monitoring	All Results
Significant Users			
Compliance Rate	**91.9%**	**84.3%**	**90.8%**
Non-Compliance Rate	**8.1%**	**15.7%**	**9.2%**
Non-Significant Users			
Compliance Rate	**94.0%**	**0%**	**94.0%**
Non-Compliance Rate	**6.0%**	**0%**	**6.0%**
Categorical Users			
Compliance Rate	**96.3%**	**83.5%**	**94.7%**
Non-Compliance Rate	**3.7%**	**16.5%**	**5.3%**
Non-Categorical Users			
Compliance Rate	**91.7%**	**85.3%**	**91.5%**
Non-Compliance Rate	**8.3%**	**14.7%**	**8.5%**
All Users			
Compliance Rate	**93.0%**	**84.3%**	**92.4%**
Non-Compliance Rate	**7.0%**	**15.7%**	**7.6%**

This data review indicates the overall SIU compliance rate decreased slightly based upon user monitoring and NBC results when compared to the previous reporting year, as the overall SIU rate of compliance was 91.1% in 2023 and 90.8% in 2024. There was a 7.6% difference in significant industrial user compliance rates observed between user and NBC sampling results. The difference in compliance rates observed for categorical users for these two types of effluent monitoring events is 12.8%. User self-monitoring reports submitted by categorical users indicated full compliance 96.3% of the time, while NBC monitoring found categorical users to

be in compliance 83.5% of the time for NBC sampling events. These differences in NBC and user monitoring compliance rates indicate that some users may not be properly collecting samples or reporting results that may not be truly representative of the quality of their effluent discharge and may even indicate that some firms may be falsifying monitoring reports. The NBC aggressively investigates these discrepancies through its industry and manhole sampling programs. It is important to note, however, that the rate of compliance for both monitoring methods is quite high. The comparison of compliance rates of the different classes of users for user self-monitoring and NBC monitoring reports is presented in FIGURE 10.

FIGURE 10
2024 Comparison of Compliance Rates for
Self-Monitoring and NBC Monitoring Reports

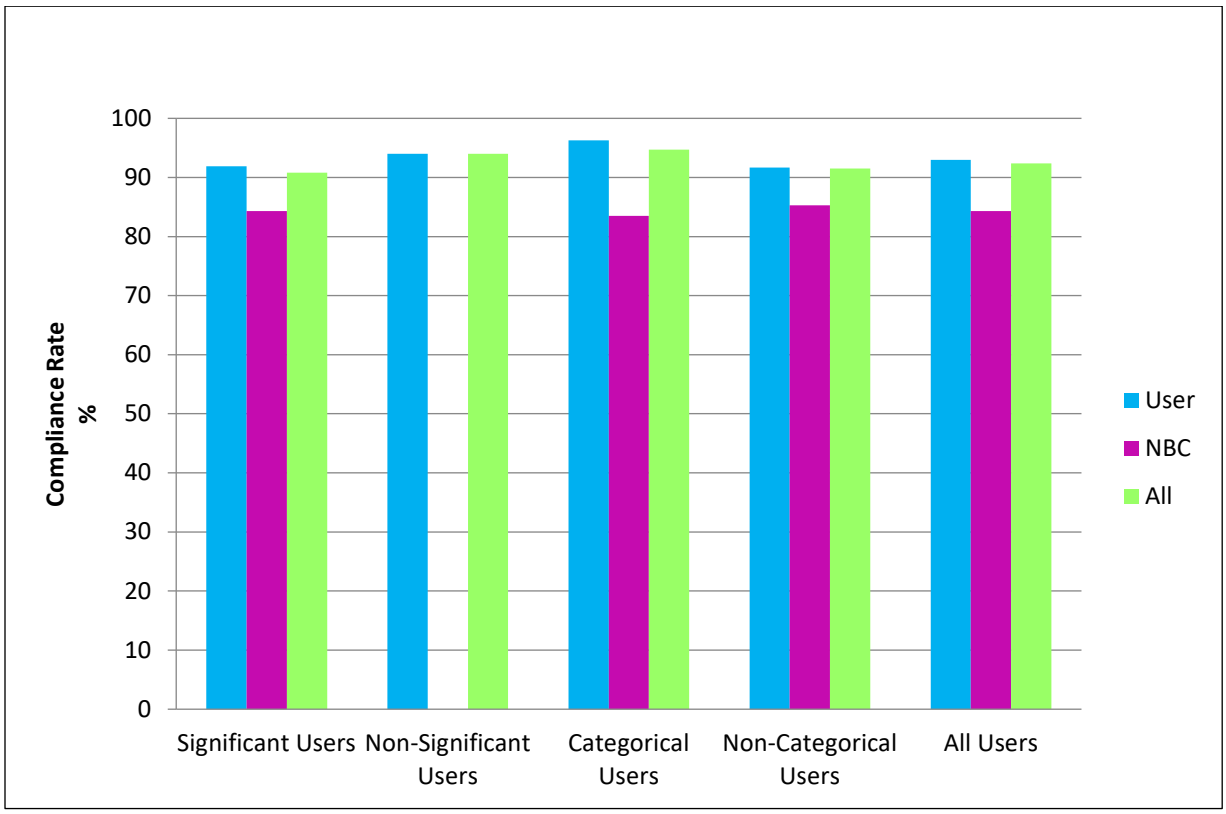


TABLE 18 provides a comparison of the compliance rates for different classes of users located in the Field's Point and Bucklin Point districts. The overall rate of compliance for Field's Point users was 95.1%, while it was 88.3% in Bucklin Point.

The Field's Point categorical users were in full compliance for 94.2% of the sampling events at their facilities in 2024. This compliance rate is a decrease from the 97.2% compliance rate in 2023. The Bucklin Point categorical users were in full compliance for 95.5% of the sampling events at their facilities in 2024. This compliance rate is an increase from the 83.3% in 2023. SIUs in the Field's Point district had a rate of compliance of 94.7%, higher than the 87.1% SIU compliance rate observed in the Bucklin Point district.

As can be seen from TABLE 18, non-categorical users in Field's Point had the highest rate of compliance, 95.6%, while the non-categorical users located in the Bucklin Point district had the highest rates of non-compliance, 13.7%. The rate of user compliance for all users in both districts virtually remained the same at to 92.4% in 2024 when compared to 2023, at 92.2%.

TABLE 18
Narragansett Bay Commission

Comparison of Compliance Rates
Between Field's Point and Bucklin Point Districts
for All Monitoring Results

January 1, 2024 - December 31, 2024

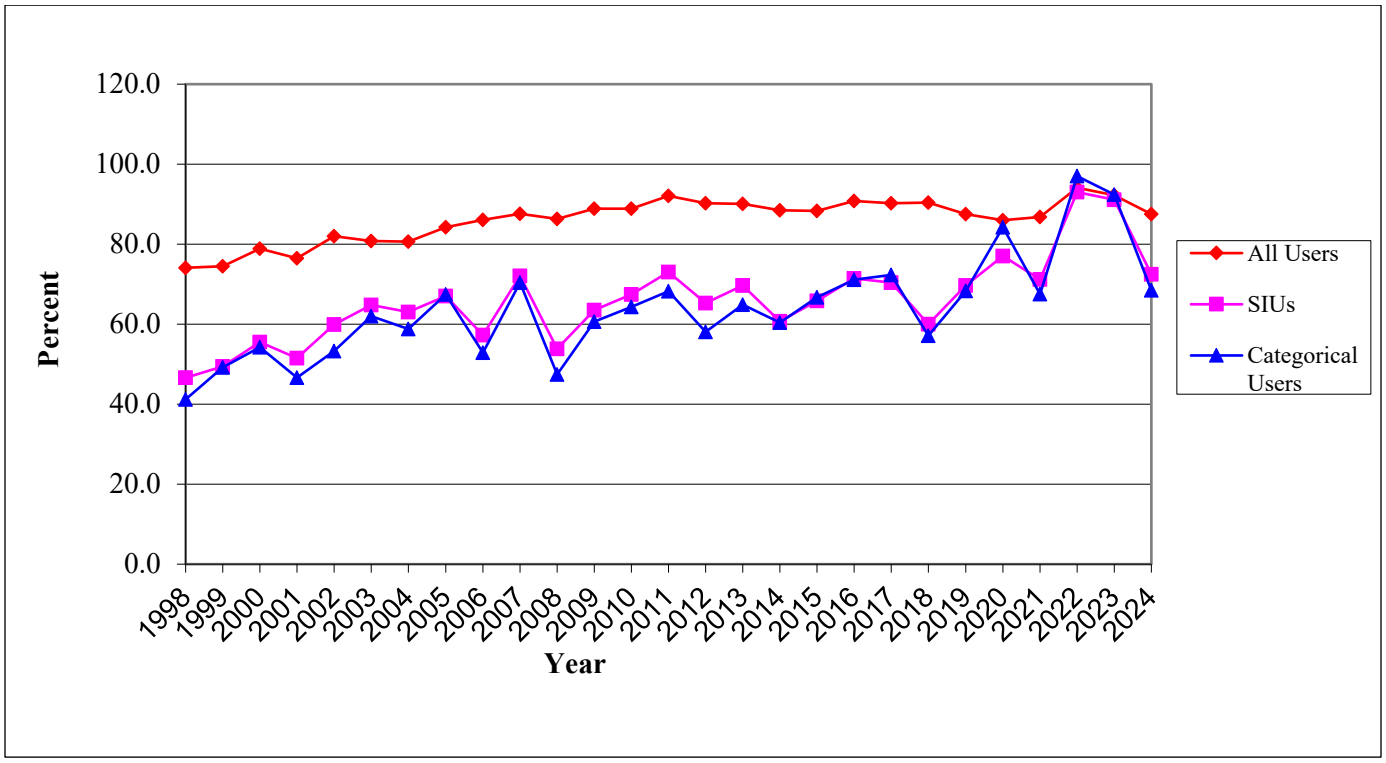
	Field's Point District	Bucklin Point District	Both Districts
Significant Users			
Compliance Rate	**94.7%**	**87.1%**	**90.8%**
Non-Compliance Rate	**5.3%**	**12.9%**	**9.2%**
Non-Significant Users			
Compliance Rate	**95.5%**	**91.3%**	**94.0%**
Non-Compliance Rate	**4.5%**	**8.7%**	**6.0%**
Categorical Users			
Compliance Rate	**94.2%**	**95.5%**	**94.7%**
Non-Compliance Rate	**5.8%**	**4.5%**	**5.3%**
Non-Categorical Users			
Compliance Rate	**95.6%**	**86.3%**	**91.5%**
Non-Compliance Rate	**4.4%**	**13.7%**	**8.5%**
All Users			
Compliance Rate	**95.1%**	**88.8%**	**92.4%**
Non-Compliance Rate	**4.9%**	**11.2%**	**7.6%**

TABLE 19 provides an analysis of the percentage of firms in each user class with perfect compliance records for effluent monitoring occurring during 2024. This analysis indicates that 68.4% of categorical users and 72.5% of significant users had perfect compliance records for all effluent parameters and sampling events. The compliance rate for categorical users decreased when compared to 2023, which was 70.3%. The compliance rate for significant users increased when compared to 2023 which was 66.7%. Non-significant users had the highest percentage of firms with perfect compliance records, 90.6%. During 2024, of

the 409 firms that sampled their waste stream, 358 firms or 85.7% of users were in full compliance with NBC and EPA discharge standards.

This analysis excludes the pH parameter and only reviews compliance with toxic pollutant discharge parameters. The perfect compliance rate for each year since 1998 is presented in FIGURE 11. The rate of all users with perfect compliance for effluent monitoring has shown marked improvement over the years. In 1998 the overall rate of compliance for all users was 74.1% compared with 87.5% in 2024.

FIGURE 11
Rate of Perfect Compliance with Effluent Parameters for All Users, Significant, and Categorical Users



The increase in user compliance rates from 1998 through 2024 can be attributed to NBC resampling requirements, open and prompt communications with users and to educational efforts by the Pretreatment staff regarding EPA and NBC requirements. In addition to educating users, Pollution Prevention staff offer free assistance to companies to resolve compliance issues. The NBC user education and technical assistance programs have resulted in significantly improved rates of compliance by NBC users.

TABLE 19

Narragansett Bay Commission

Analysis of Percentage of Firms With and Without Effluent Violations* for Various User Classes Field's Point and Bucklin Point Districts

January 1, 2024 - December 31, 2024

	% Firms Without Effluent Violations*	% Firms With Effluent Violations*
Categorical Users	**68.4%**	**31.6%**
Non-Categorical Users	**89.5%**	**10.5%**
Significant Users	**72.5%**	**27.5%**
Non-Significant Users	**90.6%**	**9.4%**
All Users	**87.5%**	**12.5%**

***Excludes pH Parameter Violations.**

Of the 2,298 analytical reports reviewed during 2024, there were 174 reports that indicated non-compliance with one or more of the NBC or EPA effluent parameters (excluding pH). Of these 174 non-compliant sample reports, 106 were of samples collected from 19 SIU facilities and 68 non-compliant samples were collected from 32 non-significant facilities.

Eleven of the 19 SIUs that had effluent violations during 2024 had five or more effluent parameter violations during the report period. In fact, of the 5,426 various pollutant parameters tested for by SIUs, these eleven firms were responsible for 130 parameter violations out of a total of 151 parameter violations reported by all significant users during 2024. These eleven firms accounted for 86.1% of all SIU parameter violations over the past year. As required by the EPA and DEM, the NBC has initiated some type of enforcement action against each of these firms. A listing of these eight firms and the current status of each of these users is provided in TABLE 20.

TABLE 20

Narragansett Bay Commission

Status of Significant Users With 5 or More Parameter Violations

January 1, 2024 - December 31, 2024

Company Name	Violations	User Status
Aspen Aerogels Rhode Island, LLC.	7	This Bucklin Point aerogel manufacturing firm experienced six Biochemical Oxygen Demand (BOD) violations and one Total Suspended Solids (TSS) violation. The firm attributed the BOD violations to the depletion of the activated carbon used in the pretreatment system. The existing activated carbon drums were replaced. The TSS violation was attributed to a faulty filter. The process that produced high concentrations of TSS was discontinued. The firm is in the process of resampling for the violations for BOD.
Cintas Corporation	52	This Bucklin Point industrial laundry facility experienced 48 total toxic organics (TTO) violations, specifically acetone, and 2 total oil and grease violations. The firm has been investigating the source of acetone in the waste stream. In 2023, the firm contacted NBC TAC staff. The firm has been investigating alternative treatment methods and operational procedures to reduce acetone concentrations in the waste stream. The firm continues to resample for TTO.

Denison Pharmaceuticals, LLC	12	This Bucklin Point pharmaceutical facility experienced eight TTO violations and four BOD violations. The BOD violations were attributed to high organics in the waste stream from production runs. The TTO violations were attributed to cleaning agents used in the clean-in-place system. The firm is still investigating options to reduce the TTO and BOD concentrations in its waste stream. The firm continues to resample for both TTO and BOD.
DiFruscia Industries, Inc.	5	This Field's Point metal finishing firm experienced one copper violation, two zinc violations and two cyanide violations. The firm attributed the metals violations to a faulty chemical addition pump and the cyanide violations to a faulty Oxidation Reduction Potential probe. The pump and ORP probe were replaced. The firm has returned to compliance.
Mahr, Inc.	7	This Field's Point metal finishing firm experienced five chromium and two copper violations. The firm attributed the violations to employee error. The employees were retrained. The firm has since removed the chromium plating line. The firm has returned to compliance.
Monarch Metal Finishing, Inc. (Railroad Avenue)	5	This Field's Point metal finishing firm experienced two copper violations, two nickel violations and one silver violation. The firm attributed the violations to channeling in its ion exchange columns. The firm has replaced the ion exchange system with a continuous acid/alkaline treatment tank. The firm has returned to compliance.
Monarch Metal Finishing, Inc. (Georgia Avenue)	5	This Field's Point metal finishing firm experienced two copper violations, two cyanide violations and one zinc violation. The firm attributed the violations to poor plating practices by employees and indicated that employees would be retrained on proper plating procedures. The firm has returned to compliance. The firm is in the process of relocating to its Railroad Avenue location.

Providence Specialty Products	14	This Field's Point cheese manufacturing firm experienced eleven BOD violations and three total oil and grease violations. All of the violations were from discharges from the cheese manufacturing operation. The firm had been experiencing oil and grease violations since prior to 2019. An Administrative Order (AO) was issued to the firm in 2023. Throughout 2024 the firm continued to optimize the system to comply with the total oil and grease and BOD limits. The firm is now in compliance with the total oil & grease limit. The firm continues to resample for BOD. More information regarding this matter can be found in CHAPTER VI.
Synagro Northeast, LLC	5	This Bucklin Point dewatering firm experienced four BOD violations and one total oil and grease violation. These violations were attributed to equipment failures and rainwater runoff discharging into the lagoon. The firm completed resampling and ceased discharges to the sewer.
Tri-Jay Co.	5	This Field's Point metal finishing firm experienced two silver violations and three copper violations. The silver violations were attributed to malfunctioning pH and ORP probes. The copper violations were attributed to broken pipes in the trough of the facility. The firm has replaced the pH and ORP probes and repaired the broken pipes. The firm has returned to compliance.

2024 Industrial User Compliance Status Summary

During 2024, the NBC continued to monitor and track the compliance status of all industrial users in both the Field's Point and Bucklin Point districts. Notices of Violation (NOV) were issued for all instances of non-compliance. A total of 2,364 NOVs were issued in 2024. A table detailing each type of NOV issued to each firm can be found in ATTACHMENT VOLUME II, SECTION 8. Compliance monitoring results for SIUs can be found in ATTACHMENT VOLUME II, SECTION 5 and a summary of the reports and requirements that were not submitted by the due date can be found in ATTACHMENT VOLUME II, SECTION. A summary of NBC enforcement actions, including the penalties assessed, is provided in CHAPTER VI.

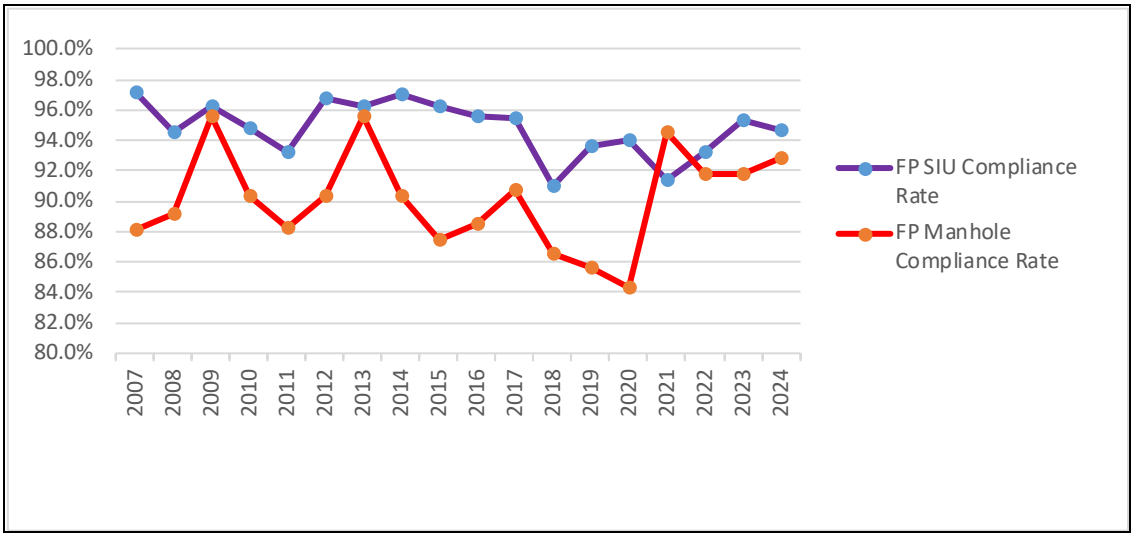
Industrial Surveillance Manhole Monitoring Program

During 2024, EM staff conducted sampling of an average of six manholes each week. The automatic samplers for manholes are typically programmed to take a grab sample every 15 minutes over an approximately 24 hour period and utilize either one large bottle to obtain a single composite sample or a 24 bottle carrousel to obtain 24 discrete samples. For carrousel installations, 24 composite samples consisting of five grab samples per bottle are obtained over the 24 hour sampling period. EM staff analyzes each of the 24 sample bottles for pH and any unusual wastewater characteristics. Should any unusual conditions be observed, one or possibly all of the 24 samples would be analyzed separately. If no unusual characteristics are observed, an equal volume aliquot of each of the 24 samples is composited into two separate samples for laboratory analyses for metals and cyanide. After obtaining results indicating noncompliance, Pretreatment staff attempts to determine the potential source of these noncompliant discharges. Manhole monitoring results continue to indicate declines in the quantities of toxics discharged into the sewer system.

During 2024, the NBC successfully sampled a total of 257 industrial manholes located throughout the two districts. In addition to collecting industrial manhole samples, 42 sampling events were conducted at residential manholes. Fifteen manholes were attempted to be monitored in both Field's Point and Bucklin Point, however, due to flow conditions or mechanical problems, effluent could not be collected by the automatic samplers at these sites. A total of 299 monitoring events were conducted at manholes in 2024. This is an increase from the 289 monitoring events conducted at manholes in 2023.

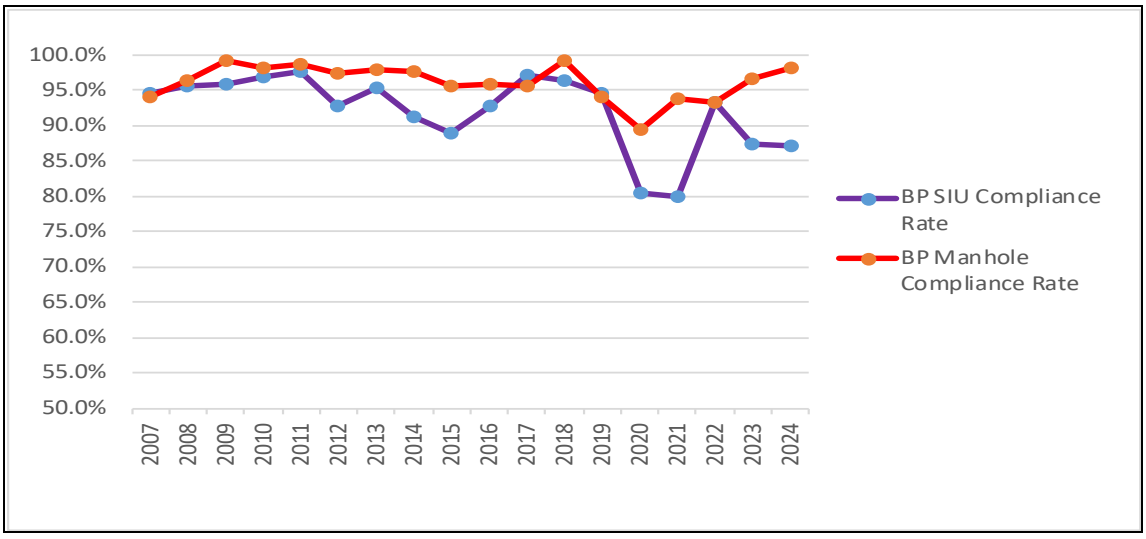
EM staff conducted 138 manhole monitoring events from industrial surveillance manholes in Field's Point during 2024. Of the 138 manhole monitoring events, 128 or 92.8% were in compliance with NBC discharge limitations. As can be seen in FIGURE 12 this compliance rate is slightly lower than the compliance rate for sampling within Field's Point SIU facilities in 2024, which was 94.7%.

FIGURE 12
Field's Point SIU vs Manhole Compliance Rates 2007 - 2024



EM staff conducted 119 monitoring events from industrial surveillance manholes in Bucklin Point during 2024. Of the 119 manhole monitoring events, 117 or 98.3% of the events were in compliance with NBC discharge limitations. As can be seen in FIGURE 13, this compliance rate is virtually the same as the compliance rate for samples collected within Bucklin Point SIU facilities in 2024, which was 87.1%.

FIGURE 13
Bucklin Point SIU vs Manhole Compliance Rates 2007 – 2024



A discussion of the results of sanitary monitoring is provided in CHAPTER V of this report and a summary of the manholes with elevated concentrations of toxics that could be attributed to a company is provided in TABLE 21 below. Industrial surveillance and sanitary manhole monitoring results for 2024 are provided in ATTACHMENT VOLUME II, SECTION 7.

TABLE 21
2024 Summary of Surveillance Manholes with Elevated Pollutant Concentrations

Field's Point

Manhole	Location	Description	Sample Dates	Parameter	Findings
F07	Providence	Ellenfield Street drainage area	6/26/24	Cu	All companies upstream of this manhole were inspected. The inspections did not show that any of the companies experienced treatment issues. They were operating properly at the time of the inspection.
F09A	Providence	Downstream of Technodic, Inc., a metal finishing facility	10/16/24	Cu	The company investigated its process operations and pretreatment system and found all to be in order and functioning properly. The copper concentration in the upstream manhole was elevated to just below the copper discharge limit of 1.20 mg/L. The high concentration was attributed to the upstream manhole. There is little to no flow in this manhole and there is grit in the line.
F53A	Providence	Downstream of Surface Coatings, LLC, a metal finishing facility	10/2/24	Ni	The company attributed the high nickel concentration to poor maintenance of its dragout tanks. Housekeeping at the facility was improved.
F70A	Providence	Downstream of A&F Plating Co., & Universal Plating Co., both metal finishing facilities	1/10/24 3/20/24	Cu, Ni, CN Cu, Ni, CN	After each of the incidents, both companies investigated their process operations and pretreatment systems and did not find the source of the high concentrations. A&F Plating retrained its employees, and Universal Plating improved its housekeeping procedures.
F70C	Providence	Downstream of A&F Plating Co., & Upstream of Universal Plating Co., both metal finishing facilities	3/20/24	Cu, Ni, CN	The company conducted an investigation of the facility and did not determine the source of the high concentrations. At this time, the employees were retrained.
F111A	Johnston	Downstream of Monarch Metal Finishing Co., a metal finishing facility	5/8/24 10/2/24	CN Cu, Ni	The company attributed the high cyanide concentration to the initial start up of the cyanide destruct system. The system has since been optimized. The high copper and nickel concentrations were attributed to insufficient chemicals being used in a treatment process. The company adjusted the delivery rate to ensure proper treatment.

Bucklin Point

Manhole	Location	Description	Sample Date	Parameter	Findings
B92C	Lincoln	Downstream manhole of Tanury Industries, Tanury Industries PVD., & Chemart Company, all metal finishing facilities	2/28/24	Ni	Both companies investigated their process operations and pretreatment systems. Chemart found that it was operating properly. The result of Tanury Industries' investigation was that it experienced treatment issues, specifically not being able to maintain the proper ORP. The issue was addressed and treatment returned to normal.

SURVEILLANCE MANHOLE MONITORING CONCLUSIONS

The NBC conducts surveillance manhole monitoring throughout the sewer districts on a routine basis. These manholes are located up and down stream of significant industrial users and zero discharge facilities as well as in residential areas. Pretreatment staff reviews the analytical data from all manhole monitoring events. Pretreatment and EM staff work together to find the source when the results indicate non-compliance with NBC discharge limitations. In 2024, Pretreatment staff investigated all incidents of non-compliant manhole results. Companies which discharge to the manhole were inspected and Notices of Violation letters were issued to companies found to be the source of the noncompliant wastewater. This aggressive manhole monitoring program will continue in 2025.

V. IMPACT OF THE NBC PRETREATMENT PROGRAM ON CONTROL OF TOXICS & INCOMPATIBLE WASTE

NBC Impact on the Control of Toxics and Incompatible Wastes

The NBC continues to improve receiving water quality by meeting and exceeding compliance with RIPDES discharge standards, limiting the impact wastewater treatment facility effluent has on Narragansett Bay. To this end, influent and effluent metals and cyanide loading data are evaluated to provide a measure of the amount of industrial waste being discharged to the sewer system, as well as a means of quantifying the effectiveness of the NBC in controlling and reducing such discharges. The NBC has analyzed and tracked the toxic pollutant loading trends at its treatment facilities since the creation of the agency.

The data and analyses presented in this chapter summarize the 2024 monitoring initiatives performed by Environmental Monitoring (EM), including monitoring of the treatment facilities, the collection system, industrial and commercial users, and the receiving waters of Narragansett Bay. The Pretreatment Section works in conjunction with the EM, Laboratory, Technical Analysis & Compliance (TAC), Operations, and Engineering sections to control toxics from entering and impacting the sewer system. EM conducts sampling of wastewater from all discharge sources into the NBC system, throughout the collection and treatment systems, and ultimately to its final fate as either sludge or as treated effluent discharged into Narragansett Bay.

NBC RIPDES Permit Requirements

In September 2017, the DEM issued RIPDES permits to the Field's Point, RI0100315, and Bucklin Point, RI0100072, treatment facilities. These permits became effective on December 1, 2017. Several pollutants were added to or removed from the monitoring requirement imposed by the permits.

The removal of a parameter from a RIPDES permit, or a change to monitor-only status is a clear indication that the levels of the pollutant discharged are no longer a concern for the DEM. Often this can be directly attributed to effective efforts by NBC staff. The timely collection of samples by EM, low-level trace analysis by the Laboratory, effective regulation and education of industry by Pretreatment, technical assistance provided to industry, and effective treatment performed by Operations are the key components of an efficient wastewater treatment organization.

The 2017 permits included limits for copper and nickel at Bucklin Point that were substantially lower than the interim limits previously in place for these metals. The NBC could not reliably attain these new limits. The NBC appealed these and several other conditions of both RIPDES permits, and a consent order was issued on July 19, 2018 to temporarily stay these conditions. A formal Consent Agreement (CA) (RIA-424) was negotiated and issued on September 5, 2018. The CA was issued on January 8, 2019, and included the following changes to the original permit conditions:

Field's Point:

- CBOD: Continued temporary stays on seasonal limits pending permit modification
- TSS: Continued temporary stays on seasonal limits pending permit modification
- Wet Weather Enterococci: Daily maximum limit of 276 cfu/100 mL changed to monitor only
- Wet Weather Total Residual Chlorine: Daily maximum limit of 20 ug/L changed to monitor only

Bucklin Point:

- CBOD: Continued temporary stays on seasonal limits pending permit modification
- TSS: Continued temporary stays on seasonal limits pending permit modification
- Copper: Interim monthly average and daily maximum limits of 29.8 ug/L and 86.1 ug/L were continued from previous Consent Agreement RIA-330; replacing 2017 permit limits of 6.5 ug/L and 6.5 ug/L, respectively
- Nickel: Interim monthly average limit of 25.0 ug/L replaced permit limit of 14.3 ug/L
- Wet Weather Enterococci: Daily maximum limit of 276 cfu/100 mL changed to monitor only
- Wet Weather Total Residual Chlorine: Daily maximum limit of 20 ug/L changed to monitor only

The wet weather enterococci and total residual chlorine (TRC) limit changes and the interim limits for copper and nickel at Bucklin Point were temporary and reevaluated by the DEM following evaluation of data summaries submitted by the NBC on December 1, 2022. On March 8, 2023, DEM issued a letter to the NBC following this evaluation. In the letter, DEM extended the interim limits due to good cause from February 1, 2023 until reissuance of the RIPDES permit.

A formal Permit Modification was issued to the NBC and became effective on April 1, 2019. This modification set new seasonal limits for TSS and CBOD. These limits replaced the stayed limits from the 2017 permits. The final changes are as follows:

Field's Point:

- CBOD: May – October limits:
  - Average monthly load from 5,421 lbs/day to 10,842 lbs/day
  - Maximum daily load from 8,132 lbs/day to 16,263 lbs/day
  - Average monthly and average weekly concentration from 10 mg/L to 20 mg/L
  - Maximum daily concentration from 15 mg/L to 30 mg/L
- TSS: May – October limits:
  - Maximum daily load from 16,263 lbs/day to 24,395 lbs/day
  - Maximum daily concentration from 30 mg/L to 45 mg/L
  - All other TSS limits remain unchanged

Bucklin Point:

- CBOD: May – October limits:
  - Average monthly load from 2,585 lbs/day to 5,171 lbs/day
  - Maximum daily load from 3,878 lbs/day to 7,756 lbs/day
  - Average monthly and average weekly concentration from 10 mg/L to 20 mg/L
  - Maximum daily concentration from 15 mg/L to 30 mg/L
- TSS: May – October limits:
  - Maximum daily load from 7,756 lbs/day to 11,634 lbs/day
  - Maximum daily concentration from 30 mg/L to 45 mg/L
  - All other TSS limits remain unchanged

Sample Collection at the Wastewater Treatment Facilities

All sample collection, preservation, and storage at the NBC treatment facilities is performed with strict adherence to EPA protocols. As detailed in the RIPDES permits, the Field's Point and Bucklin Point treatment facilities are required to sample the influent and effluent for toxic and conventional pollutants on a regular basis.

Toxic pollutant monitoring requirements include 24-hour composite sample collections for the analysis of chromium, copper, lead, mercury, nickel, silver, and zinc in the influent and effluent. Most metals and cyanide measurements are required twice per week at both plants and some metals are only sampled monthly. During 2024, EM staff collected all permit-required composite samples of the waste streams at the two treatment facilities.

Field's Point influent samples are collected at the single interceptor that feeds the facility, after bar screening and prior to the grit removal tanks. Influent cyanide samples are collected from this location twice per week and consist of nine separate grab samples, combined by sample date prior to analysis. At Bucklin Point, influent composite samples are collected from the Blackstone Valley Interceptor (BVI) and East Providence Interceptor (EPI) that bring wastewater to the plant. These samples are combined based upon the flow percentages for the sample collection period. Influent cyanide samples are collected twice per week from the two Bucklin Point interceptors and consist of nine separate grab samples from each location. These samples are combined flow-proportionately in the same way as the metals and conventional pollutant composite collections.

Final effluent sample collections at both facilities are downstream of all treatment processes. Composite effluent samples are analyzed by the Laboratory for conventional pollutants and metals including copper, lead, mercury, nickel, silver, and zinc, as well as nutrients. The nutrients analyzed include nitrite, nitrate, ammonia, TKN, and total phosphorus. Nitrate is determined by difference from a combined nitrite+nitrate measurement and a nitrite measurement. The Laboratory has three nutrient auto-analyzers, including separate instrumentation to process treatment plant samples and saltwater samples. These instruments have improved analysis efficiency for nutrient measurements, and analytical results from this equipment continue to produce better precision and accuracy than previous analyses performed before 2013.

Other required sample collections for plant monitoring include daily fecal coliform and enterococci bacteria, CBOD, TSS, pH, and TRC. Effluent samples are also collected and analyzed for dissolved metals and oil and grease at both facilities on a monthly basis. Lastly, whole effluent bioassay toxicity tests are also conducted quarterly at both facilities.

Clean Sampling Methods

All treatment facility sampling is performed with methods outlined in *US-EPA Method 1669 – Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*. As laboratory detection limits continue to be lowered, EM and TAC evaluate sample collection and handling procedures to ensure that contamination will not significantly affect the data results. EM uses ultra-clean sampling methodology for mercury developed by Hampton Roads Sanitation District of Virginia. This methodology uses sample bottles, tubing, and pumps that allow sample collection and transfer without opening bottle tops, eliminating many potential sources of contamination.

EM has implemented a plant sampling quality assurance program to evaluate the success of its current clean sampling program in limiting contamination in nutrient and metals composite sampling of the influent and effluent at the treatment facilities. The program defines a strict protocol for cleaning the 10- and 15-liter HDPE composite carboys used in sampling. This procedure involves dishwasher cleaning with laboratory-grade soap, followed by acid-cleaning with nitric acid. Carboys are then acid-cleaned using hydrochloric acid and rinsed with distilled, de-ionized (DI) water that has been treated to a purity minimum of 15 mega ohms per centimeter resistivity. Another key element of the plant sampling quality assurance program is the regular cleaning and replacement of the suction pump tubing used in drawing the waste stream sample into the composite carboy. This cleaning follows the same steps as the carboy cleaning. The success of the carboy and tubing cleaning is evaluated with the collection of blank samples. For these blank samples DI water is added to cleaned carboys and held for a minimum of 12 hours to simulate normal sample holding times. This water is then analyzed for the same parameters as the wastewater sample. Tube cleaning is evaluated by drawing DI water through the tubing into pre-cleaned containers. Results from these samples have helped EM, in conjunction with the Laboratory, determine the steps needed to continue to improve sampling and laboratory procedures and instrumentation. Sampler tubing is also replaced frequently, in some cases monthly, to ensure highest quality samples are collected.

Non-Routine Sampling Activities

The following summarizes the non-routine sampling activities conducted at both Field's Point and Bucklin Point during 2024:

- The NBC continued monitoring for PFAS compounds from the influent, effluent, and biosolids throughout 2024. This sampling initially began at both facilities in September 2020. In January 2024, the EPA finalized Method 1633, *Analysis of Per- and Polufluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS*. EM updated and developed standard operating procedures for sampling PFAS based upon this method. The method requires grab samples to be collected instead of the previously utilized composite sampling method. PFAS monitoring will continue in 2025 and is expected to be expanded to industrial and commercial facility monitoring.

- The NBC continued participation in wastewater surveillance testing COVID-19 in 2024, shipping plant influent samples to Biobot Analytics once per week and the Rhode Island Department of Health (DOH) Laboratory twice per week for analysis. Both laboratories reported the data as it became available. In addition, DOH created a data hub on their website sharing surveillance data obtained for wastewater facilities throughout the state and expanded to other viruses including Influenza and RSV. This monitoring program is expected to continue in 2025.

- Throughout 2024, EM began collecting treated effluent samples from both facilities on a monthly basis for Dr. Hongjie Wang, Associate Professor of Oceanography at the University of Rhode Island. In collaboration with EPA and URI GSO are collaborating on integrating a carbonate model with a ROMS model to predict ocean acidification in Narragansett Bay. To get a better idea on seasonal variations that may impact the data, Dr. Wang requested this monitoring continue for another year.

- At Field's Point, sampling to evaluate the effectiveness of peracetic acid as a disinfectant alternative to sodium hypochlorite continued through 2024, with collections occurring immediately upstream of the chlorine contact tank prior to hypochlorite addition and occurring during different flow conditions. Sampling expanded in 2024 to include wet weather influent samples. All samples were delivered to the Laboratory, which conducted experiments using different dosages and contact times of peracetic acid.

- In 2024, a digester rehabilitation project began at Bucklin Point which involved extra sampling of the material being removed during this work. Three feed sludge and three filtrate samples were collected per day during the week, as well as filter cake samples for each truckload of dewatered solids sent offsite. The samples were analyzed for total suspended solids, total solids, and/or ammonia analysis. A portion of each filtrate sample, was diluted and provided to Operations for testing using their ammonia testing kits. Two digesters were rehabilitated in 2024 with the remaining digester is expected to be completed in 2025.

- In January and February 2024, during 24-hour-or-greater duration wet weather events at Field's Point, it was observed that TSS results appeared consistently lower at the influent wet weather sampler when compared to the influent daily sampler. Ideally the results should be similar, as the sample points are in the same channel of flow. The influent daily sampler collects a sample every half hour into a 10-liter carboy. This carboy is delivered to the Laboratory where the samples are poured off into appropriate containers for analysis. The wet weather sampler is a 24-bottle carousel sampler, where each bottle represents an hour. Depending on the length of the wet weather event, the corresponding bottles are then composited into a single sample. Multiple sampling events were conducted between April through August to try and understand the observed discrepancies. A contributor to the discrepancies observed was most likely due to improper mixing of individual wet weather carousel bottle grabs prior to compositing. However, it was also determined that some degree of difference in results were expected due to the different collection methods specified in the permit along with the natural variability of wastewater influent.

Analysis of Influent Loading Data

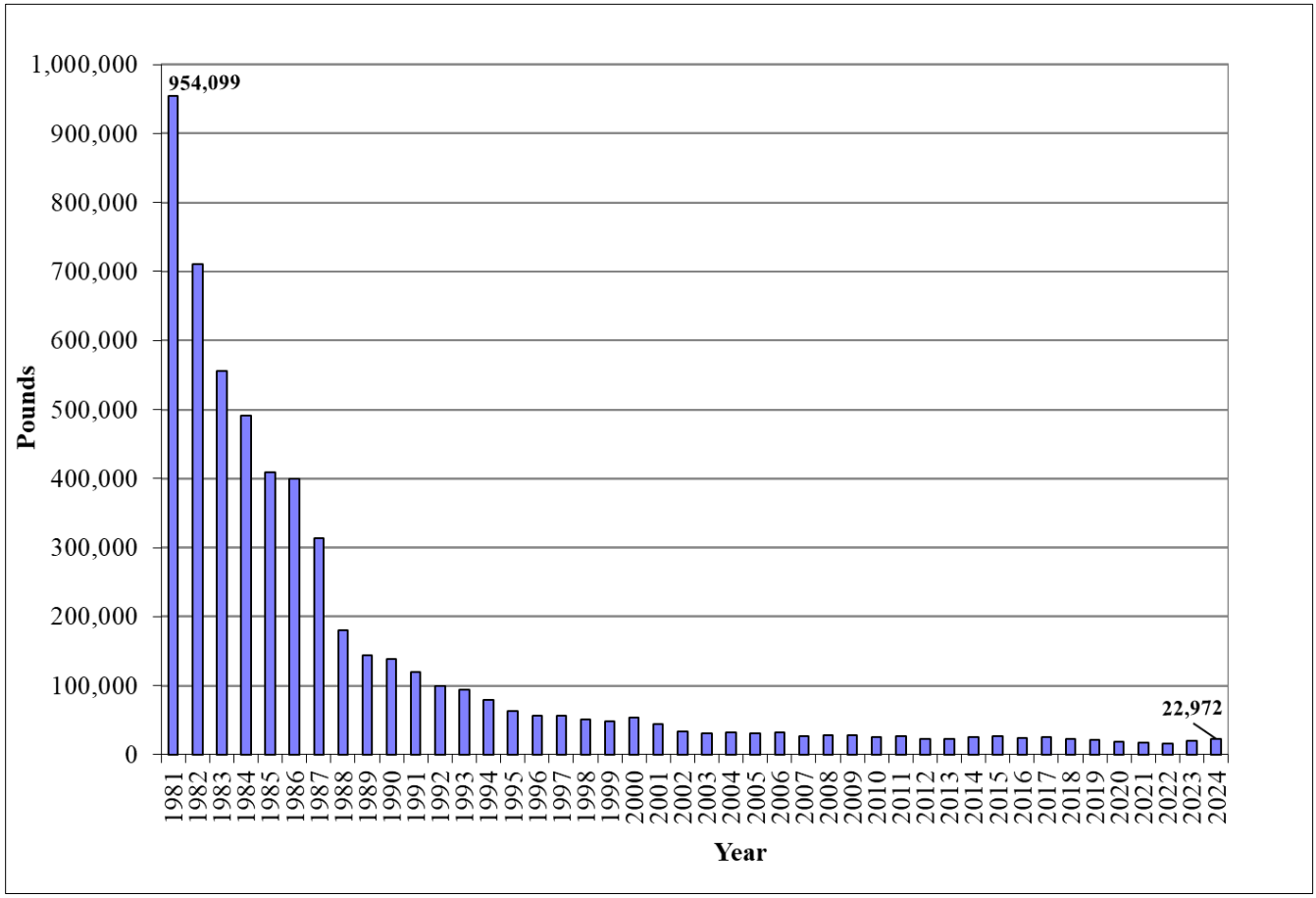
Comparing recent and historical influent loading data is useful for evaluating the success of the Pretreatment Program in controlling the quality of industrial wastewater discharged to the treatment plants. Analysis of historical toxic pollutant loadings to the two NBC wastewater treatment facilities has indicated a downward trend.

Records of data for metals and cyanide in the Field's Point collection system have been collected and analyzed since 1981. Significantly less historical loading data are available for Bucklin Point, which was acquired by the NBC in 1992. The historical Bucklin Point data presented in this chapter covers the period from 1994 to present for metals, and 1991 to present for cyanide.

Field's Point District – Influent Loading Analysis

FIGURES 14 and 15 depict the reduction in metals and cyanide loadings to Field's Point between 1981, the year before the NBC assumed ownership and operation of the treatment facility and portions of the metropolitan Providence sewer system, and the present.

FIGURE 14
Field's Point Total Metals Influent Loading Trend Analysis



Over the past 43 years, there has been a significant downward trend in the total loading of metals as can be seen in FIGURE 14. Total metals loading is defined as the sum of cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc loadings. Total metals loadings have shown a decrease of 97.6% since 1981. In fact, the total metals loadings to Field's Point have been below the annual Maximum Allowable Headworks Loadings (MAHL) of 349,233 pounds since the late 1980s. Since 2002, the total metals loading has been relatively consistent, with only minor fluctuations over more recent years. Influent metals loadings in 2024 increased by 3,631.7 pounds, or 18.8% from 2023.

Cyanide loading data for the same time period indicates a similar overall downward trend, as can be seen in FIGURE 15, with a dramatic 98.4% decrease in loading between 1981 and 2024. Between 2023 and 2024 there was a 264.8 pound, or 25.4% increase in cyanide influent loading into Field's Point. The long-term reduction in the metals and cyanide loadings to the treatment facility is largely due to the efforts and success of the toxic reduction and control programs.

FIGURE 15
Field's Point Cyanide Influent Loading Trend Analysis

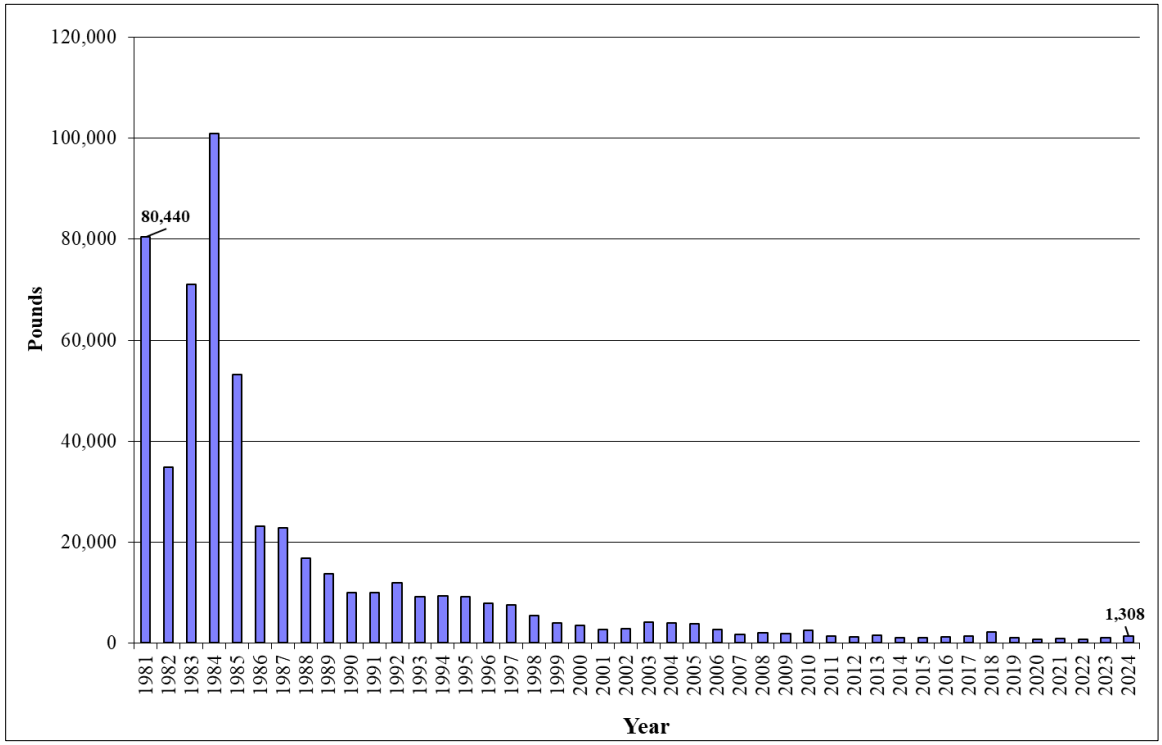


TABLE 22 provides a comparison of the 2023 and 2024 metals and cyanide loadings to Field's Point. Loadings were calculated based on monthly total flow and average metals concentrations. The annual influent loading for these metals showed an increase of 18.8%, or 3,631.7 pounds in 2024 when compared to 2023. Seven of the eight metals included in this calculation exhibited increased loadings in 2024. The largest percent increase was seen in mercury, which increased by 2.32 pounds or 94.3%. This increase in loading is primarily due to a temporary increase in the detection limit for mercury rather than actual higher levels of mercury detected in plant influent. Mercury samples were sent to a contract lab in September 2024. All results from that month were under the detection limit, but the contract lab's minimum detection limit is 0.20 ppb, higher than the NBC in-house results, thus increasing the estimated loadings. The one metal that exhibited a decrease this year was cadmium, which decreased by 1.3% or 0.3 pounds. Cyanide exhibited an increase of 264.8 pounds, or 25.4%, from 2023. Overall, the influent loading of metals remains low due to strict regulation by Pretreatment, educational efforts, and the NBC's proactive approach to pollution prevention. The decreases since the NBC has taken over the operation of Field's Point demonstrate the continued commitment to vigilant enforcement and continued encouragement of users to implement pollution prevention measures. The average daily influent flow into Field's Point was 47.6 MGD in 2024 versus 48.8 MGD in 2023. Industrial flow for Field's Point in 2024 was 870,392 gallons per day.

TABLE 22
Comparison of 2023 – 2024 Annual Loadings to Field's Point

Pollutant	2023 (Pounds)	2024 (Pounds)	Total Pound Change	% Change
Total Cadmium	23.0	22.7	-0.3	-1.3%
Total Chromium	780.0	814.9	34.9	4.5%
Total Copper	3,928.2	4,496.6	568.4	14.5%
Total Lead	875.3	1,003.8	128.5	14.7%
Total Mercury	2.46	4.78	2.32	94.3%
Total Nickel	2,434.1	2,718.1	284.0	11.7%
Total Silver	55.9	63.2	7.3	13.1%
Total Zinc	11,241.2	13,847.8	2,606.6	23.2%
Total Metals	19,340.2	22,971.9	3,631.7	18.8%
Total Cyanide	1,042.8	1,307.6	264.8	25.4%

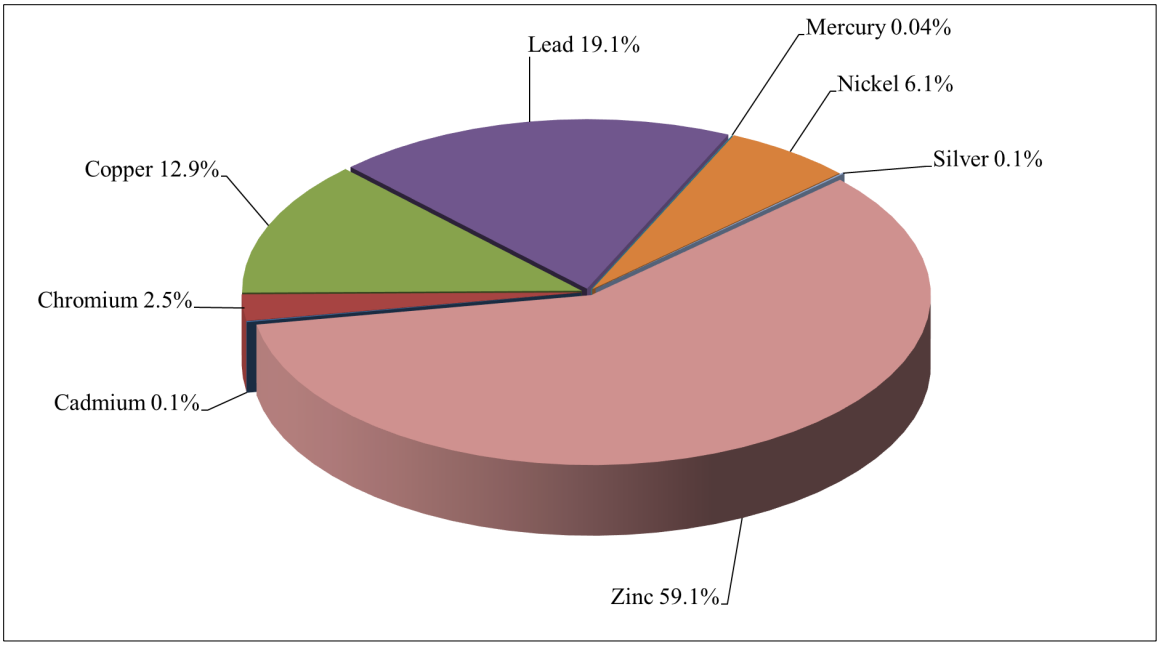
In 2024, the Field's Point facility provided advanced-secondary or wet weather treatment to an additional 1.47 billion gallons of combined sewage, stormwater, and infiltration flow that was captured in the Providence CSO Tunnel, approximately 150 million gallons less than in 2023. Metals results from Providence CSO tunnel effluent samples were flow-weighted prior to summary in this report, as concentrations can vary greatly depending upon the amount of flow that is being pumped from the tunnel. As can be seen in TABLE 23, metals in the tunnel effluent made up 4.3% of the total plant influent metals loading in 2024, ranging from 1.6% (silver) to 18.9% (lead), depending upon the metal.

TABLE 23
Comparison of 2024 Annual Loading:
Tunnel Effluent Loadings to Field's Point Influent Loadings

Pollutant	Annual Influent Loading (lbs) 2024	Annual Tunnel Effluent Loading (lbs) 2024	Percent of Influent
Cadmium	22.7	0.9	4.0%
Chromium	814.9	25.0	3.1%
Copper	4,496.6	128.7	2.9%
Lead	1,003.8	190.2	18.9%
Mercury	4.78	0.18	3.8%
Nickel	2,718.1	61.2	2.3%
Silver	63.2	1.0	1.6%
Zinc	13,847.8	588.9	4.3%
Total	22,971.9	996.1	4.3%

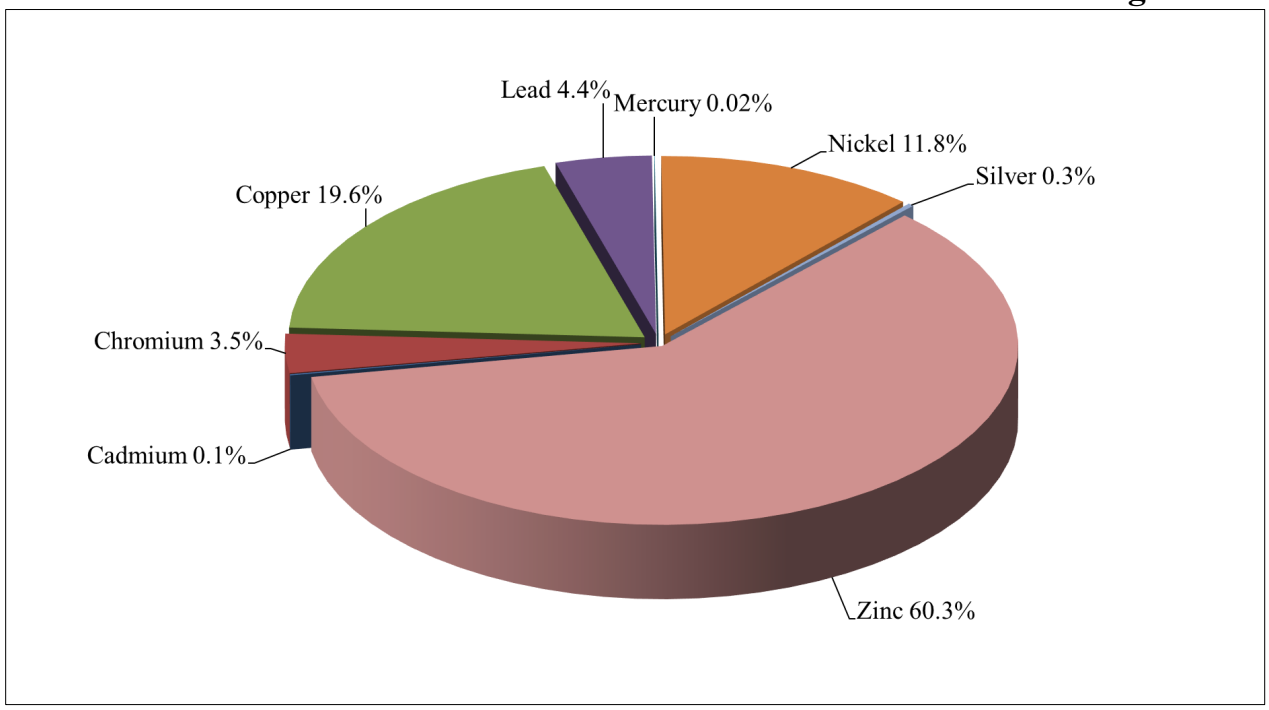
A percentage breakdown of the various metals discharged to Field's Point via the Providence CSO Tunnel is provided in FIGURE 16. The make-up of the Providence CSO Tunnel effluent is similar to the typical influent with notable exceptions of increased lead contribution and decreased proportional copper and nickel contributions. Lead often makes up a high proportion of the metal pollutants found in stormwater due to runoff from roadways. Since the tunnel receives large amounts of stormwater from the service district, lead input to Field's Point from the tunnel is expected to be high.

FIGURE 16
Breakdown of Total Metals – 2024 Loading from CSO Tunnel Effluent



A percentage breakdown of the various metals in Field's Point influent is provided in FIGURE 17. The majority of metal loadings to Field's Point are from zinc, copper, and nickel. These metals account for 91.7% of the total metal loadings. The overall percent contribution of these three metals in 2024 is virtually the same as the percent contribution of these three metals in 2023. The total loading of zinc in 2024 was 13,847.8 pounds, representing 60.3% of the total metals load and the highest load of any toxic pollutant impacting the Field's Point facility. As will be shown later in this chapter, the majority of zinc loading is attributed to residential sources. Copper was the next highest pollutant load to Field's Point at 4,496.6 pounds or 19.6% of the total metals loading, followed by nickel at 2,718.1 pounds or 11.8%. The loadings levels of toxic metal pollutants to Field's Point in 2024 were all well within the MAHL levels for each pollutant of concern, when expressed on an annual basis. This is a testament to the success of the NBC toxics reduction and control programs.

FIGURE 17
Breakdown of Total Metals – Field's Point 2024 Influent Loading



Oil and Grease Inputs to Field's Point

Monthly sampling of oil and grease inputs to Field's Point revealed low and consistent concentrations. Monthly average influent concentrations ranged from 9.13 ppm to 33.77 ppm during 2024. Monthly average effluent concentrations were lower than influent concentrations, with all results below detection (i.e., <4.00 ppm). Low inputs are the direct result of Pretreatment efforts to permit, inspect, and monitor industrial and commercial establishments, including food service establishments, with the potential to impact the NBC with fats, oils, and grease.

The NBC RIPDES permit requires monthly effluent sampling for oil and grease, with three grab samples collected over the course of a 24-hour period, one grab per shift. The effluent grab samples are analyzed separately, and the maximum and average results are reported on monthly discharge monitoring reports (DMR). The RIPDES permit does not set a discharge limit for oil and grease. The 2024 oil and grease data are listed in ATTACHMENT VOLUME II, SECTION 10.

Field's Point Influent and Effluent Organics

Volatile organic compounds (VOC) were monitored monthly in influent and effluent grab samples at the Field's Point facility in 2024. The analysis of 36 organic compounds using EPA Method 624.1 is routinely performed to ensure that the amount of organics introduced to the facility is being adequately regulated by the Pretreatment section. High levels of organics can be dangerous to the health and safety of NBC employees, the general public and can potentially

pose a significant hazard to the microbial population that is responsible for the removal of organic carbon in the influent wastewater.

Of the 432 analytical results for influent samples obtained in 2024, 87.7% of these were at non-detectable concentration levels. Of the 432 analytical results of effluent samples obtained in 2024, 97.7% of the results were at non-detectable concentration levels. The low levels of VOCs observed demonstrate the effectiveness of the Pretreatment efforts to reduce the amount of organic pollutants introduced to the NBC facilities, dramatically reducing the potential for adverse impacts on NBC receiving waters.

Field's Point Influent and Effluent Nitrogen

The RIPDES permit requires Field's Point to meet seasonal May through October monthly average permit limits of 5.0 mg/L for total nitrogen concentration and 2,711 pounds per day for total nitrogen loading. Biological Nutrient Removal (BNR) processes ran extremely well in 2024 and monthly average permit limits were met during each month of the permit season. Overall, Field's Point achieved a total nitrogen removal rate of 89.1% over these six months. Daily flows to the facility during this season, averaged 40.15 MGD, with an influent total nitrogen concentration average of 27.3 mg/L and average influent load of 8,258.7 pounds per day. The May through October average effluent total nitrogen concentration was 3.0 mg/L with an average loading of 924.1 pounds per day. The 2024 nitrogen data are listed in ATTACHMENT VOLUME II, SECTION 10.

pH Variability at Field's Point: Influent and Effluent

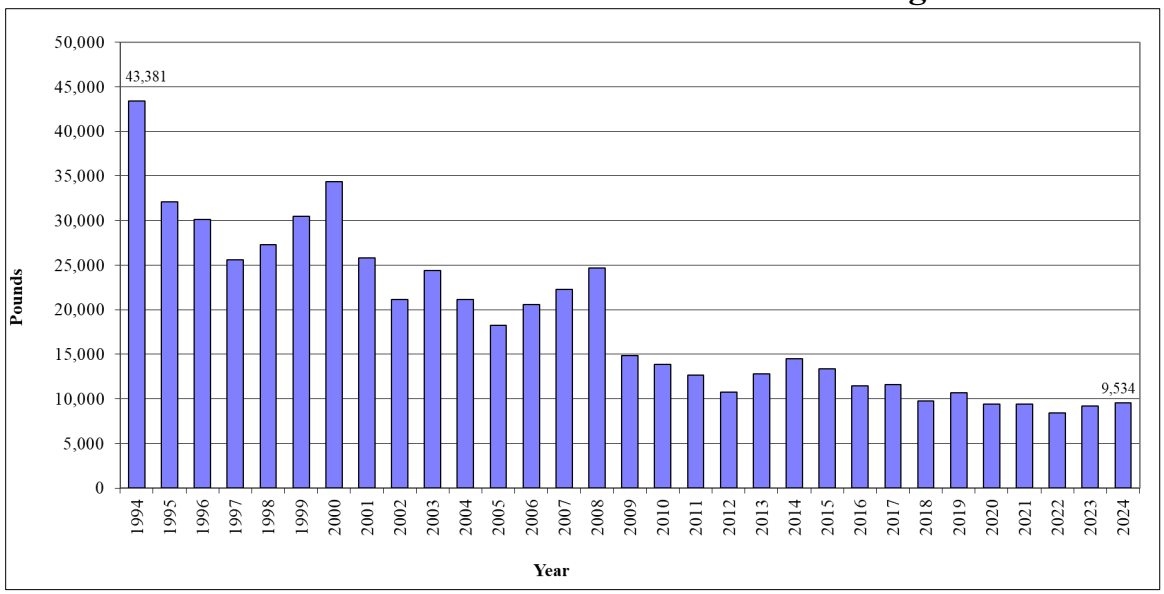
The pH of the Field's Point influent is measured once per day by Laboratory staff on a high-precision Orion pH meter. Grab samples are collected by EM and immediately transferred to the lab for analysis. EM staff collected 366 influent pH samples during 2024. The pH range of the influent sample measurements was from 6.73 to 7.53 standard units (s.u.). The influent waste stream is also monitored with a continuous pH probe. This record shows a clear diurnal pattern with differences of approximately 1 s.u. No NBC wastewater treatment facility process was knowingly negatively impacted by influent pH fluctuations during the year. There were also no persistent excursions in influent pH during 2024 and no negative effect on normal plant operation process controls was noted. Effluent grab samples were collected once per day, resulting in 366 samples collected in 2024. The addition of sodium hydroxide to the process at Field's Point enables more effective biological nutrient reduction and typically maintains the effluent pH within the desired permit range. Over the year, the effluent pH ranged from 6.36 to 7.21 s.u.

The lack of pH permit violations during 2024 reflects the success of the Field's Point Operations staff and the Pretreatment Program, which prevented the discharge of low pH wastewater by industry.

Bucklin Point District – Influent Loading Analysis

FIGURES 18 and 19 depict the overall reduction in metals and cyanide loadings to Bucklin Point between 1994 and 2024. Over the past 30 years, there has been a downward trend in the total loadings of metals. Total metals loading is defined as the sum of cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc loadings. Total metals loadings have decreased by 78.0% since 1994. The 2024 total metals loading to Bucklin Point remained well below the annual MAHL of 72,874 pounds.

FIGURE 18
Bucklin Point Total Metals Influent Loading Trend



Cyanide loadings at Bucklin Point have also exhibited a dramatic historical decrease as can be seen in FIGURE 19. Since 1991, cyanide loading has decreased by 85.8%. Loadings remain well below the MAHL level established to protect the treatment facility and the environment.

FIGURE 19
Bucklin Point Cyanide Influent Loading Trend

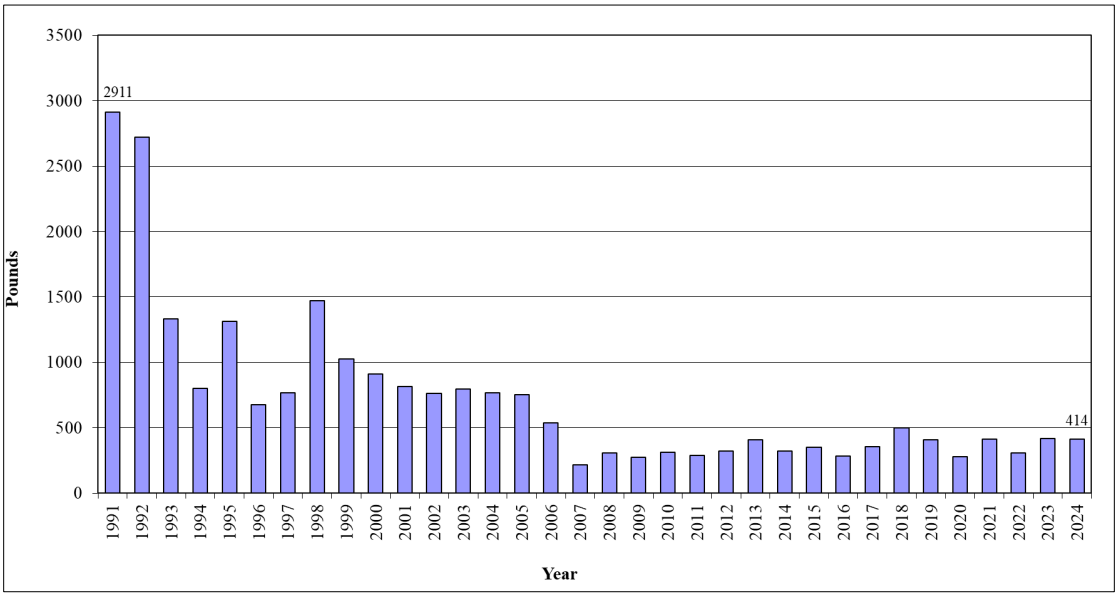


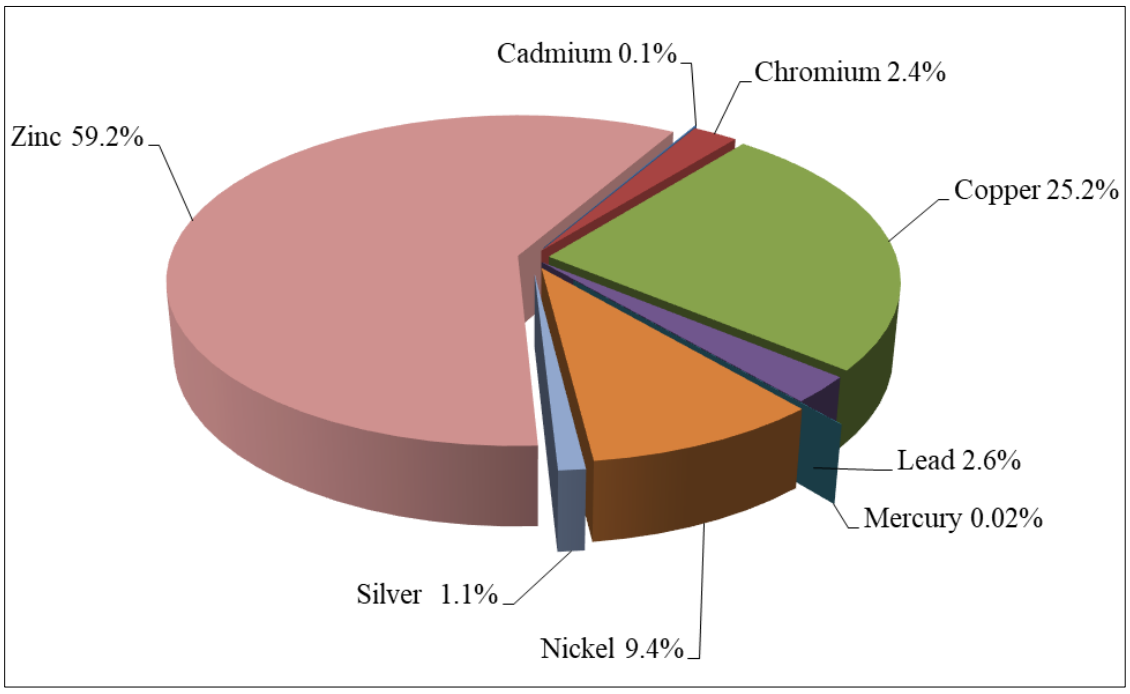
TABLE 24 compares individual Bucklin Point metals and cyanide loadings from 2024 to the previous year. Loading estimates were calculated based on monthly total flow and average metals concentrations. The annual influent loading for these metals showed an overall increase of 3.7%, or 337.6 pounds in 2024 when compared to 2023. Five individual influent metals showed an increase in loading in 2024. The largest percent increase occurred in silver, which increased by 24.4%, or 20.2 pounds. The largest increase by weight was observed in zinc, up 216.1 pounds or 4.0%. In contrast, loadings of three influent metals decreased this year. The largest percent decrease occurred in cadmium, which decreased by 8.5%, or 0.8 pounds. The largest decrease by weight occurred in lead, which decreased by 2.4% or 6.3 pounds. Cyanide exhibited a decrease of 1.0%, or 4.2 pounds, when compared to 2023. Overall, influent loading of metals and cyanide remains low due to strict regulation by Pretreatment, NBC educational efforts, and a proactive approach to pollution prevention. The decreases since the NBC has taken over the operation of Bucklin Point demonstrate the continued commitment to vigilant enforcement and continued encouragement of users to implement pollution prevention measures. Influent flow into Bucklin Point was slightly lower this year compared to last, with an average daily influent flow of 23.5 MGD in 2024 versus 23.9 MGD in 2023. Industrial flow to Bucklin Point was 865,996 gallons per day in 2024.

TABLE 24
Comparison of 2023 – 2024 Annual Loadings to Bucklin Point

Pollutant	2023 Pounds	2024 Pounds	Total Pound Change	% Change
Total Cadmium	9.4	8.6	-0.8	-8.5%
Total Chromium	233.8	229.6	-4.2	-1.8%
Total Copper	2,385.1	2,399.5	14.4	0.6%
Total Lead	257.9	251.6	-6.3	-2.4%
Total Mercury	1.53	1.72	0.19	12.4%
Total Nickel	797.1	895.1	98.0	12.3%
Total Silver	82.7	102.9	20.2	24.4%
Total Zinc	5,429.1	5,645.2	216.1	4.0%
Total Metals	9,196.6	9,534.2	337.6	3.7%
Total Cyanide	418.3	414.1	-4.2	-1.0%

FIGURE 20 provides a breakdown of the relative contribution of individual metals to the total influent loadings to Bucklin Point. As in previous years, zinc and copper were the largest contributors, accounting for 84.4% of the total. The overall percent contribution of these two metals in 2024 was similar to the percent contribution of these two metals in 2023, when these metals contributed 85.0% of the total load. The total loading of zinc in 2024 was 5,645.2 pounds, representing 59.2% of the total metals load and the highest load of any toxic pollutant impacting the Bucklin Point facility. The total loading of copper in 2024 was 2,399.5 pounds, representing 25.2% of the total load. Other metals contributing substantially to the total metals loading included chromium, lead, and nickel, accounting for another 14.4% of the total. The dramatic decline in metals loadings since the 1990s is a testament to the success of the NBC toxics reduction and control programs.

FIGURE 20
Breakdown of Total Metals – Bucklin Point 2024 Influent Loadings



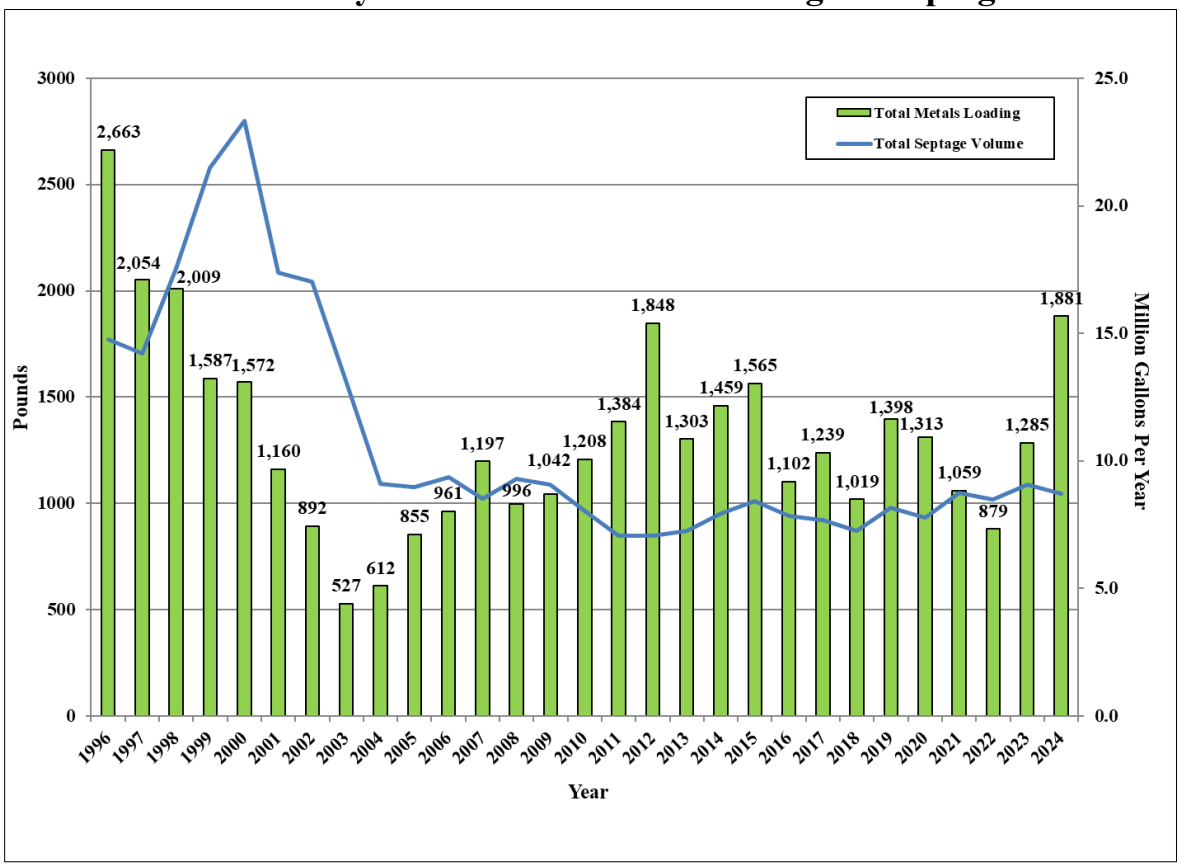
Septage Loading to Bucklin Point Influent

The NBC accepts residential quality septage in the Bucklin Point district. Septage haulers discharge their loads at the Lincoln Septage Receiving Station, where solids are removed prior to the waste stream entering the collection system for transport to the Bucklin Point plant for processing. A sample from each load is collected after the sample port on the truck is flushed thoroughly, usually after the load has discharged for approximately one minute. The sample from each individual truck is screened for pH, odor, and any unusual characteristics. If an anomaly is observed, the load may be rejected, or the sample may be targeted for individual analysis. Otherwise, each grab sample is combined with the delivery for the day and sent to the laboratory for analysis. This sampling protocol has helped to quickly locate potential non-residential inputs to the collection system from septage haulers. Grit removal at the septage facility removes a portion of the metals loading prior to its introduction to the sewer system and the treatment plant.

FIGURE 21 details the change in septage flow and metals loadings from the septage between 1996 and 2024. The NBC received 8.71 million gallons of septage in 2024, representing a decrease of 4.1% compared to 2023. When compared to 1996, there has been an overall decrease of 41.0% in septage flow. The graph shows septage volume peaked in 2000 at approximately 23 million gallons.

Monthly septage metals loads were calculated based on monthly total volume of septage and average metals concentrations. From 2023 to 2024 there was a 46.4% increase in total metals loading from septage, or approximately 596 pounds. Overall, total metals from septage have decreased by 29.4% since 1996.

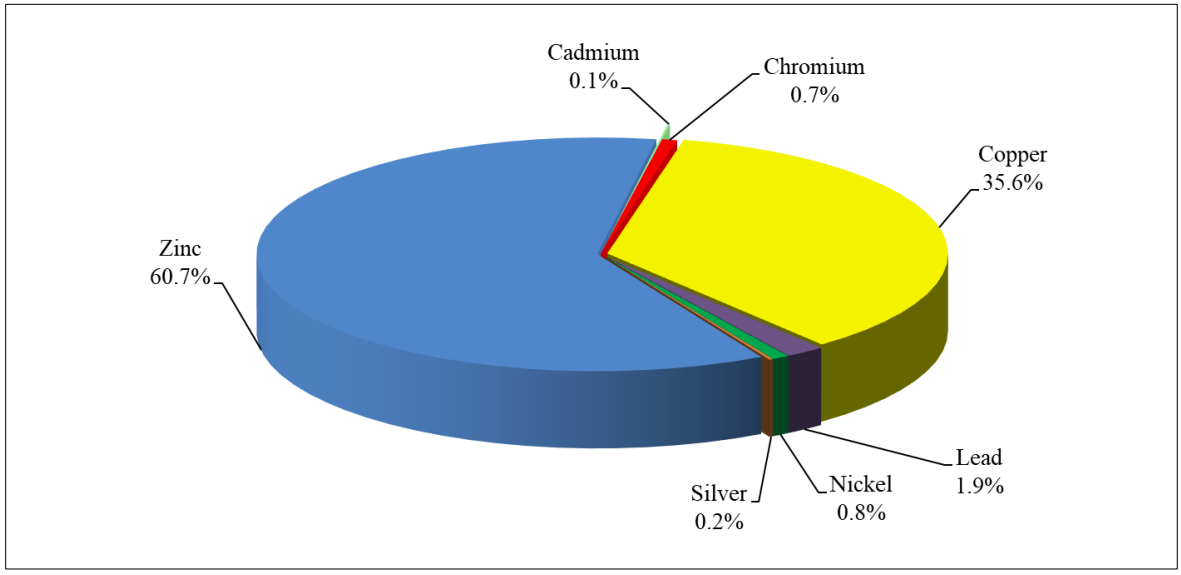
FIGURE 21
Trend Analysis for Total Metals Loadings in Septage



Despite the small overall volume of septage relative to all influent to Bucklin Point, the metals loading from septage is substantial. The septage contribution to total influent metals loading at Bucklin Point was 19.7% in 2024, an increase from the contribution of 14.0% in 2023.

FIGURE 22 illustrates the average relative composition of metals in the septage received at the NBC facility in 2024. As in previous years, zinc and copper continue to represent the majority of metals loadings, 96.3%, within the septage, at 668.9 pounds of copper and 1,142.5 pounds of zinc in 2024. Zinc loading from septage represented 20.2% of the total influent zinc loading to Bucklin Point during 2024. Copper from septage amounted to 27.9% of the total copper influent load. The substantial loadings for these metals from residential quality septage underscores the significance of uncontrolled sources of influent metals loadings to NBC facilities. The septage monitoring data generated during 2024 is provided in ATTACHMENT VOLUME II, SECTION 10.

FIGURE 22
2024 Breakdown of Total Metals in Septage



Oil and Grease Inputs to Bucklin Point

Monthly monitoring of oil and grease inputs to Bucklin Point revealed consistently low concentrations. During 2024, average influent concentrations ranged from 13.31 ppm to 36.59 ppm. Effluent concentrations were substantially lower than influent concentrations, with results of <4.00 ppm, or below detection, for all samples. Low inputs are a direct result of Pretreatment efforts to permit, inspect, and monitor industrial and commercial facilities, including food service establishments, with the potential to impact NBC operations with fats, oils, and grease.

The NBC RIPDES permit requires monthly effluent sampling of oil and grease, with three grab samples collected over the course of a 24-hour period, one grab per shift. The effluent grab samples are analyzed separately, and the maximum and average results are reported on monthly DMRs. Results less than detection are treated as zeroes for reporting on the DMR and for the data summaries in this report. The RIPDES permit does not set a discharge limit for oil and grease. The 2024 monthly average oil and grease data are listed in ATTACHMENT VOLUME II SECTION 10.

Bucklin Point Influent and Effluent Organics

Volatile organic compounds (VOC) were monitored monthly in both the influent and effluent at the Bucklin Point facility in 2024. The analysis of 36 organic compounds using EPA method 624.1 is routinely performed to ensure that the amount of organics introduced to the facility is being adequately regulated by the Pretreatment section. High levels of organics can be dangerous to the health and safety of NBC employees and can potentially pose a significant hazard to the microbial population that is responsible for the removal of organic carbon in the influent wastewater. Of the 432 analytical results for influent samples obtained in 2024, 91.2% of these

were at non-detectable concentrations. Of the 432 analytical results for effluent samples obtained in 2024, 98.4% of the results were at non-detectable concentrations. The low concentrations of VOCs observed in both the influent and effluent demonstrates the effectiveness of Pretreatment efforts to reduce the amounts of organic pollutants introduced to the Bucklin Point facility, which are also therefore prevented from entering the receiving waters of the Bay.

Bucklin Point Influent and Effluent Nitrogen

The RIPDES permit requires Bucklin Point to meet seasonal May through October monthly average permit limits of 5.0 mg/L for total nitrogen concentration and 1,293 lbs/day for total nitrogen loading. Biological Nutrient Removal (BNR) processes ran well in 2024 and monthly average permit limits were met during all months of the permit season. Overall, Bucklin Point achieved a total nitrogen removal rate of 87.5% over these six months. Daily flows to the facility during this season averaged 18.6 MGD, with an influent total nitrogen concentration average of 32.2 mg/L and average influent load of 4,609.1 pounds per day. The May through October average effluent total nitrogen concentration was 3.9 mg/L with an average loading of 576.3 pounds per day. The 2024 nitrogen data are listed in ATTACHMENT VOLUME II SECTION 10.

pH Variability at Bucklin Point: Influent and Effluent

The pH of Bucklin Point influent is measured once per day by EM staff on a handheld pH probe. EM staff collected 366 influent pH samples during 2024. The pH range of the influent sample measurements was from 6.20 to 8.65 standard units (s.u.). The influent waste stream is also monitored with continuous pH probes.

Effluent grab samples were collected once per day, resulting in 366 samples collected in 2024. The addition of sodium bicarbonate to the process at Bucklin Point enables more effective biological nutrient reduction and typically maintains the effluent pH within the desired permit range. The effluent pH values measured in 2024 ranged between 6.25 to 7.30 s.u.

The lack of pH permit violations over the course of 2024 reflects the success of the Bucklin Point Operations staff and the Pretreatment Program, which prevented the discharge of low pH wastewater by industry.

Background Sources of Metals to the Influent Load

Sewer Collections for Determining Non-Industrial Background Contributions to Influent Metals Loading

The NBC has studied background (i.e., non-industrial) sources contributing to the total metal influent loadings to the Bucklin Point and Field's Point facilities since 1993. Samples are collected from sanitary and combined sewers in residential neighborhoods. Results over the years have shown substantial levels of trace metals and other toxic pollutants coming from these uncontrolled sources. In May 2000, EM began sample collections using EPA-approved guidance on clean sampling techniques, further improving their ability to quantify background metals inputs to the NBC facilities.

During 2024, EM staff collected 42 samples in residential sanitary and combined sewers. Twenty-two were located in the Bucklin Point district and 20 were located in the Field's Point district. Samples were collected as 24-hour composites in wet and dry weather conditions. TABLE 25 summarizes the results for the background sample collections for 2024 and compares them to influent concentrations and loading estimates at the NBC facilities. This direct comparison of concentrations and loading estimates gives some approximation of the contributions of these pollutants from background sources.

Loadings were calculated using the average background concentrations and estimates of average daily residential flow rates to each facility. Note that industrial and commercial sources account for only 4.5% of total flow into Bucklin Point and 3.0% of the total flow at Field's Point. Estimated combined sewage/stormwater volume captured by the CSO tunnel in the Field's Point district (3.22 MGD or 6.8% of the total influent flow) was also excluded from the flows used to calculate background loading estimates.

TABLE 25
Results from 2024 Background Metals and Cyanide Contribution Study

Concentration (ppb)												
	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Zn	CN, Total	As	Se	Mo
Background	0.11*	1.57	20.18	3.29	0.01*	3.04	0.10*	66.99	4.40*	0.58	1.01	0.70
FP Influent	0.16	5.95	33.36	6.94	0.04	19.39	0.44	103.15	8.02*	2.47*	1.44	5.12
% of Influent at FP	68.8%	26.4%	60.5%	47.4%	25.0%	15.7%	22.7%	64.9%	54.9%	23.5%	70.1%	13.7%
BP Influent	0.12	3.45	37.71	3.67	0.03	13.61	1.55	86.69	5.59*	0.71	1.01*	3.86
% of Influent at BP	91.7%	45.5%	53.5%	89.6%	33.3%	22.3%	6.5%	77.3%	78.7%	81.7%	100.0%	18.1%
Loading (lbs/year)												
	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Zn	CN, Total	As	Se	Mo
Background (FP District)	14.15	205.74	2648.03	431.15	1.22	399.26	13.59	8790.92	577.14	76.09	132.45	91.84
FP Influent	23.31	886.13	4910.55	1042.82	5.90	2880.86	64.86	15307.70	1190.79*	365.16*	211.67	750.80
% of Influent at FP	60.7%	23.2%	53.9%	41.3%	20.7%	13.9%	21.0%	57.4%	48.5%	20.8%	62.6%	12.2%
Background (BP District)	7.38	107.37	1381.87	225.00	0.64	208.35	7.09	4587.53	301.18	39.71	69.12	47.93
BP Influent	8.65	229.61	2399.54	251.63	1.72	895.07	102.88	5645.23	414.09*	49.73	72.07*	245.82
% of Influent at BP	85.3%	46.8%	57.6%	89.4%	37.2%	23.3%	6.9%	81.3%	72.7%	79.9%	95.9%	19.5%

*These estimates calculated based on ≥25% of samples below detection limit; estimates should be interpreted with caution.

Several aspects of the data analysis used for data noted in TABLE 25 should be highlighted. Detection limit values were entered for samples with concentrations below the laboratory detection limits. This may lead to overestimation of true concentrations and loadings from a particular source. Metals with 25% or more results below the detection limit are indicated in TABLE 25 to draw attention to the problematic nature of the estimates. Results of background samples taken from both districts were used to determine the annual average background concentrations. These concentrations were then multiplied by the average daily non-commercial and industrial flow rates to each facility to generate facility-specific loading estimates. In contrast, influent loadings were calculated based on both facility-specific influent concentration and influent flow. Lastly, average influent concentrations were determined, while geometric means were calculated for the background data in order to reduce the impact of highly variable data on the comparison. These analytical differences, as well as the inexact pairing of data

collections temporally, may lead to background concentrations that account for more than 100% of influent concentrations as well as discrepancies in the percent contribution of background sources when comparing concentrations and loading estimates. Despite these differences, this comparison provides useful information regarding the magnitude of the contributions of these pollutants coming from uncontrolled sources.

From TABLE 25 it is evident that a major portion of the influent cadmium, copper, zinc, and selenium loadings observed at both facilities are from background sources. Arsenic, lead, and cyanide at Bucklin Point also appear to come largely from background sources. These background sources may include discharges from street runoff, residential discharges including leaching from residential plumbing piping, and contaminated soils. For example, it is apparent that most zinc (the trace metal with the highest concentration at the treatment plants and septage loads) comes from non-industrial sources, as 57.4% of the influent loading to Field's Point and 81.3% of the loading to Bucklin Point can be accounted for in the background sampling.

TABLE 26 shows the geometric mean concentrations of all background metals and cyanide samples collected since 2002 in both NBC drainage areas. The highest total metals concentration occurred in 2007. In 2024, concentrations of cyanide exhibited a decrease compared to 2023, while most metals increased. Many factors may contribute to year-to-year variability, including the specific manhole sites sampled each year. Note that sanitary manhole background monitoring for tin was discontinued in July 2018.

TABLE 26
Historical Background Metals and Cyanide Results 2002-2024 (ppb)

	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Zn	CN	As	Se	Sn	Mo	Total Metals*
2002	0.40	5.93	32.18	11.22		6.66	0.85	99.52	4.59					156.76
2003	0.45	6.31	29.48	8.77		8.13	0.89	105.04	6.49					159.07
2004	0.68	2.99	36.49	10.79	0.07	6.21	1.79	102.49	6.58	1.01	0.76	6.31		161.51
2005	0.17	3.61	23.55	7.87	0.07	5.39	0.36	84.22	6.75	0.64	0.65	1.75	0.75	125.24
2006	0.14	4.49	24.80	6.65	0.03	5.76	0.28	90.05	4.81	0.99	0.65	0.95	0.68	132.20
2007	0.14	9.70	38.13	8.86	0.04	11.67	0.22	121.35	2.36	0.61	0.64	1.63	0.80	190.11
2008	0.12	4.07	19.88	6.77	0.04	5.11	0.13	64.17	3.82	0.80	0.99	1.45	0.80	100.29
2009	0.14	2.43	35.04	10.09	0.04	6.16	0.20	91.93	4.16	0.91	1.58	1.85	0.76	146.03
2010	0.13	1.78	22.68	7.11	0.04	4.05	0.14	85.54	3.84	0.66	1.36	2.55	0.74	121.47
2011	0.15	1.62	23.73	7.20	0.04	3.02	0.22	104.84	4.23	0.66	0.68	2.45	0.89	140.82
2012	0.15	1.32	25.86	5.92	0.03	2.65	0.26	100.60	4.55	0.55	0.60	5.37	0.81	136.79
2013	0.20	1.07	26.38	7.21	0.04	2.65	0.23	94.43	4.73	0.56	0.70	5.26	0.76	132.21
2014	0.21	1.27	39.78	6.98	0.04	2.43	0.23	122.09	5.14	0.59	1.02	5.00	0.93	173.03
2015	0.21	1.31	25.87	5.14	0.02	2.82	0.18	101.86	6.27	0.69	1.17	5.22	0.86	137.41
2016	0.19	1.27	25.46	5.49	0.02	2.29	0.21	113.92	4.64	0.65	1.18	5.10	0.99	148.85
2017	0.18	1.93	34.75	7.61	0.03	3.36	0.21	135.55	4.72	0.74	1.09	5.00	1.01	183.62
2018	0.18	1.21	28.39	6.35	0.02	2.46	0.17	99.16	4.91	0.58	1.03	5.00	0.83	137.94
2019	0.12	1.07	17.17	3.27	0.01	2.59	0.09	68.95	4.23	0.59	1.05		0.73	93.27
2020	0.13	1.43	28.17	4.90	0.01	2.67	0.16	116.05	4.54	0.59	1.05		0.86	153.52
2021	0.13	1.18	20.54	3.14	0.01	2.57	0.12	80.83	4.61	0.72	1.27		0.83	108.52
2022	0.14	1.15	17.75	4.03	0.01	2.14	0.13	79.13	4.25	0.76	1.43		0.85	104.48
2023	0.09	0.84	17.62	3.64	0.01	2.05	0.12	69.91	4.59	0.59	1.20		0.73	94.27
2024	0.11	1.57	20.18	3.29	0.01	3.04	0.10	66.99	4.40	0.58	1.01		0.70	95.29

*Total Metals = Cd+Cr+Cu+Pb+Hg+Ni+Ag+Zn

From this analysis, it is apparent that large percentages of the toxic loads to the Field's Point and Bucklin Point plants are from residential and other background sources that are beyond the control of the NBC Program. Understanding non-industrial and commercial sources is important to permit development and planning to reduce loading to the treatment facilities and to Narragansett Bay. NBC continues to improve and update studies of pollutant loads throughout the collection system using flow measurements, metering stations on NBC interceptors, and manhole monitoring data to choose study sites that will accurately describe mass loading from domestic sources, storm runoff, and major drainage basins.

Influent Loading Conclusions

Consistent monitoring of the various sources and concentrations of toxics entering the NBC plants has documented dramatic decreases in these loads, largely due to the efforts of the Pretreatment section. To achieve these decreases, Pretreatment enforces the categorical standards set by the EPA to achieve a nationally uniform system of water pollution control for selected industries and pollutants as well as local limits defined for each POTW. Local limits are intended to protect the wastewater treatment facility, the receiving waters, sludge quality, and the health of the public, as well as to prevent environmental problems as a result of discharges from any non-domestic user.

Local limits are required to be periodically reviewed and revised to respond to changes in Federal or State regulations, environmental protection criteria, treatment facility design and operational criteria, and the nature of industrial contributions to POTW influent. In 2020, the NBC re-evaluated local limits for both facilities. Local limits evaluation includes calculation of the MAHL, which represents the loadings of a particular pollutant that the treatment facilities can effectively treat without upset to plant operations or pass-through of toxins that could adversely affect water quality and aquatic life. The MAHL must also protect sludge quality, to allow for the safe disposal of solids removed from the wastewater. The 2020 Local Limits Evaluation resulted in new local limits for ammonia, arsenic, BOD, total nitrogen, and TSS, which became final and enforceable on June 1, 2021.

TABLE 27 provides a comparison of NBC MAHL goals with the 2024 influent loadings of toxics and other pollutants of concern. While MAHLs are calculated to estimate the maximum allowable daily loadings, TABLE 27 extrapolates these to maximum allowable pounds per year for comparison to annual influent loads. For total nitrogen and ammonia, local limits are only enforceable from May 1st through October 31st. Therefore TABLE 27 compares total seasonal loads to a MAHL extrapolated to the season. In the case of CBOD, loadings are compared to MAHLs calculated on BOD, the form of the pollutant regulated. MAHLs and local limits based on BOD loading are protective of the CBOD limits incorporated in the RIPDES permits.

TABLE 27 illustrates that 2024 influent loads of each pollutant remained well within the MAHLs as expressed as annual or seasonal allowable loads. Overall, the low annual and seasonal influent loads of these pollutants attest to the effectiveness of NBC initiatives and measures to control pollutant sources to the POTWs.

TABLE 27
Comparison of 2024 Influent Loadings to Maximum Allowable Headworks Loadings (MAHL)

	Field's Point			Bucklin Point		
Parameter	**MAHL lbs/yr**	**2024 Loading lbs/yr**	**Below MAHL?**	**MAHL lbs/yr**	**2024 Loading lbs/yr**	**Below MAHL?**
Cadmium	24,200	22.7	Yes	4,490	8.6	Yes
Chromium	87,133	814.9	Yes	20,170	229.6	Yes
Copper	47,165	4,496.6	Yes	15,648	2,399.5	Yes
Lead	40,829	1,003.8	Yes	11,519	251.6	Yes
Mercury	1,044	4.8	Yes	190	1.7	Yes
Nickel	25,933	2,718.1	Yes	3,048	895.1	Yes
Silver	69,843	63.2	Yes	4,059	102.9	Yes
Zinc	53,086	13,847.8	Yes	13,750	5,645.2	Yes
Total Metals*	349,233	22,971.9	Yes	72,874	9,534.2	Yes
Cyanide	28,426	1,307.6	Yes	1,862	414.1	Yes
Arsenic	1,055	366.7	Yes	135	49.7	Yes
CBOD (BOD)**	31,285,610	20,960,943.6	Yes	21,688,300	11,762,677.0	Yes
TSS	22,630,000	17,072,950.5	Yes	21,330,600	8,945,778.6	Yes
Ammonia (May – Oct)***	1,472,000	1,009,666.2	Yes	1,368,960	544,035.2	Yes
Total Nitrogen (May – Oct)***	2,208,000	1,615,778.2	Yes	1,368,960	865,533.1	Yes

*Total metals=Cd+Cr+Cu+Pb+Hg+Ni+Ag+Zn
**The MAHL is expressed in terms of BOD, while the loading values represent influent CBOD.
***Ammonia and total nitrogen MAHLs and loadings are expressed on a lbs per May-October season basis.

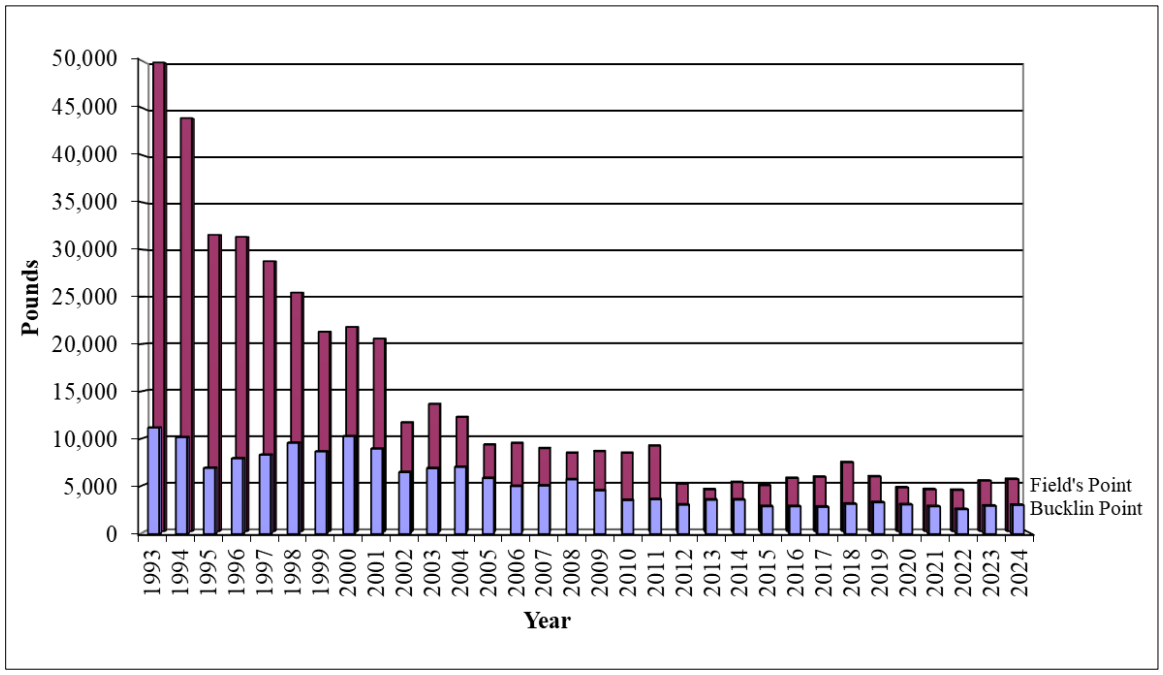
Analysis of Effluent Loading Data

This chapter attempts to quantitatively measure the results of the work of the Pretreatment section by analyzing the loadings of toxics in the influent of the NBC facilities. However, meeting MAHL goals based on annual average influent loadings as noted above does not necessarily translate to compliance with RIPDES daily or monthly discharge limits for the effluent. It is also important to consider the compliance and potential environmental impacts of effluent discharge loadings into the receiving waters after wastewater treatment has been provided. Issues pertaining to these impacts are included later in this chapter and in CHAPTER VII. To maintain continuity with influent data, current and historical effluent data for both NBC facilities for the period from 1993 to 2024 were compiled and analyzed. The overall effluent trends are similar to those for the influent data, as concentrations and loadings have generally been decreasing over time at Field's Point and Bucklin Point.

Historical total metals discharges from both NBC facilities are shown in FIGURE 23. It is important to note that the Field's Point facility handles approximately twice the flow volume of Bucklin Point. Total metals effluent loadings have been steadily decreasing at Field's Point since 1993 with some minor annual fluctuations. In 2024, total metals in the Field's Point effluent

amounted to 5,545.6 pounds, an increase of 3.2%, or 173.7 pounds, compared to the 2023 total load of 5,371.9 pounds. Overall, since 2011, effluent metals loadings have been reduced by 39.1% at Field's Point. This dramatic decrease is partially attributable to BNR treatment technologies that began to come into operation at that plant in 2012. The total metals load in the 2024 Bucklin Point effluent was 3,042.6 pounds, an increase of 2.7%, or 79.5 pounds, compared to the 2023 load of 2,963.1 pounds. At Bucklin Point, effluent loading has been below 6,000 pounds since 2005, whereas prior to 2005, the average effluent loading was 8,554 pounds. As mentioned previously, throughout 2005, advanced treatment processes were brought online at the Bucklin Point facility, contributing to improved total metals removal. The BNR facilities at Bucklin Point underwent an upgrade in 2014, and effluent metals have remained lower since. Overall, since 1993, effluent metals from Bucklin Point have decreased by 72.8% and effluent metals at Field's Point have decreased by 88.9%.

FIGURE 23
NBC Total Metals Effluent Loadings Trend Analysis



As shown in FIGURE 24, effluent cyanide loadings decreased by 20.6% at Field's Point and decreased 9.7% at Bucklin Point from 2023 to 2024. Note that while this chapter presents the annual loadings of total cyanide, the NBC reports only available cyanide on Discharge Monitoring Reports (DMR) submitted monthly to DEM. At Field's Point, available cyanide represented 85% of total cyanide in 2024, or 568.5 pounds, compared to total cyanide loading of 665.4 pounds. At Bucklin Point, available cyanide represented 82% of the cyanide load in 2024, or 270.3 pounds, compared to the total cyanide annual loadings of 330.6 pounds. Note that at both plants, effluent available cyanide results were frequently measured below detection limits and reported using detection-limit-substitution for the purposes of loading calculations. Therefore, the percentage of total cyanide that is available is likely overestimated in these calculations.

FIGURE 24
NBC Cyanide Effluent Loadings Trend Analysis

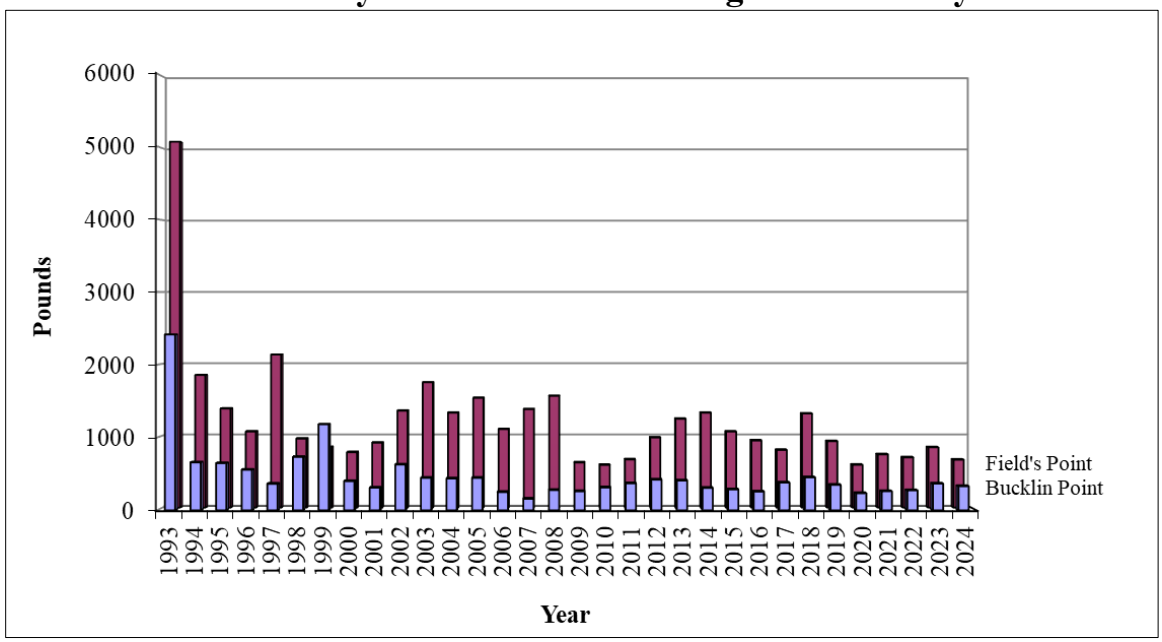


TABLE 28 provides a comparison of the 2023 and 2024 metals and cyanide effluent loadings from Field's Point. Loadings were calculated based on monthly averages of concentration and total monthly flow. The annual effluent loading for all metals showed an increase of 3.2%, or 173.7 pounds, in 2024 when compared to 2023. Four metals exhibited increases in effluent loading in 2024, with the greatest relative percent increase, 820.0% or 1.64 pounds, observed in mercury. This increase in loading is primarily due to a temporary increase in the detection limit for mercury rather than actual higher levels of mercury detected in plant effluent. Mercury samples were sent to a contract lab in September 2024; all results from that month were under the detection limit, but the contract lab's minimum detection limit is 0.20 ppb, higher than NBC's in-house results, thus increasing the estimated loadings. Four metals exhibited decreases in effluent loading in 2024, with the greatest relative percent decrease, 15.0% or 60.0 pounds, observed in copper. Overall, effluent metal loadings remain low due to strict regulation by Pretreatment, NBC pollution prevention and educational efforts, and NBC wastewater treatment technology. Effluent flow from Field's Point was on average 2.1 MGD lower in 2024 than it was in 2023, with the average daily effluent flow of 46.1 MGD in 2024 versus 48.2 MGD in 2023.

TABLE 28
Comparison of 2023 - 2024 Annual Loadings from Field's Point

Pollutant	2023 Pounds	2024 Pounds	Total Pound Change	% Change
Total Cadmium	3.2	3.0	-0.2	-6.3%
Total Chromium	232.5	215.9	-16.6	-7.1%
Total Copper	399.9	339.9	-60.0	-15.0%
Total Lead	64.2	55.0	-9.2	-14.3%
Total Mercury	0.20	1.84	1.64	820.0%
Total Nickel	1462.1	1537.4	75.3	5.2%
Total Silver	5.0	5.5	0.5	10.0%
Total Zinc	3204.8	3387.1	182.3	5.7%
Total Metals	5371.9	5545.6	173.7	3.2%
Total Cyanide	837.7	665.4	-172.3	-20.6%

TABLE 29 compares individual Bucklin Point metals and cyanide effluent loadings from 2024 to the previous year. Overall, total metals loading from the Bucklin Point facility increased by 2.7%, or 79.5 pounds, from 2023 to 2024. There was an increase in effluent flow, averaging 22.1 MGD in 2024 versus 20.5 MGD in 2023. Of the eight metals used to calculate total metal loadings, only zinc and cadmium showed decreased loadings from 2023, with decreases of 2.0% or 44.0 pounds and 12.5% or 0.2 pounds, respectively. The metal with the largest percent increase was mercury, which increased by 654.5%, or 0.72 pounds. This increase in loading is primarily due to a temporary increase in the detection limit for mercury rather than actual higher levels of mercury detected in plant effluent.

TABLE 29
Comparison of 2023 - 2024 Annual Loadings from Bucklin Point

Pollutant	2023 Pounds	2024 Pounds	Total Pound Change	% Change
Total Cadmium	1.6	1.4	-0.2	-12.5%
Total Chromium	49.9	53.5	3.6	7.2%
Total Copper	272.1	300.9	28.8	10.6%
Total Lead	26.7	30.9	4.2	15.7%
Total Mercury	0.11	0.83	0.72	654.5%
Total Nickel	457.1	538.6	81.5	17.8%
Total Silver	5.4	10.3	4.9	90.7%
Total Zinc	2150.2	2106.2	-44.0	-2.0%
Total Metals	2963.1	3042.6	79.5	2.7%
Total Cyanide	366.3	270.3	-96.0	-26.2%

Breakdown Analysis of POTW Effluents

The portioning of total metals loading in the effluent of each plant can be seen in FIGURES 25 and 26. These figures show that zinc, nickel, and copper are the largest components of the effluent total metals load at both Field's Point and Bucklin Point. In 2024, these three metals accounted for 94.9% of the total metals effluent loading from Field's Point and 96.8% of total metals effluent loading for Bucklin Point. At Field's Point, zinc, nickel, and chromium represent a higher percentage of the total metals in the effluent than in the influent. In 2024, zinc comprised 61.1% of the effluent loading totals versus only 60.3% of the influent; nickel comprised 27.7% of the effluent loading totals versus only 11.8% of the influent, and chromium comprised 3.9% of the effluent loading totals versus only 3.5% of the influent. At Bucklin Point, nickel and zinc represent higher percentages of the total metals in the effluent than in the influent due to their low removal efficiency compared to the other metals. At Bucklin Point, zinc represented 69.2% of the effluent loading total versus only 59.2% of the influent and nickel represented 17.7% of the effluent loading versus only 9.4% of the influent loading.

FIGURE 25
Breakdown of Total Metals - Field's Point 2024 Effluent Loading

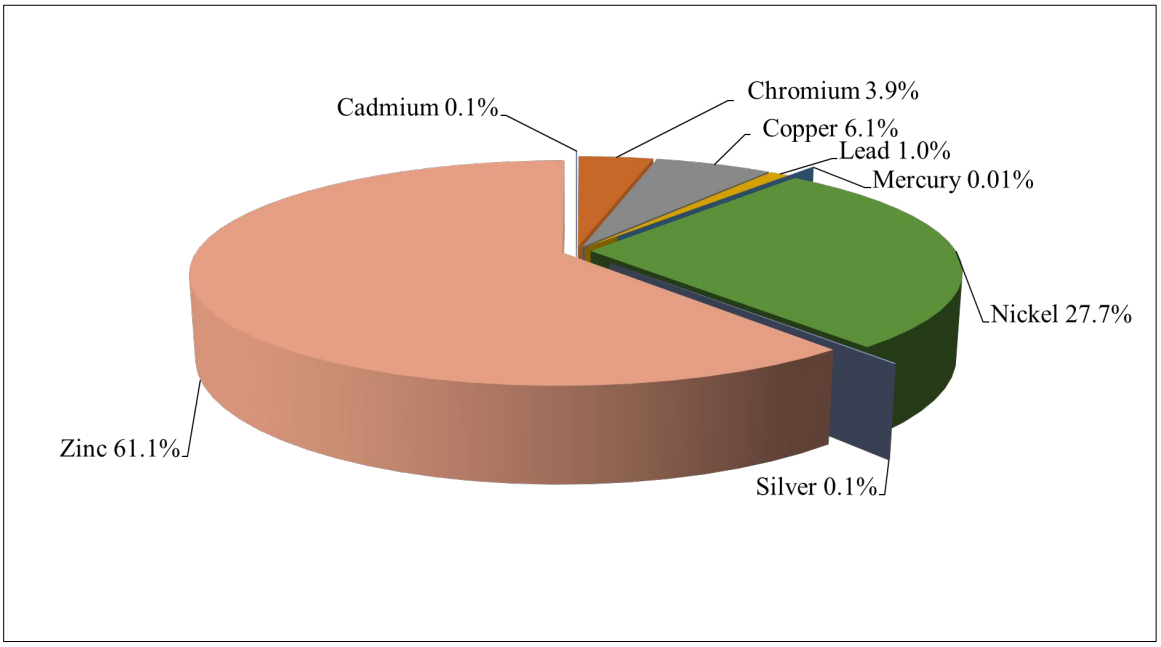
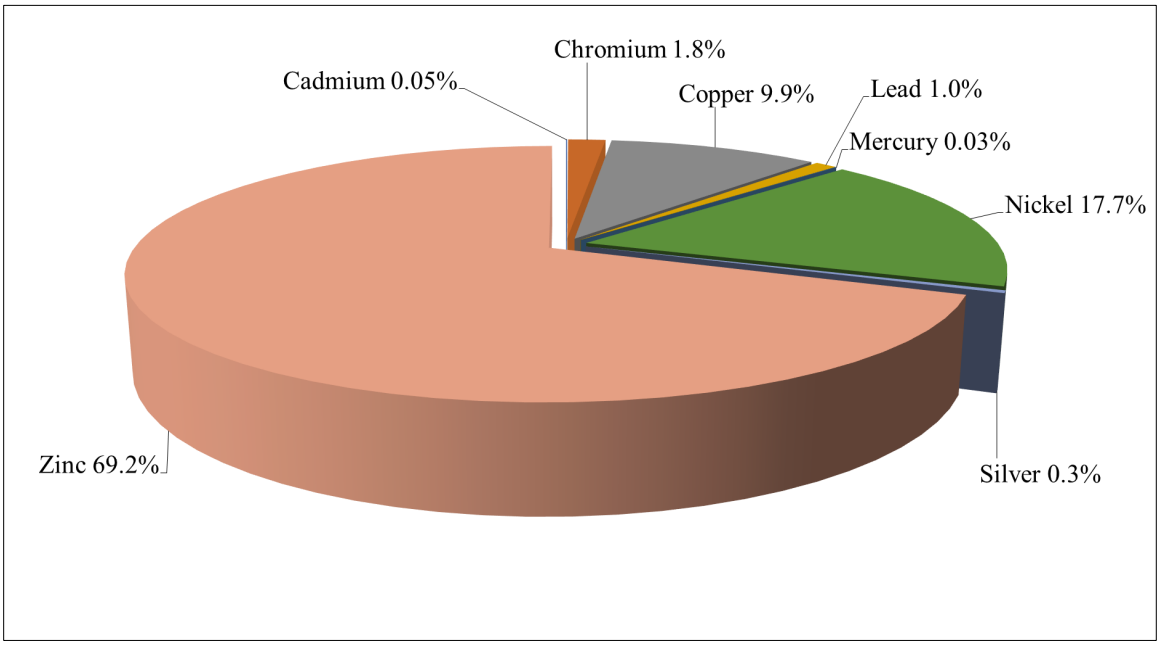


FIGURE 26
Breakdown of Total Metals - Bucklin Point 2024 Effluent Loading



Bioassay Data

The two NBC facilities are required to conduct quarterly bioassay studies to determine effluent toxicity to various test organisms. Test organisms are exposed to wastewater effluent at multiple dilutions to evaluate whether such exposure leads to reduced survival or reproductive success. Effluent samples are collected only in dry weather, defined as no rain 48 hours prior to or during sampling. NBC met the quarterly bioassay sampling frequency requirements during 2024 for both facilities.

Effluent from each facility is tested for acute toxicity to the mysid shrimp *Americamysis bahia* and chronic toxicity to the sea urchin *Arbacia punctulata*. Results of the acute toxicity testing are analyzed to determine the LC_{50} and the A-NOEC statistics. The LC_{50} result is defined as the concentration of wastewater that causes mortality to 50% of the test organisms. A-NOEC or Acute-No Observable Effect Concentration is defined as the highest concentration of the effluent in which 90% or more of the test animals survive. Both NBC facilities have an LC_{50} permit limit requirement of 100% or greater, defined as a sample which is composed of 100% effluent. There are no monitoring requirements nor permit limits for A-NOEC for either POTW. The chronic toxicity test performed on *A. punctulata* examines the sublethal effects of effluent on the fertilization of eggs. The C-NOEC or Chronic-No Observable Effect Concentration is reported. The C-NOEC permit limit for Bucklin Point is 50% or greater while at Field's Point the permit requires monitoring only. The NBC moved the bioassay analysis in-house in the third quarter of 2024 following challenges working with contract labs in prior years.

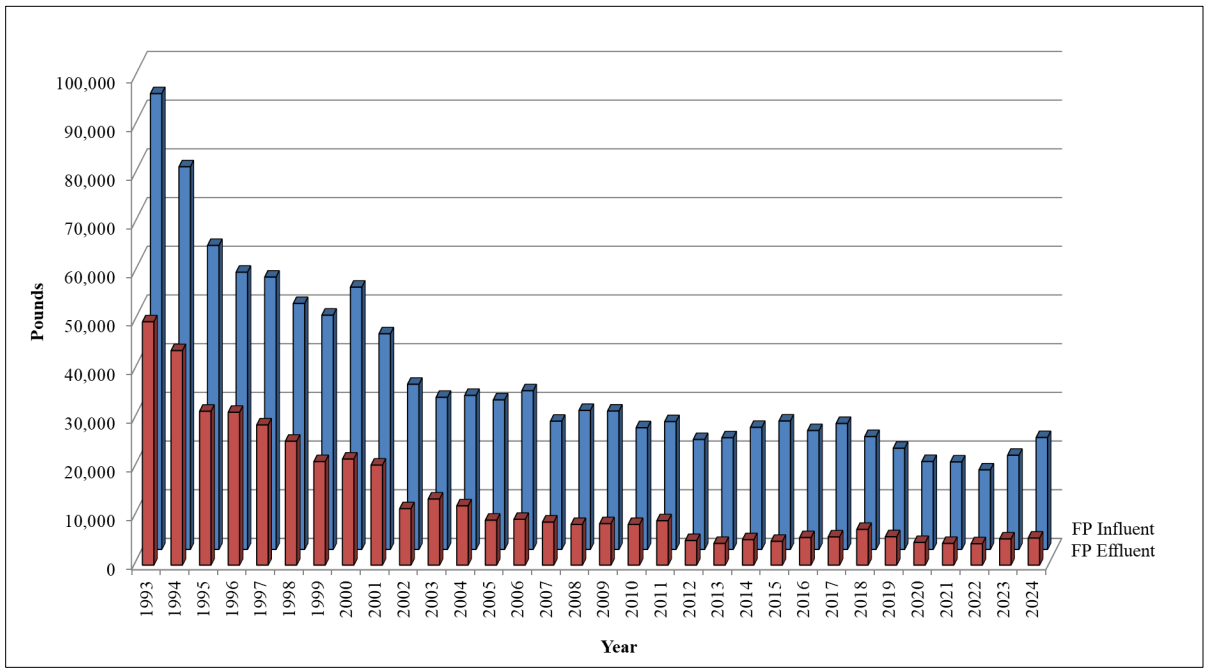
At Bucklin Point, all quarterly acute toxicity test results were 100% or greater for both the LC_{50} and A-NOEC indicating no observable effect of undiluted effluent on the study organisms. In the acute tests at both Field's Point and Bucklin Point, the LC_{50} and A-NOEC were also 100% or greater.

In the chronic tests at both Field's Point and Bucklin Point, the C-NOEC was 100% for all quarters. Results of the quarterly bioassay tests for 2024 are included in ATTACHMENT VOLUME II, SECTION 10.

Comparison of Influent and Effluent Loadings

FIGURE 27 provides a comparison of historic Field's Point influent and effluent loadings for total metals. At the Field's Point facility, a major portion of each metal observed in the plant influent is removed in grit and sludge during the treatment process.

FIGURE 27
Field's Point Influent and Effluent Total Metals Loadings Trend Analysis



Influent loading increased by 18.8%, or 3,631.7 pounds in 2024 as compared to 2023. Effluent loadings increased by 173.7 pounds or 3.2%. The removal rate of metals entering the Field's Point facility ranged from 21.9% to 94.5% in 2024. Since the plant upgrades associated with the nitrogen removal process went into operation, removal efficiencies for metals have increased substantially.

FIGURE 28 provides a comparison between the historical influent and effluent total metal loadings for Bucklin Point. As noted for Field's Point, a major portion of each pollutant observed in the plant influent is removed in grit and sludge during the treatment process. In 2024, there was a 337.7 pound or 3.7% increase in influent metals. Effluent metals also increased by 79.3 pounds or 2.7% compared to 2023 loadings. Percent removal of the various metals at Bucklin Point ranged from 35.7% to 89.7%.

FIGURE 28
Bucklin Point Influent and Effluent
Total Metals Loadings Trend Analysis

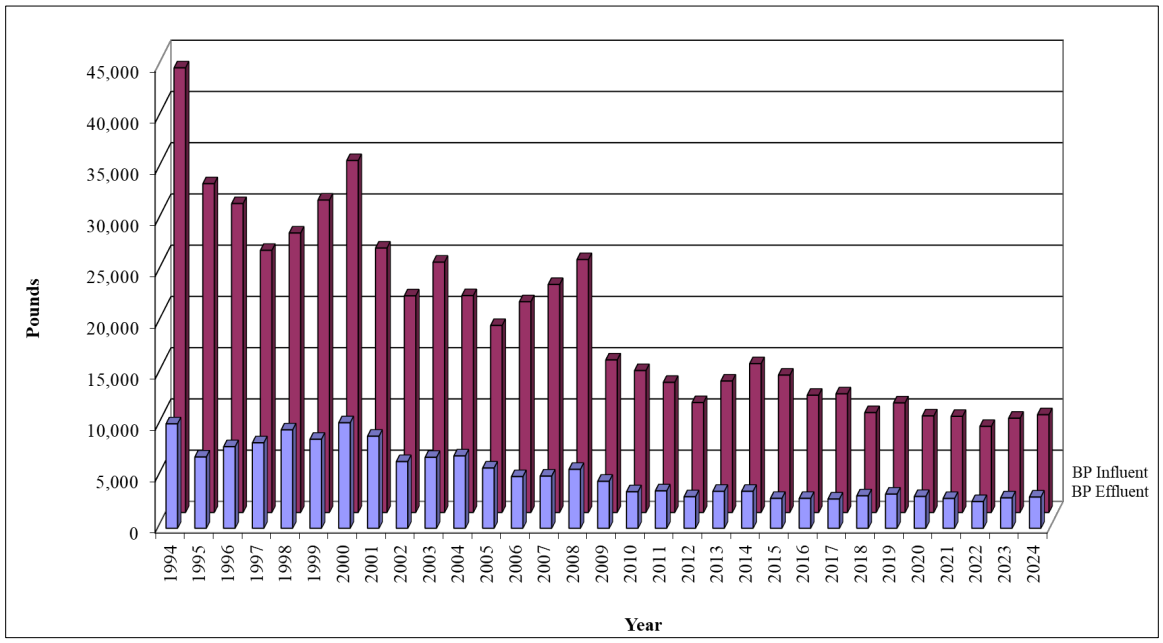


TABLE 30 details removal rates for each of the heavy metals and total cyanide at both NBC wastewater treatment plants. The term removal here means the reduction of pollutants in the wastewater through their incorporation into settleable solids, which are then concentrated into sludge material. Municipal wastewater treatment plants are not designed to treat and remove industrial waste such as heavy metals beyond such passive settling. Those metals that occur primarily in the dissolved phase (e.g., nickel) will be discharged to the receiving waters with less removal than those that are more particle-reactive (e.g., copper or lead) which settle more readily into the sludge. Several influent and effluent metals measured at the plants are often non-detectable by the appropriate laboratory method applied. The metals shown with asterisks in TABLE 30 were measured as below detection in 25% or more of samples in 2024, resulting in overestimation of these concentrations.

From TABLE 30 it is easy to see that a major portion of all toxic pollutants are removed from the waste stream at the NBC plants prior to effluent discharge to the receiving waters of Narragansett Bay. The Field's Point and Bucklin Point facilities were both able to remove 80% or more of the cadmium, copper, lead, and silver discharged to the plants. Mercury had the lowest percent removal rate of the heavy metals at Field's Point with 21.9% removal and Bucklin Point's lowest removal was nickel with 35.7% removal.

TABLE 30
Percent Removal of Metals and Cyanide for NBC Facilities in 2024

	Field's Point Concentrations			Bucklin Point Concentrations		
	Influent (ppb)	Effluent (ppb)	% Removal	Influent (ppb)	Effluent (ppb)	% Removal
Cadmium	0.16	0.02*	87.5%	0.12	0.02*	83.3%
Chromium	6.0	1.54	74.3%	3.45	0.84	75.7%
Hexavalent Chromium	22.8*	10.00*	56.1%	27.08	10.00*	63.1%
Copper	33.36	2.37	92.9%	37.71	4.73	87.5%
Lead	6.94	0.38	94.5%	3.67	0.45	87.7%
Mercury	0.0228	0.0178	21.9%	0.0298	0.0181*	39.3%
Nickel	19.4	11.10	42.8%	13.61	8.75	35.7%
Silver	0.44	0.04	90.9%	1.55	0.16	89.7%
Zinc	103.15	23.85	76.9%	86.69	32.25	62.8%
Total Cyanide	8.02*	4.64*	42.1%	5.59*	4.01*	28.3%
Total Metals	169.41	39.32	76.8%	146.83	47.22	67.8%

*25% or more samples measured below the detection limit.
Total metals=Cd+Cr+Cu+Pb+Hg+Ni+Ag+Zn; excludes hexavalent chromium and total cyanide

POTW Effluent Dissolved Metals Study

Throughout 2024, the NBC continued to monitor the dissolved metals fraction of the effluent discharged to the receiving waters of the Providence and Seekonk Rivers. Dissolved metals were measured in monthly samples, while most total metals were measured twice per week. The NBC and DEM use this data to better understand the fate, effect, and physical phase partitioning of metals discharged from the POTWs.

Understanding the partitioning between dissolved and particulate phases is especially important for the calculations of permit discharge limits. POTWs are permitted for total metals. However, the limits are derived from receiving water quality criteria set for dissolved metals concentrations, the phase that is more readily absorbed by marine life. Therefore, when determining permit limits of a POTW, the DEM must use a "metals translator" conversion factor to estimate the fraction of the total metals load that will be in the dissolved phase in the effluent. By sampling for both total and dissolved metals, the NBC is able to calculate the ratio of dissolved to total metals in POTW effluent and in the receiving waters and inform such permit limit calculations.

TABLE 31 summarizes the data from 2024 as dissolved-to-total metals ratios. The values were calculated for each date there was a dissolved metals result (i.e., once per month), using the dissolved metals concentration and the total metals concentration for that day. Annual averages were then calculated from these monthly data. The dissolved phase is operationally defined as

that portion which passes through a 0.45-micron filter. A majority of the dissolved cadmium and lead samples were reported as less than the detection limit at Field's Point (100%) and Bucklin Point (92%); the majority of dissolved aluminum samples (83%) were also censored at Field's Point. High censorship >50% was also noted in the total cadmium samples from both plants. Note that averages were calculated for these metals using substitution of the detection limit value, therefore overestimating the concentrations.

TABLE 31
2024 Final Effluent Phase Partitioning Study Results

Dissolved/Total Shown as a Ratio		
	Field's Point Mean	**Bucklin Point Mean**
Aluminum	0.62*	0.38
Cadmium	0.93*	0.96*
Chromium	0.96	0.89
Copper	0.82	0.57
Iron	0.31	0.40
Lead	0.84*	0.73*
Nickel	0.98	0.96
Silver	1.02	0.17
Zinc	1.01	0.98

*Results impacted by censorship of 50% or more dissolved and/or total metals results used in ratio calculation.

At Field's Point, the results show silver, zinc and nickel to be the metals with the highest fraction in the dissolved phase in the final effluent, followed by chromium, cadmium, lead, and copper. At Bucklin Point, zinc, nickel, and cadmium were shown to be the metals with the highest fraction in the dissolved phase, followed by chromium. Iron tends to be more strongly associated with particulates and thus the fraction of the metal in the dissolved phase is typically among the lowest.

Data for 2024 total and dissolved metals analysis results are included in ATTACHMENT VOLUME II, SECTION 10.

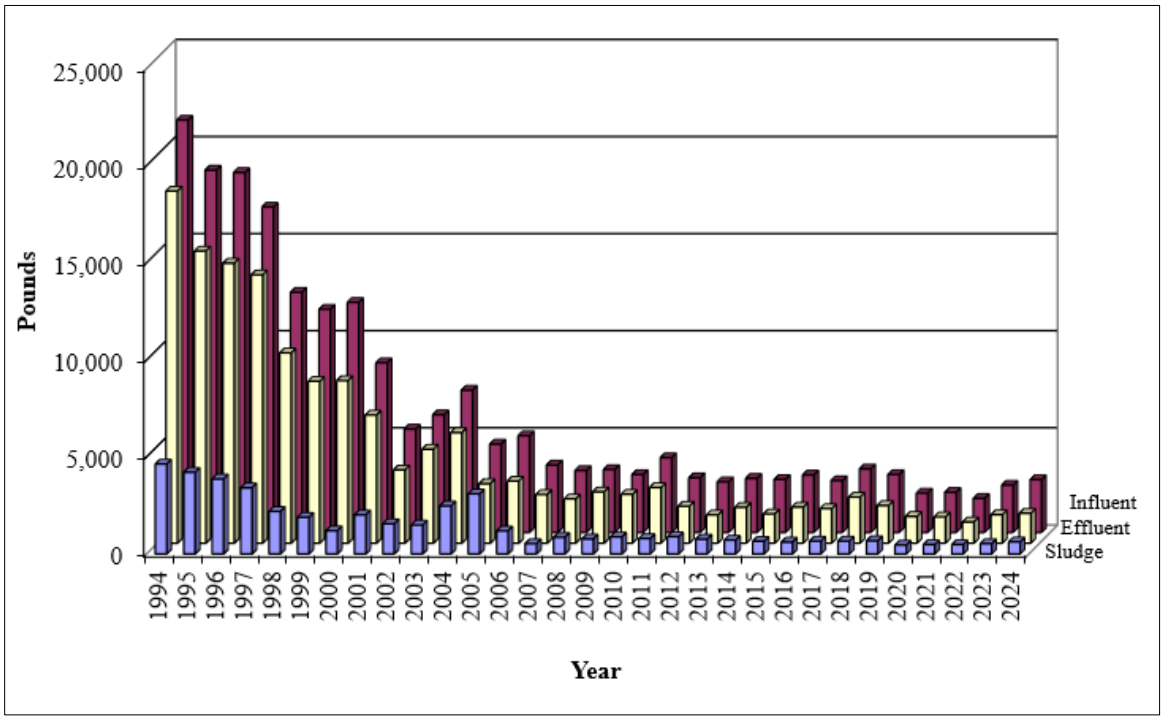
Sludge Analysis

To provide further insight into influent trends and POTW removal efficiency for metals, sludge loading trends for three metals have been compared to influent and effluent loads since 1994 at each facility. Nickel was chosen for this comparison due to its high incidence in the dissolved phase. Nickel is also a metal commonly associated with industrial sources. Copper and zinc were also chosen due to their relatively high abundance and significant influent sources. In the following figures, the final sludge loading is an approximation since there is insufficient data for

loading attributed to grit. Furthermore, in 2024 approximately 25% of the Bucklin Point dry tons of sludge disposed were removed as part of the digester rehabilitation project and not sampled for metals. During 2024, sludge metals measurements were conducted twice per month on samples hauled as part of routine sludge disposal. Prior to 2006, this sampling was conducted weekly. The mass balance agreement of these metals is calculated by subtracting the effluent and sludge loadings from the influent loading. Historical and 2024 sludge data are included in ATTACHMENT VOLUME II, SECTION 10.

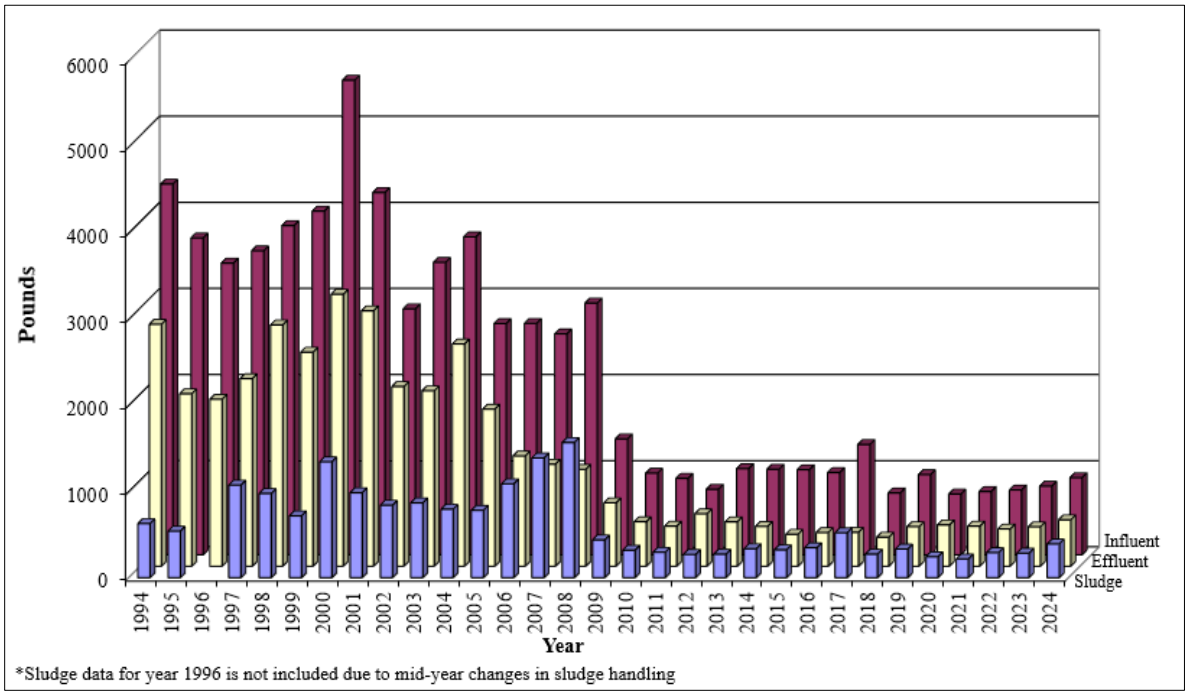
As can be seen in FIGURE 29, nickel inputs in Field's Point influent generally declined from 1994 to 2008 and loadings have been relatively steady since then. The center row of columns on the figure represents final effluent loading. During 2024, Field's Point nickel loading increased in the influent, effluent, and sludge compared to 2023. Nickel in the sludge has remained below 1,000 pounds since 2007. The discrepancy between 2024 influent nickel loading compared to sludge and effluent nickel loadings was 26%. This discrepancy is attributed to loading in grit and general variability due to sampling and analytical methods.

FIGURE 29
Nickel Loading Trend Analysis for Field's Point
Sludge, Influent and Effluent



As can be seen in FIGURE 30, at Bucklin Point, nickel loading increased in the influent, effluent, and sludge during 2024 as compared to 2023. In 2024, there was a 4% discrepancy between measured influent loading and loading in the effluent and sludge. This discrepancy is attributed to general variability due to sampling and analytical methods.

FIGURE 30
Nickel Loading Trend Analysis for Bucklin Point
Sludge, Influent and Effluent



Nickel has one of the lowest removal efficiencies of all of the metals measured in the influent and effluent at either plant, due in part to its high incidence in the dissolved phase. This results in relatively low loading of nickel to the sludge at each plant.

FIGURES 31 and 32 show the loading trends for zinc at the Field's Point and Bucklin Point facilities, respectively. Zinc loading at Field's Point increased in the influent, effluent, and sludge from 2023 to 2024. The discrepancy between Field's Point influent zinc loading and the combined sludge and effluent zinc was 13%. At Bucklin Point, zinc loading increased in the influent and sludge but decreased in the effluent. The discrepancy at Bucklin Point was 4%. These discrepancies can be attributed to loading in the grit and general variability due to sampling and analytical methods.

FIGURE 31
Zinc Loading Trend Analysis for Field's Point
Sludge, Influent, and Effluent

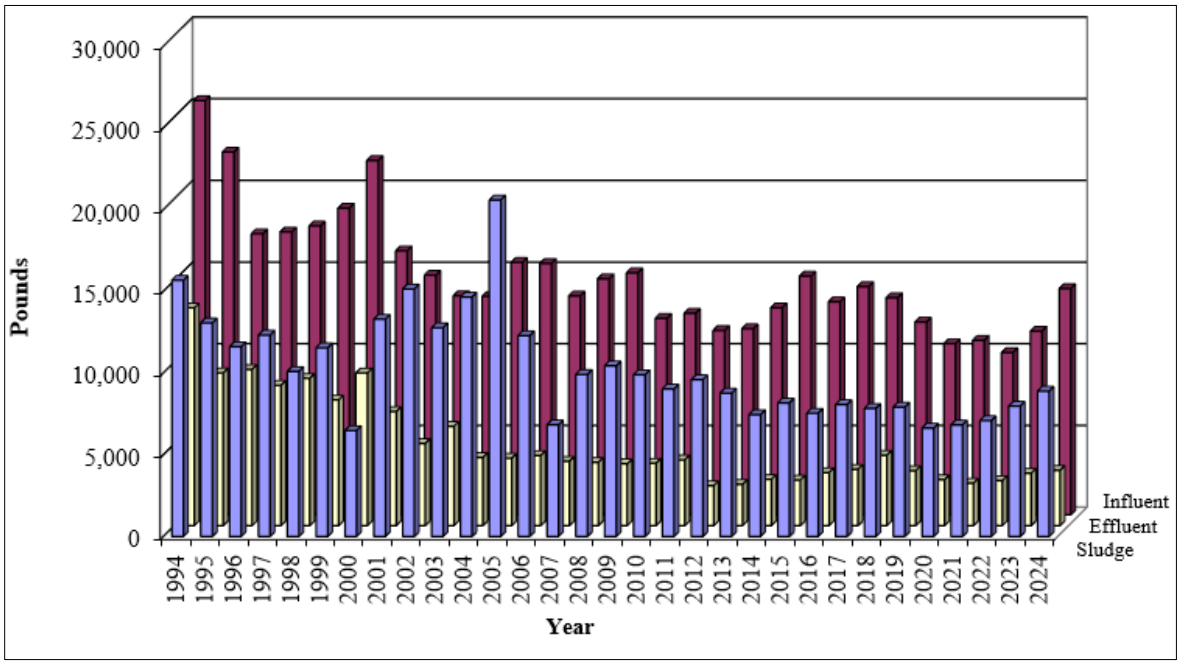
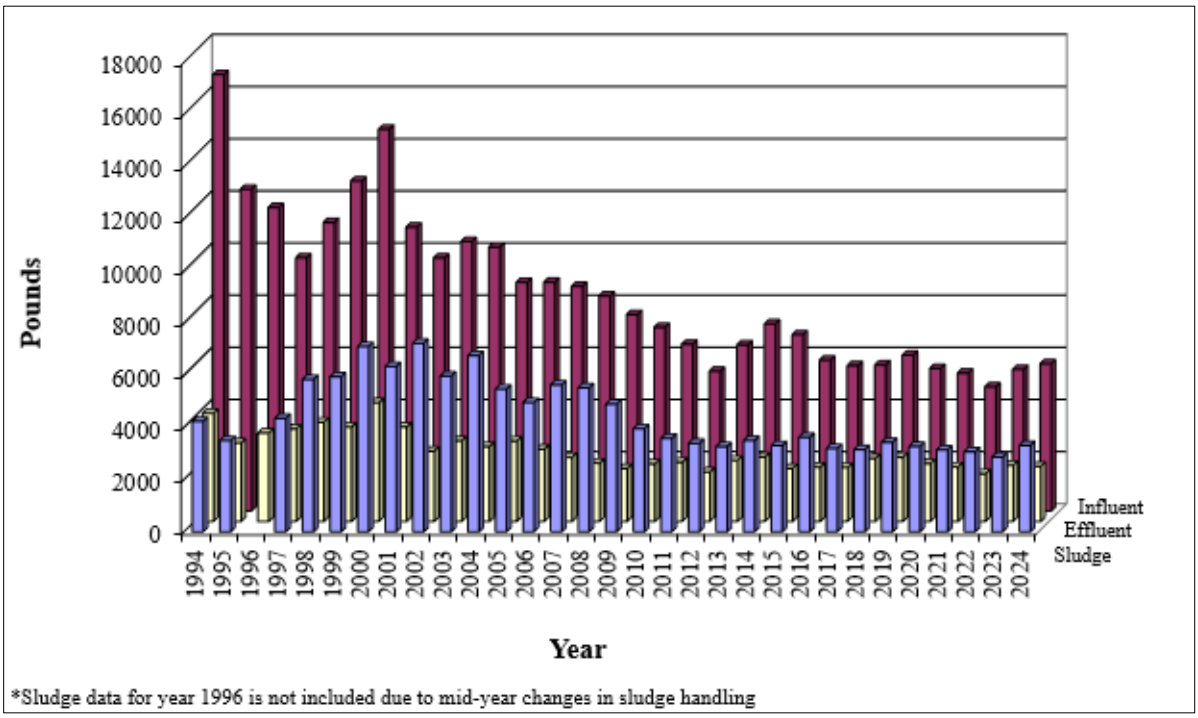


FIGURE 32
Zinc Loading Trend Analysis for Bucklin Point
Sludge, Influent, and Effluent



FIGURES 33 and 34 present the copper loading trend analyses for Field's Point and Bucklin Point, respectively. At Field's Point, copper loading increased in the influent and sludge but decreased in the effluent from 2023 to 2024. The discrepancy between the influent and combined effluent and sludge loading was 16%. At Bucklin Point, copper loadings increased in the influent, effluent, and sludge from 2023 to 2024. The discrepancy between the influent and combined effluent and sludge loading was 5%. These discrepancies can be attributed to the loading in the grit and general variability due to sampling and analytical methods.

FIGURE 33
Copper Loading Trend Analysis for Field's Point
Sludge, Influent, and Effluent

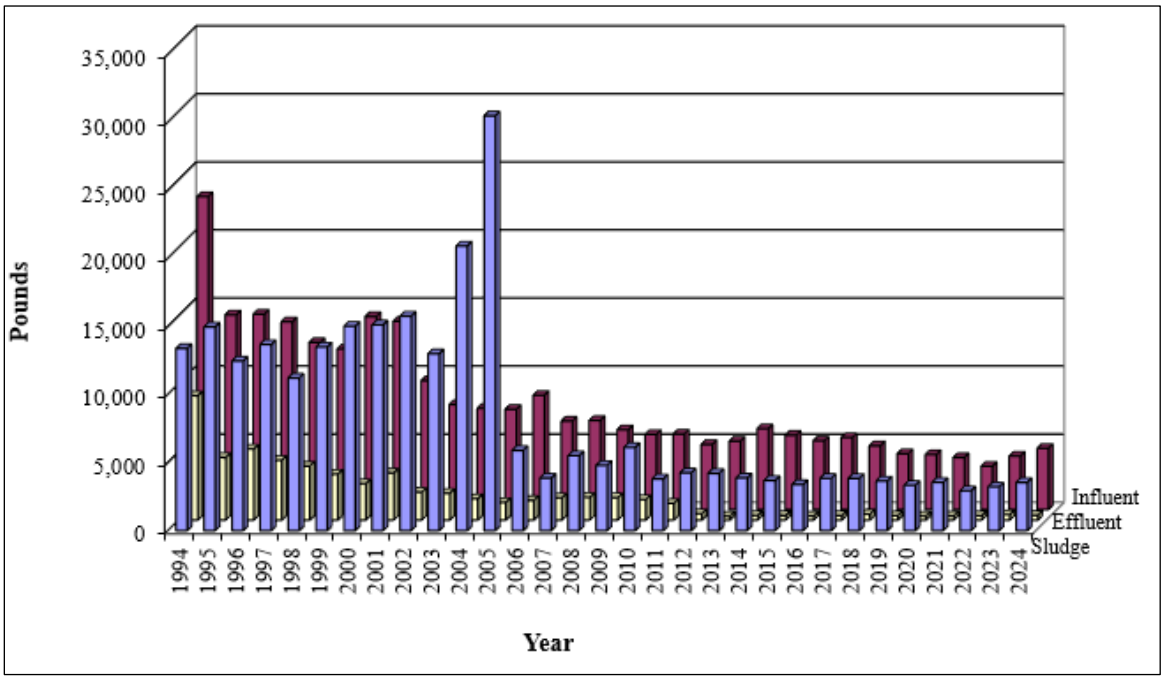
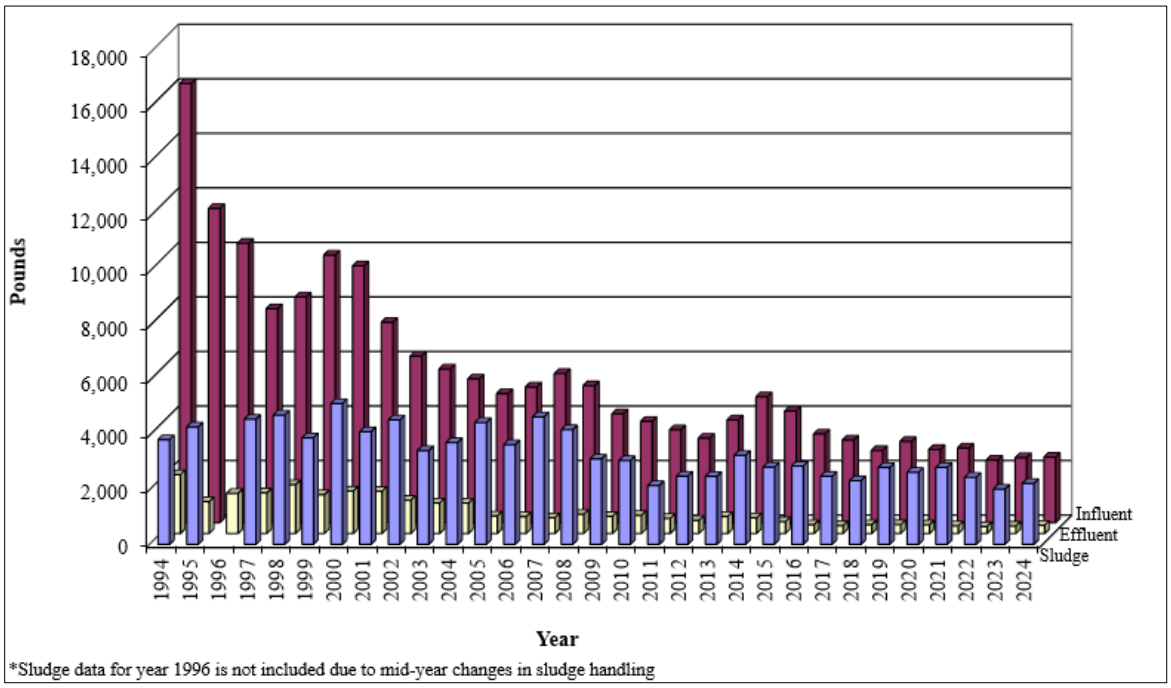


FIGURE 34
Copper Loading Trend Analysis for Bucklin Point
Sludge, Influent, and Effluent



CBOD and TSS Loadings

CBOD and TSS loading historical trend analysis provides an interesting means of determining the ability of the individual facility to handle variability in influent loadings without disruption of plant operations. While previous RIPDES permits required BOD monitoring in the influent and effluent, the current permits replaced BOD monitoring with CBOD monitoring. The following figures retain the historical BOD loading data through the last date of monitoring on November 30, 2017.

For Bucklin Point, FIGURES 35 and 36 show the 30-day average trend for influent and effluent BOD/CBOD and TSS, respectively. Historical effluent BOD and TSS at Bucklin Point show a decline and overall reduction in variability beginning in 2005 which is largely attributable to improved treatment processes as a result of comprehensive facility upgrades that began to go online that year.

FIGURE 35
BOD and CBOD Loading Trend Analysis for Bucklin Point Influent and Effluent

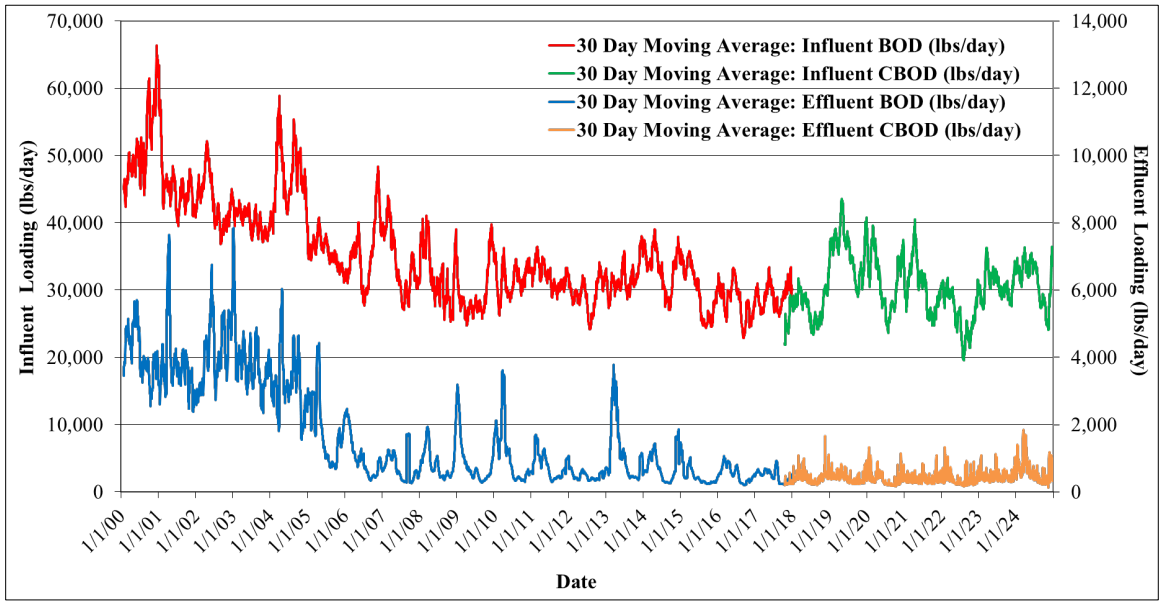
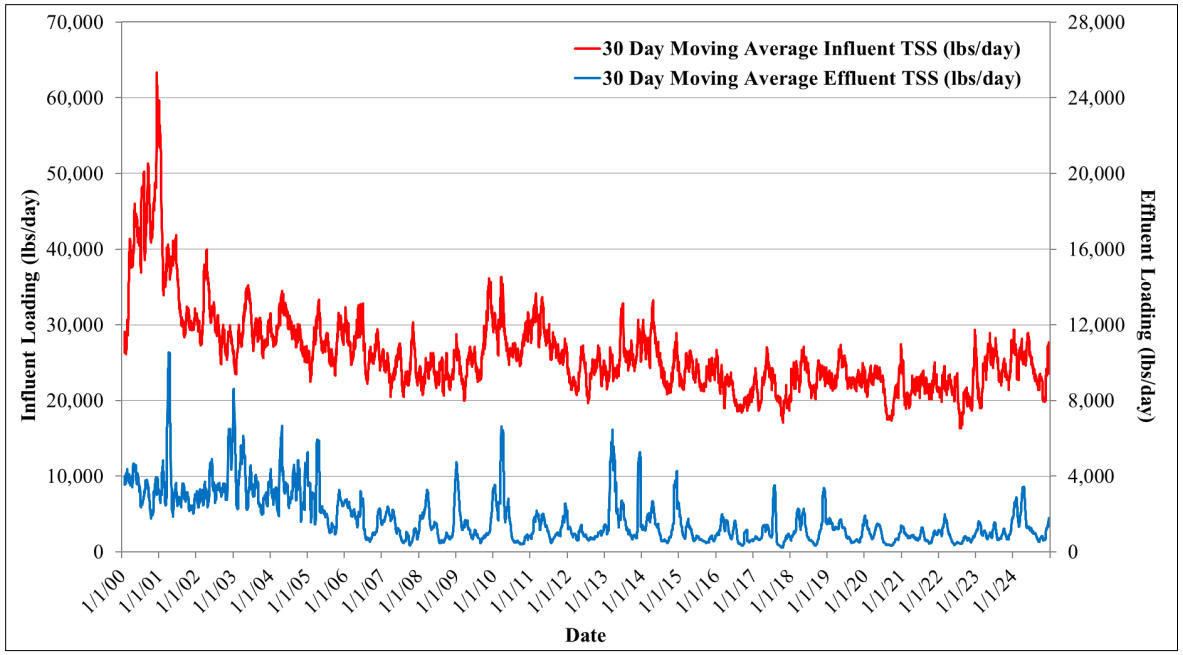


FIGURE 36
TSS Loading Trend Analysis for Bucklin Point Influent and Effluent



FIGURES 37 and 38 show the 30-day average BOD, CBOD, and TSS data for Field's Point. In 2024, loading from the CSO tunnel accounted for approximately 3.3% of influent CBOD and approximately 5.0% of influent TSS loading. Periods of high influent loading are possibly attributable to maintenance within the collection system, or wet weather events. It is interesting to note that despite these transient increases in the influent loading rates, effluent loadings typically show very little variability. This demonstrates the buffering capacity of both facilities, and the ability of Operations staff to effectively adjust conditions to treat incoming pollutants. FIGURES 37 and 38 show a decline and less variability in effluent BOD and TSS beginning in 2012 at Field's Point, which is most likely attributable to plant upgrades associated with the BNR treatment process, parts of which became operational in 2012.

FIGURE 37
BOD and CBOD Loading Trend Analysis for Field's Point Influent and Effluent

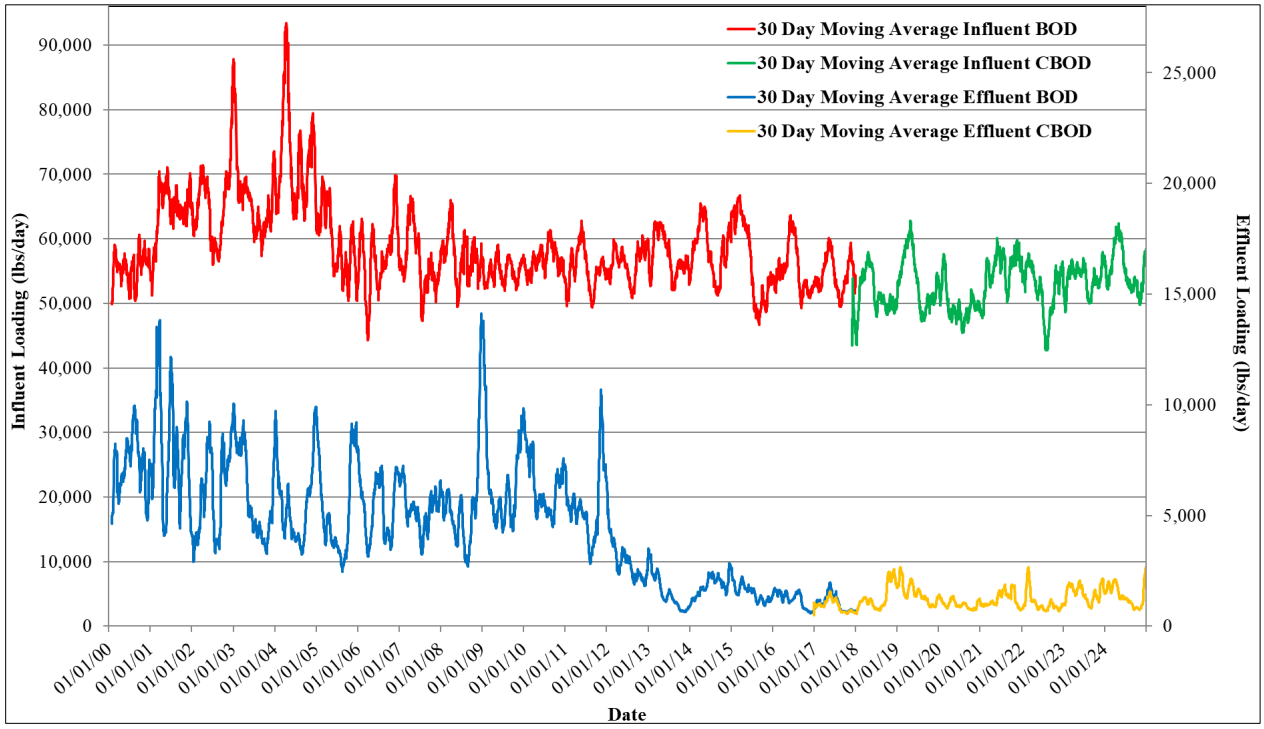
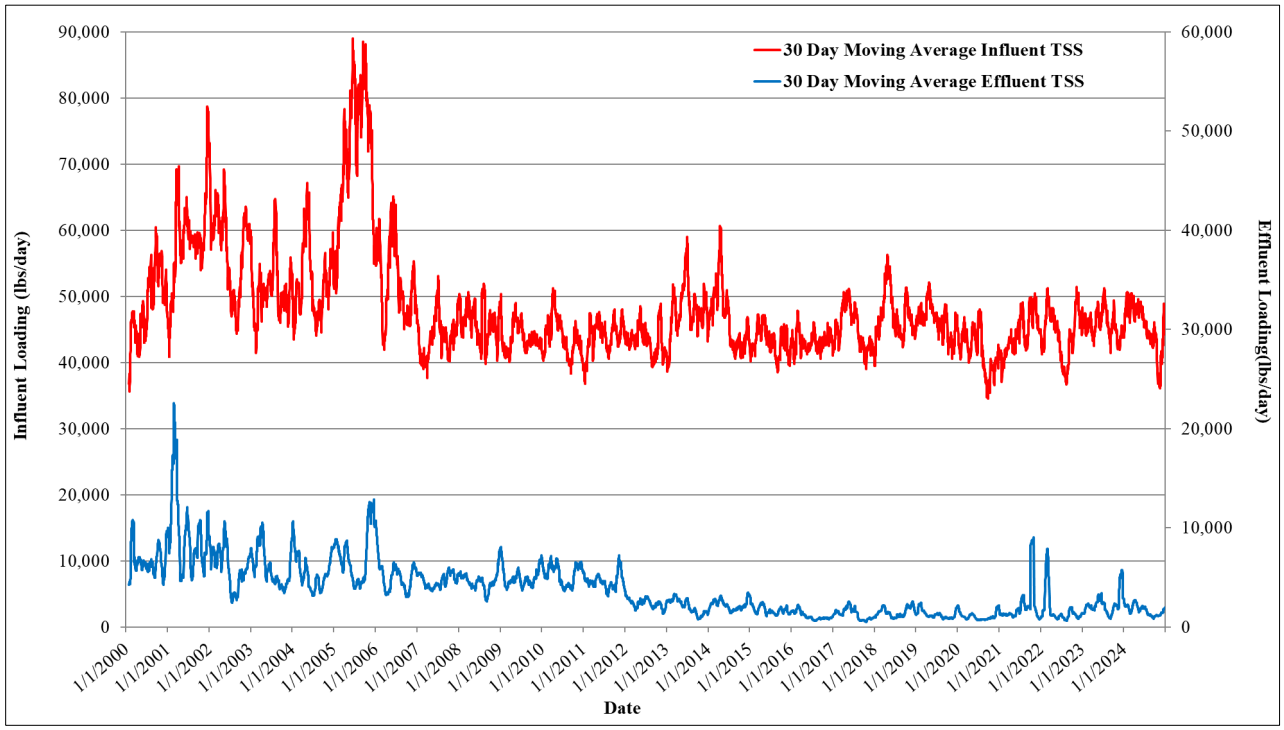


FIGURE 38
TSS Loading Trend Analysis for Field's Point Influent and Effluent



Comparison of Final Effluent Concentrations in 2024 and Saltwater Water Quality Criteria for Receiving Waters

A comparison of final effluent concentrations of permitted parameters and water quality criteria is useful to evaluate the potential impact of the treatment plants on the receiving waters. TABLE 32 lists measured dissolved and total metal concentrations in the effluent, as well as cyanide, pH, and fecal coliform bacteria compared to saltwater water quality criteria determined by DEM. Comparisons are made between annual averages and chronic criteria that protect from long-term exposure, and between annual maxima and acute criteria that are established to protect marine life and waters from short-term exposures to pollutants. Effluent concentrations in bold in TABLE 32 exceeded those water quality standards. Dissolved metals are measured monthly at the two plants and total metals are measured twice per week. Saltwater water quality criteria are set for dissolved metals, based on a metals translator conversion factor, converting from total to dissolved phase. Default EPA conversion factors range from 0.83 to 1.0 (a ratio without units). Dissolved concentrations in the effluent can be compared to the water quality criteria with the understanding that dilution occurring in the established mixing zones at the outfalls quickly lowers the concentrations in the Bay waters. This was demonstrated in the 2001 and 2002 trace metal study of the Bay Waters by NBC, URI, and Microinorganics, Inc. The trace metal study conducted by NBC and URI found both the Seekonk and Providence River reaches of Narragansett Bay meeting EPA water quality

criteria for metals. These findings were presented to DEM. As a result of this work, the Seekonk and Providence Rivers were removed from the state EPA 303(d) list of impaired water bodies for metals.

TABLE 32
Comparison of 2024 Final Effluent Concentrations and Water Quality Criteria of Receiving Waters

Pollutant	Phase and Statistical Category	Bucklin Point Effluent Results (ppb)*	Field's Point Effluent Results (ppb*)	Chronic WQC (ppb)	Acute WQC (ppb)
Copper	Dissolved phase effluent annual average	2.92	1.98	3.1	
	Dissolved phase effluent annual maximum	**6.386**	2.858		4.8
	Total effluent annual average	4.73	2.368		
	Total effluent annual maximum	10.23	5.339		
Lead	Dissolved phase effluent annual average	<0.300	<0.300	8.1	
	Dissolved phase effluent annual maximum	0.3065	<0.300		210
	Total effluent annual average	0.457	0.425		
	Total effluent annual maximum	2.041	1.228		
Nickel	Dissolved phase effluent annual average	**8.67**	**10.90**	8.2	
	Dissolved phase effluent annual maximum	18.00	17.37		74
	Total effluent annual average	8.75	11.10		
	Total effluent annual maximum	25.04	40.34		
Silver	Dissolved phase effluent annual average	<0.03000	<0.04000		
	Dissolved phase effluent annual maximum	0.03876	0.08949		1.9
	Total effluent annual average	0.160	0.0440		
	Total effluent annual maximum	0.868	0.1447		
Zinc	Dissolved phase effluent annual average	32.19	26.48	81	
	Dissolved phase effluent annual maximum	56.13	60.02		90
	Total effluent annual average	32.25	23.85		
	Total effluent annual maximum	57.38	59.72		
Mercury	Dissolved effluent annual average	NM	NM	0.94	
	Dissolved effluent annual maximum	NM	NM		1.8
	Total effluent annual average	0.00180	0.00132		
	Total effluent annual maximum	0.00303	0.00189		
Total Cyanide	Total effluent annual average	**12.4**	**5.36**	1	
	Total effluent annual maximum	**22.1**	**8.81**		1
pH	Total effluent annual minimum (s.u.)	**6.25**	**6.36**	> 6.5 < 8.5	
	Total effluent annual maximum (s.u.)	7.3	7.21		> 6.5 < 8.5
Enterococci Bacteria**	Total effluent annual geometric mean	8.2	9.1	35	104
Fecal Coliform Bacteria***	Total effluent annual geometric mean	6.8	6.5	50	400

*Results in bold exceed the water quality criteria.

**Enterococci results and criteria in MPN/100 mL; criteria are for primary contact/swimming; acute criteria apply specifically to designated beaches.

***Fecal coliform results and criteria in MPN/100 mL; criteria are for primary contact/swimming and only applied if adequate enterococci data are not available; acute water quality criterion states “not more than 10% of the total samples taken shall exceed 400 MPN/100 mL”.

From TABLE 32, the following conclusions can be made regarding the various pollutant parameters:

- Dissolved copper concentrations at Field's Point met both the acute and chronic water quality criteria, but Bucklin Point exceeded the acute criterion. It is often difficult for wastewater effluent to meet the receiving water quality criteria for copper since the limit in drinking water is over 400 times higher than the limit in the receiving waters.

- Lead continues to show annual average and maximum dissolved concentrations substantially lower than the acute and chronic water quality criteria at both facilities. The annual maximum for total lead at Field's Point and Bucklin Point is over two orders of magnitude lower than the acute dissolved lead criterion.

- The dissolved nickel annual maximum concentrations at both facilities were below the acute saltwater quality criterion. However, the annual averages exceeded the chronic criterion.

- The dissolved silver annual maximum and average concentrations were all below the acute water quality criterion. There is no chronic saltwater water quality criterion established for silver.

- Maximum and average dissolved zinc concentrations at both facilities are less than the acute and chronic water quality criteria.

- The annual average and maximum effluent total cyanide concentration were above the chronic and acute water quality criteria at both Field's Point and Bucklin Point. Though the effluent did not meet these criteria, effluent concentrations are rapidly diluted as the effluent enters the mixing zone of the receiving waters. Cyanide loadings at both facilities have generally decreased over time.

- pH annual effluent maxima were within water quality criteria at both plants; however, the effluent minima were outside of the water quality criteria. Low effluent pH is often associated with rainfall events or a result of the biological nutrient removal processes used at the treatment plants. Both facilities remained within the RIPDES permit limitations of 6.0 s.u. to 9.0 s.u.

- The annual geometric means of all fecal coliform bacteria sample results for each NBC facility remained well below the 50 MPN/100 mL chronic water quality criterion. The acute water quality criterion states "not more than 10% of the total samples taken shall exceed 400 MPN/100 mL". In 2024, Bucklin Point had one result out of 458 samples (0.2%) above 400 MPN, while Field's Point had one out of 457 samples (0.2%) above 400 MPN/100 mL.

- The annual geometric means of enterococci bacteria effluent sample results from each NBC facility remained well below the 35 MPN/100 mL chronic water quality criterion. Bucklin Point and Field's Point each had eight effluent sample results greater than the 104 MPN/100 mL acute criterion during 2024. It should be

noted that this acute criterion is specifically for determining swimming advisories at designated beaches. Comparison here to effluent sample results is for informational purposes only and is not directly relevant to water quality compliance at bathing beaches.

RIPDES Compliance

Analysis of Toxic Pollutant Loadings for Discharge Monitoring Reports

The Laboratory strives to use analytical methods that are sufficiently sensitive to measure the concentrations of pollutants in the influent and effluent of each facility as accurately as possible. Often, pollutants are present in such minute quantities that they cannot be detected by the analytical method that is appropriate for the sample matrix. There are various means of dealing with those results that are below a detection limit. In this report, all calculations have dealt with non-detectable results by replacing them with a value equal to the detection limit. This is the method that was specified in RIPDES permits prior to 2010. Calculations have also been performed in this manner and reported in all previous Pretreatment Annual Reports. This method results in over-estimation of loading whenever there are results below the detection limit.

Further, this method also results in summary data reported in Pretreatment Annual Reports that will no longer necessarily correlate with the data that is reported to the DEM in monthly DMRs. DEM changed the below-detection-limit reporting requirements for non-bacteria samples in September 2010 to require replacing non-detected results with a zero for the purposes of most DMR calculations. In cases where non-detect data were analyzed with a detection limit greater than the limits specified in the RIPDES permit (i.e., insufficiently sensitive method used), values are replaced with the detection limit itself. For fecal coliform, reporting methods were changed on July 1, 2015. Prior to this date, any result that was reported as less than the detection limit of 2.0 MPN/100 mL was replaced with a 2 when calculating geometric means. After July 1, 2015 any result that was reported as <2.0 MPN/100 mL was replaced with a result of 1 MPN/100 mL. This rule was reverted back on June 1, 2019, when DEM again asked that all bacteria results less than the detection limit be substituted with the detection limit value. For enterococci, results less than the detection limit have always been substituted with the detection limit itself as these samples are often analyzed after dilution, which causes a proportionate increase in the detection limit. For consistency with the reporting of data on the DMR, data in this section for RIPDES permit compliance have been analyzed according to the DMR methods in use at the time of original reporting.

Field's Point Facility

RIPDES permits were issued for both Field's Point and Bucklin Point that became effective on December 1, 2017, replacing the permits previously in effect since 2001. The NBC formally contested several of the 2017 permit requirements, which were initially stayed in a Consent Order, though ultimately upheld in a subsequent Consent Agreement

with DEM, effective September 5, 2018. TABLE 33 lists the limits for metals, cyanide, and whole effluent toxicity (bioassay) parameters under the current permit. TABLE 33 also presents the measured maximum daily values and maximum monthly averages for the Field's Point facility for these parameters during 2024. It should be noted that available cyanide is regulated by the RIPDES permit and not total cyanide, therefore TABLE 32 shows available cyanide data.

TABLE 33
Comparison of Field's Point RIPDES Limits with 2024 Wastewater Treatment Facility Results

	RIPDES Permit Limits		2024 Results	
Parameter	**Maximum Daily (ppb)**	**Average Monthly (ppb)**	**Maximum Daily* (ppb)**	**Average Monthly* (ppb)**
Arsenic	306.3	5.4	3.23	2.73
Copper	24.5	24.5	5.34	3.17
Nickel	331	127	40.34	13.74
Available Cyanide**	4	4	5.56	1.87
Bioassay (Acute) *Americamysis bahia (LC50)****	100% or greater	-	>100%	-
Bioassay (Chronic) *Arbacia punctulata (C-NOEC)****	Monitor only	-	100%	-

*For comparison to the RIPDES permits, the highest maximum daily value and the highest average monthly value reported for 2024 are listed in the table.

**Note that the limits for compliance/noncompliance determinations are based on the quantitation limit, which is defined as 10.0 ppb for available cyanide.

***Permit limits for bioassays are set for the minimum, not maximum. The bioassay 2024 results represent the minimum quarterly results.

TABLE 34 shows that in 2024, Field's Point met all of the daily and monthly discharge limitations specified in the RIPDES permit for these toxic pollutants and related parameters. For available cyanide, the quantitation limit of 10.0 ppb is used to determine actual compliance, so the exceedance of the permit limit was not considered a compliance violation. All quarters in 2024 showed toxicity test results in compliance with the permit limit.

TABLE 34
2024 Compliance Status with RIPDES Limits for Field's Point

Parameter	2024 Compliance with RIPDES Permit Limits?	
	Maximum Daily	**Average Monthly**
Arsenic	Yes	Yes
Copper	Yes	Yes
Nickel	Yes	Yes
Available Cyanide*	Yes	Yes
Bioassay (Acute) *Americamysis bahia* (LC_{50})	Yes	-
Bioassay (Chronic) *Arbacia punctulata* (C-NOEC)	-	-

*The limit for compliance/noncompliance determinations is based on the quantitation limit which is defined as 10.0 ppb for cyanide.

The NBC is actively working to ensure full compliance with all the toxic and conventional pollutants specified in its RIPDES permits. In 2004, at the request of DEM, the NBC recalculated toxic pollutant permit limits based on the metal translator study conducted by the NBC in 2001 and 2002. The results of the metal translator study illustrated that the Providence and Seekonk Rivers met water quality criteria for the trace metals analyzed which were copper, lead, nickel, and silver. This study resulted in both rivers being removed from the EPA 303(d) list of impaired water bodies for metals.

Bucklin Point Facility

As noted above, RIPDES permits were issued for both Field's Point and Bucklin Point that became effective on December 1, 2017, replacing the permits previously in effect since 2001. The NBC contested several of the new Bucklin Point permit limits, including those for effluent total copper and total nickel. On September 5, 2018, the NBC and DEM signed Consent Agreement RIA-424, setting interim limits for total copper and total nickel in the effluent. TABLE 35 outlines the current RIPDES permit limits for metals, cyanide, and the whole effluent toxicity (bioassay) parameters. The Consent Agreement limits and a summary of 2024 effluent results for maximum daily values and maximum monthly averages for the Bucklin Point facility are also provided for comparison. It should be noted that available cyanide is regulated by the RIPDES permit, not total cyanide, therefore TABLE 35 shows available cyanide data.

TABLE 35 and TABLE 36 indicate that Bucklin Point was unable to meet the originally issued maximum daily or monthly average permit limits for copper but was able to meet the Consent Agreement limits. Bucklin Point effluent nickel also exceeded the originally issued monthly average permit limit, but did meet the Consent Agreement limit. The remaining parameters including nickel daily maximum, zinc, available cyanide, and the bioassay parameters remained in compliance with RIPDES permit limits throughout 2024.

TABLE 35
Comparison of Bucklin Point RIPDES & Interim Effluent Limits with 2024 Wastewater Treatment Plant Facility Results

	RIPDES Permit Limits		Consent Agreement Limits		2024 Results	
Parameter	**Maximum Daily (ppb)**	**Average Monthly (ppb)**	**Maximum Daily (ppb)**	**Average Monthly (ppb)**	**Maximum Daily (ppb)**	**Average Monthly* (ppb)**
Copper	6.5	6.5	86.1	29.8	10.23	7.36
Nickel	70.3	14.3	70.3	25.0	25.04	18.96
Zinc	85.6	85.6	-	-	57.38	43.42
Available Cyanide**	0.8	0.8	-	-	5.00	0.63
Bioassay (Acute) *Americamysis bahia* (LC50)***	100% or greater	-	-	-	>100%	-
Bioassay (Chronic) *Arbacia punctulata* (C-NOEC)***	50%	-	-	-	100%	-

*The highest average monthly value reported for the year is listed in this table for comparison against the RIPDES permit.

**The limit for compliance/noncompliance determinations is based on the quantitation limit, which is defined as 10.0 ppb for cyanide.

***Permit limits for bioassays are set for the minimum, not maximum. The bioassay 2024 results represent the minimum quarterly results.

TABLE 36
2024 Compliance Status with RIPDES & Interim Effluent Limits for Bucklin Point Facility

	2024 Compliance with RIPDES Permit Limits?		2024 Compliance with Consent Agreement Limits?	
Parameter	**Maximum Daily**	**Average Monthly**	**Maximum Daily**	**Average Monthly**
Copper	No	No	Yes	Yes
Nickel	Yes	No	Yes	Yes
Zinc	Yes	Yes	-	-
Available Cyanide*	Yes	Yes	-	-
Americamysis bahia (LC_{50})	Yes	-	-	-
Arbacia punctulata (C-NOEC)	Yes	-	-	-

*The limit for compliance/noncompliance determinations is based on the quantitation limit which is defined as 10.0 ppb for cyanide.

Summary

In general, the two POTWs continue to show significant improvements in operations and effluent quality since NBC took over operations and with the implementation of the NBC Pretreatment Program and Pollution Prevention initiatives. The Pretreatment and TAC sections have implemented educational programs to assist firms in achieving and maintaining compliance. The NBC has also significantly improved sampling methods over the past several years and improved sampling of septage and sludge have shown clear results. The aim of the EM sampling program is to collect representative samples at every stage, reduce contamination, and provide valuable information to POTW and regulatory staff in order to protect the environment and serve public interest. The Laboratory continues to improve analytical procedures and research new technologies to improve the accuracy of all analytical procedures and sampling. The Field's Point and Bucklin Point treatment plant upgrades have clearly resulted in not only reduced nutrients but improved effluent quality for a multitude of other parameters as well.

The overall toxic pollutant loadings to the two NBC wastewater treatment plants have decreased over time, despite the substantial portions of influent toxic metal pollutants originating from residential sources, as demonstrated by NBC studies. This is a clear reflection of the fine work done by the NBC toxic reduction and control programs. Year to year variability is still expected, and in 2024 both the influent and effluent loadings at each facility increased compared to the year prior. The influent metals loading from 2023 to 2024 increased at Field's Point by 18.8% and at Bucklin Point by 3.7%. In the effluent, total metals loadings increased by 3.2%, or 173.7 pounds at Field's Point, and by 2.7%, or 79.5 pounds at Bucklin Point. These increases do not diminish the striking long-term reduction in loadings observed over the past 30-40 years. Overall, 2024 effluent loadings continue to support the 2002 removal of NBC receiving waters from the EPA 303(d) List of Impaired Waters by the DEM, a clear testament to the effectiveness of the NBC toxic reduction and control programs.

VI. ENFORCEMENT

NBC Enforcement Actions

The NBC will initiate some type of enforcement action against 100% of those people and companies who violate the NBC Rules and Regulations. A wide range of enforcement actions are used to bring industrial and commercial users into compliance with NBC requirements and effluent limitations. The action can be as routine as a telephone call or as serious as an administrative order and assessment of penalty. Hundreds of phone calls were made during 2024, and 2,364 Notices of Violation (NOV) were issued for various violations of NBC Rules and Regulations. The following is a description of the most common types of enforcement actions utilized by the NBC and a brief summary of the number of each type initiated by the NBC over the past year:

- *Telephone calls* to users are made daily to discuss violations and problems. These calls are often sufficient to bring the user into compliance. A telephone log sheet documenting the conversation is prepared and placed in the user file or in some cases a letter may be sent to the user summarizing the discussion.

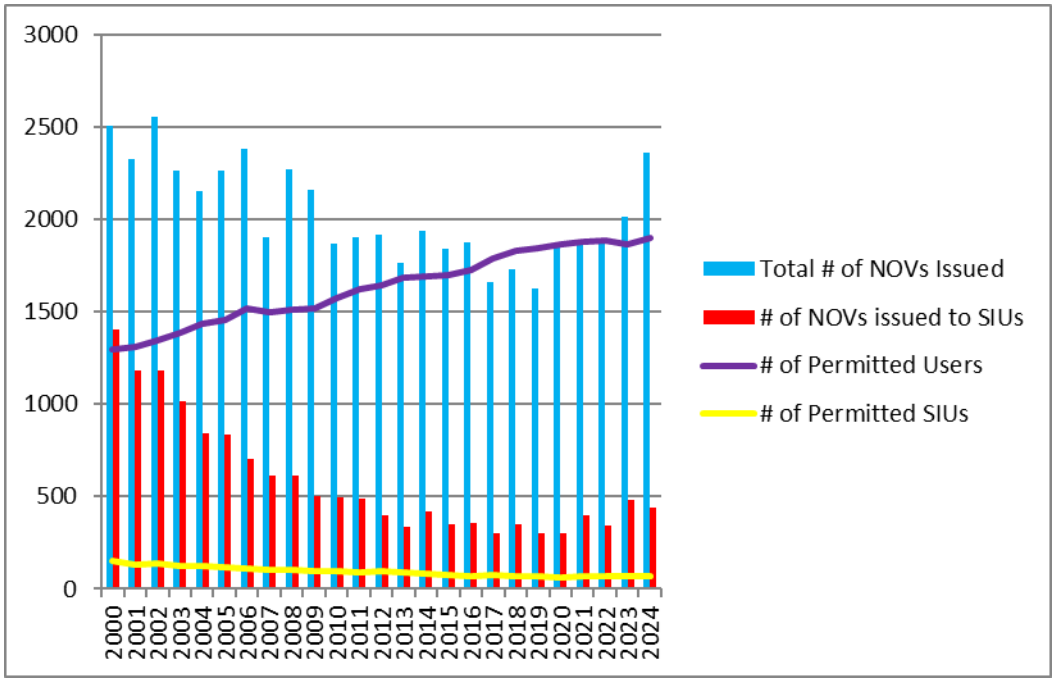
- *Notices of Violation* are issued by the NBC to inform a user of its noncompliance with NBC Rules and Regulations and warn the user that escalated enforcement action may result for continued noncompliance. These letters can be computer generated or may be tailored by the Pretreatment staff. A NOV specifically states that its issuance does not prohibit additional enforcement action. It also informs the violator that the non-compliance may result in publication of the firm's name in The Providence Journal and explains that inclusion on that list will subject the violator to liability for payment of the publication. In addition, NOVs refer the user to the Pollution Prevention Program which offers free technical and compliance assistance. The most typical NOVs are described below. TABLE 37 describes each type of NOV that is issued and the number of each issued in 2024. Examples may be viewed in ATTACHMENT VOLUME I, SECTION 4.

TABLE 37
2024 Notices of Violation

NOTICE OF VIOLATION	DESCRIPTION	NUMBER ISSUED IN 2024
Letter of Deficiency	• Issued by certified mail • Notifies users of deficiencies identified during inspections • Requires corrective actions with specific due dates	121
Failure to Meet Standards	• Issued when NBC or user self-monitoring results indicate a violation of NBC or EPA discharge limitations including monthly average limits • Requires an increase in sampling frequency	191
Notice of pH Violations	• Issued each time a user violates the high or low pH limit as indicated on the user monthly pH report	108
Failure to Submit Monitoring Reports	• Issued monthly to users that fail to submit a Self-Monitoring Compliance Report (SMCR), pH Monitoring, Zero Discharge Certification or Best Management Practices (BMP) reports on time	883
Failure to Complete or Sign Required Reports	• Issued to users that do not complete or sign SMCRs or pH Monitoring Reports	12
Failure to Sample and/or Analyze for All Parameters	• Issued to users that did not sample for and/or analyze all parameters required by their permits	12
Failure to Immediately Report Violations	• Issued to users that fail to notify the NBC within 24 hours of becoming aware of violations of NBC discharge limits in accordance with 40CFR403.12(g)(2)	43
Failure to Satisfy NBC Requirements	• Issued to users that fail to submit required documents or exceeding required completion dates	994
Failure to Report Pretreatment Equipment Failure	• Issued to users that fail to notify the NBC that their pretreatment system failed	0
Total Notice of Violation Letters Issued		**2,364**

FIGURE 39 graphically shows the number of NOVs issued to all users, the number of NOVs issued to SIUs and the number of permitted users for the period of 2000 through 2024. As can be seen, the total number of NOVs issued is relatively consistent from year to year. The number of NOVs issued to SIUs in 2024 decreased by 9.3% when compared to 2023. The number of NOVs issued to SIUs has steadily declined from 2000 to 2024. In fact, the number of SIU NOVs decreased by 68.8% since 2000. The number of permitted users increased steadily since 2000. For the period of 2000 to 2024 there has been an overall increase of 46.5% in the number of permitted users. This drastic decrease in the number of NOVs issued to SIUs and the declining trend observed in NOVs issued to all users since 2000, considering the increase in the number of permitted users, can be attributed to the educational efforts of Pretreatment and Pollution Prevention staff.

FIGURE 39
NOVs ISSUED TO ALL USERS AND SIUs 2000 – 2024



- *Letters of Wastewater Discharge Permit Suspension* are typically issued to SIUs who have not discharged process wastewater to the NBC sewer system for at least 30 days. These letters are issued by the Executive Director. During 2024, the NBC did not issue any letters of suspension. These letters require the user to permanently disconnect the final process discharge line from the NBC sewer line due to their potential to adversely impact the NBC should illegal or unpermitted discharges occur. The suspension of a user permit relieves the user from having to submit monthly monitoring reports. Inspections of these users by Pretreatment staff are still conducted since they still have the potential to impact the NBC sewer system.

- *Annual publication* of user names in the state's largest daily paper will result if a violator meets the criteria for Significant Non-Compliance as defined in 40CFR 403.8(f)(2)(vii). All NOV letters issued during the preceding year contained language warning the industrial user that the name of their firm would be published if their outstanding violation was not quickly corrected. Despite these warnings, the names of 18 firms found to be in SNC with NBC regulations were listed in an advertisement in the PROVIDENCE JOURNAL on February 28, 2025, for violations occurring between October 1, 2023, and December 31, 2024. A copy of this public notice is provided later in this chapter in FIGURE 40.

- *Letters from the Legal Section* are issued to companies that have not submitted required reports, plans, and permit applications within 120 days of the due date. These letters inform the company that if the required information is not submitted within 30 days escalated enforcement action may be initiated. The issuance of these letters often results in the immediate submission of the outstanding report/plan/application. In 2024 the Legal Section issued 48 of these letters.

- *Meetings with users* are held to discuss problems or violations the firm may be experiencing and often produce good results. Before initiating an administrative action and/or assessing an administrative penalty, the parties may reach a resolution of the issues without further enforcement action. At these meetings, the user is informed of its potential financial liability should its non-compliance status continue, often resulting in compliance. Two of these meetings were scheduled during 2024 which resulted in the requirements being satisfied.

- *Administrative Orders* (AO) are Orders issued by the NBC to address repeated or serious instances of noncompliance. AOs are classified into one of four general types, Compliance Orders, Cease and Desist Orders, Consent Orders/Settlement Agreements and Termination/Suspension of Permit/Service Orders. The AO may or may not assess an administrative penalty. Depending on the type of AO issued, the user may be required to immediately cease discharging or achieve compliance with NBC Rules and Regulations within a specified time frame. AOs are considered the harshest control vehicle for ensuring compliance with NBC regulations. All AOs entitle the alleged violator the right to request a hearing before an independent hearing officer with regard to both the issue of compliance and penalties. AOs are issued by the NBC Chief Legal Counsel.

- *Civil Suits* are filed against users for nonpayment of pretreatment fees or to enforce the terms of an Administrative Order, Consent Order or Final Decision and Order. Depending on the amount outstanding, the suits are filed either in District or Superior Court. These suits are filed only after all other collection avenues have been attempted and were unsuccessful. Firms may pay in full, establish a payment schedule or negotiate a settlement as a result of these suits. During 2024, no civil suits were filed.

2024 Escalated Enforcement Actions

During 2024 the NBC did not issue any Administrative Orders (AO) to industrial or commercial users. However, one AO was issued for violations of an NBC Sewer Connection Permit. through December 31, 2024, is found at the end of this chapter in TABLE 39. The table provides a history of the penalties assessed, the penalties paid and the present status of each enforcement action. A brief summary of the AO issued in 2024 is provided below and an update on the status of pending AOs is provided later in this chapter.

2024 Enforcement Actions

Field's Point District

AO #FP-01-24 was issued to Vincent Mann of Kyltiff Investment & Consulting, LLC on July 25, 2024. The AO cited Mr. Mann for connecting to an NBC sewer in violation of NBC Direct Sewer Connection Permit, SC230113, for a property located at 101 Springfield Street in Providence. The AO ordered Mr. Mann to uncover and expose the sewer connection from the property line through the NBC manhole in the street for NBC inspection, correct any deficiencies noted, install an approved cleanout at the property within 45 days of receipt of the AO, and pay an administrative penalty of $10,000. A status conference was held in August 2024. Thereafter, Mr. Mann corrected all deficiencies and satisfied all requirements of the AO. A Consent Order (CO) was executed in which the company agreed to pay an administrative penalty of $5,000. All requirements have been satisfied. This matter is now closed.

Update of Past Enforcement Actions

Field's Point District

- AO #FP-01-23 was issued to Providence Specialty Products, LLC and Mark Federico, Sr. on July 21, 2023. The AO cited Providence Specialty for failure to comply with NBC effluent discharge limits for pH, failure to comply with NBC effluent discharge limits for total oil & grease, failure to submit pH Monitoring Reports on time, failure to submit Self-Monitoring Compliance Reports (SMCR) and analytical results on time, failure to satisfy NBC requirements on numerous occasions, including failure to submit resampling results, process plans, a Safety Data Sheet as required, a permit application, and a permit application fee, failure to notify the NBC of discharge violations within twenty-four hours of discovering the violation, and failure to monitor and analyze for all parameters required by the user's permit. A status conference was held in August 2023, and Providence Specialty submitted a comprehensive correction action plan to the NBC in early 2024. A Consent Order was executed in February 2025 to resolve the AO. Providence Specialty agreed to pay an administrative penalty of $23,850 in accordance with an agreed to payment plan and conduct internal staff trainings focused on methods to operate efficiently and avoid violations. The CO also contemplated stipulated penalties for future violations.

2024 Civil Suits

During 2024 the NBC did not issue any civil suits against a permitted company for violations of the Rules and Regulations and/or the terms of a Wastewater Discharge Permit.

Permit Suspensions

As stated in Section 1.8.16 of the NBC Rules and Regulations, the Executive Director may suspend the Wastewater Discharge Permit of any user who ceases operations for any period exceeding one month. The suspension does not act as a revocation of the permit, but rather as a temporary suspension of the users' rights under the permit while operations have ceased. During 2024, no Letters of Wastewater Discharge Permit Suspension were issued.

Supplemental Environmental Projects

Supplemental Environmental Projects (SEP) are additional requirements and/or extra activities that may be undertaken by a violator of environmental laws or regulations against whom enforcement action has been taken. In settlement negotiations, the violator or the regulating authority may propose that an environmental project be undertaken in consideration of a reduced penalty. In no case should the cost of the project to the violator be less than the offset amount of the penalty. A SEP may only be considered for inclusion in a settlement if the total settlement agreement ensures future compliance through corrective measures, a substantial monetary payment is made in addition to the SEP and if an appropriate nexus is demonstrated between the violation and the environmental benefits to be derived from the SEP.

The EPA recognizes seven categories of acceptable supplemental environmental projects and an eighth category for other projects that meet all conditions of the SEP Policy but do not exactly fit into one of the specific categories. The seven specific categories are public health, pollution prevention, pollution reduction, environmental restoration and protection, assessments and audits, environmental compliance promotion, and emergency planning and preparedness. Generally, projects must demonstrate an appropriate nexus between the nature of the violation and the environmental benefits to be derived. For example, if the violator was cited for repeated pH violations, the purchase and installation of digital or computerized pH monitoring and recording would provide sufficient nexus between the violation and the anticipated benefit to be derived from the use of the equipment.

Environmental Enforcement Fund

During the 1989 Legislative Session, 89-S-786 was passed into law which established the Narragansett Bay Commission Environmental Enforcement Fund (EEF). This fund consists of sums recovered by administrative or civil enforcement actions brought under the authority of Rhode Island General Laws, Chapter 46-25 (the NBC enabling legislation) and may be used for the following:

- Emergency response activities such as site inspections, investigatory reports, collection, monitoring, and analysis of samples of wastewater, spill response, etc.
- Enforcement activities such as legal activities, to enforce the provisions of this chapter, etc.
- Additional activities such as professional and emergency response training, environmental research, public information and education, etc.
- Bay bond debt retirement (discretionary in the event that funds have not been committed for projects within a three year period following their deposit into the fund).

150 volunteers participated with the City of East Providence for clean-up events collecting approximately 2.8 tons of mixed litter to be sent to the landfill and about 2 tons of green materials to compost.

In 2024, one proposal was submitted to the NBC Board of Commissioners for review and was approved, awarding $10,700 collected from environmental violations to projects that enhance the Rhode Island environment, environmental education and safety.

Since the late 1990s, the NBC has successfully sponsored large Earth Day river cleanup events that focused on beautifying the Woonasquatucket River. In 2013, the NBC initiated a grant program, provided through the EEF, intended to expand the positive impact to multiple rivers throughout the NBC service area rather than focusing solely on the Woonasquatucket River. The NBC continued this grant program in 2024 and was able to assist numerous local organizations, cities and towns by providing 16 small grants that allowed the organizations to purchase the supplies necessary to organize cleanups and perform river restoration activities within the NBC service area. A complete list of the grant award recipients can be found in CHAPTER VII.

A summary of the grants that were awarded Environmental Enforcement Funds in 2024 are listed below in TABLE 38.

TABLE 38
2024 Approved Environmental Enforcement Fund Proposals

EEF#	Company	Project	Amount Awarded
24-001	NBC Earth Day Clean-Up Grant Program awards to 16 agencies.	Grant program designed to offer financial assistance in the form of small grants to qualifying organizations conducting Earth Day Clean-Up events within the NBC service district.	$10,700
Total Approved in 2024			**$10,700**

Enforcement Response Plan

In accordance with 40CFR§403.8(f)(5), the NBC developed and submitted an Enforcement Response Plan (ERP) to the DEM. The plan was officially approved by the DEM in 1995. The ERP was revised and approved by DEM in 2003. During the Pretreatment Compliance Inspection (PCI) conducted in July 2021, it was determined the 2003 ERP contained outdated information. The PCI report required the ERP to be updated. The ERP was revised. The revision did not include any substantive changes. The revised ERP was submitted to DEM for review on December 9, 2021. DEM approved a non-substantial modification to the NBC Industrial Pretreatment Program to adopt the revised ERP on January 11, 2022. The purpose of the plan is to clearly establish anticipated reactions of the agency to specific violations of the relevant environmental laws and regulations. The plan explains the enforcement tools and mechanisms available and employed by the NBC and the Pretreatment Program. The plan suggests timetables for the initiation of enforcement actions that would be followed as soon as practicable after NBC staff becomes aware of any non-complying event. These timetables serve two goals. The timetables avoid continued user non-compliance for extended periods of time by requiring quick enforcement response by the NBC. Secondly, the quick enforcement response guarantees that evidence and memories will not become stale by the time delay that can occur when initiating an enforcement action.

Publication of Firms in Significant Non-Compliance (SNC)

Federal regulation 40CFR§403.8(f)(2)(vii) requires the NBC to publish at least annually the names of all industrial users in Significant Non-Compliance (SNC) with pretreatment standards or other pretreatment requirements during the preceding 15 months. A list of industrial users found to be in SNC with pretreatment standards and/or administrative requirements for the period of October 1, 2023, through December 31, 2024, were published in an advertisement in the PROVIDENCE JOURNAL on February 28, 2025. A copy of this advertisement is provided in FIGURE 39, while the Confirmation of Publication is provided in FIGURE 40.

During 2006 the NBC Rules and Regulations were modified to incorporate the revised EPA definition of SNC, detailed in the EPA Pretreatment Streamlining Regulations. The NBC complied with Federal regulations to cite any industrial user as being in SNC for violating any of the following criteria:

(a) Chronic violations of wastewater discharge limitations, defined here as those in which 66% or more of all measurements taken in a six (6) month period exceed (by any magnitude) a numerical Pretreatment Standard or Requirement for the same pollutant parameter,

(b) Technical Review Criteria (TRC) violation, defined here as those in which 33% or more of all the measurements for each pollutant parameter taken during a six (6) month period equal or exceed the product of the numerical Pretreatment Standard or Requirement multiplied by the applicable TRC value. (TRC = 1.4 for BOD, TSS, fats, oil, and grease and 1.2 for all other pollutants except pH),

(c) Any other violation of a pretreatment effluent limit (daily maximum or long-term average) that the NBC determines has caused, either alone or in combination with other discharges, pass through or interference (including endangering the health of NBC personnel or the general public),

(d) Any discharge of a pollutant that has caused imminent endangerment to human health, welfare, or the environment, or causes the NBC to exercise its emergency authority to halt or prevent such discharge,

(e) Failure to meet, within 90 days after the scheduled date, a compliance milestone contained in a permit or enforcement order, for starting construction, completing construction, or attaining final compliance,

(f) Failure to provide within 30 days after the due date, required reports such as Baseline Monitoring Reports, 90-day reports, periodic reports, and compliance schedule milestone reports,

(g) Failure to accurately report non-compliance,

(h) Any violation or group of violations that the NBC determines will adversely affect the operation or implementation of the Pretreatment Program.

Based on extensive user file reviews, the names of 18 firms were listed in the February 28, 2025 public notice in the Providence Journal. Of the 18 firms listed in SNC, nine users are located in Field's Point and nine are located in Bucklin Point. There were five firms in SNC subject to EPA categorical standards, three are located in Bucklin Point and two are located in Field's Point. Three firms are classified as non-categorical significant industrial users. One is located in Field's Point and conducts cheese manufacturing operations. The remaining two non-categorical significant industrial users are located in Bucklin Point, one conducts industrial laundry operations, and one manufactures aerogel insulation. Ten of the firms published are classified as non-significant industrial users. Four are located in Bucklin Point and six are located in Field's Point. These six firms conduct a wide variety of process operations. Five conduct food and/or beverage manufacturing operations, two conduct zero discharge stone cutting operations, two conduct printing operations, and one conducts paint stripping operations.

As noted above, there were 18 firms listed in SNC in 2024, an increase from the 15 firms listed in SNC in 2023. All but five of the 18 users listed in the February 28, 2025, SNC Public Notice, had achieved full compliance with the EPA and NBC Rules and Regulations for which they were published prior to the date of the publication. One firm that had not returned to compliance, a cheese manufacturing facility, was published in SNC for exceeding NBC discharge limitations and failing to submit required reports on time. An Administrative Order was issued to the facility in July 2023 for similar violations. Additional information on this company can be found earlier in this chapter. Two firms that did not return to full compliance were published in SNC for not returning to compliance after experiencing violations of NBC discharge limitations and two of the firms that were published as not returning compliance for failing to submit required reports. Three firms, all SIUs were published in SNC solely for exceeding NBC discharge limitations. Eleven firms were published in SNC solely for failure to submit reports on time, which are administrative. The remaining four firms were listed for both violations of NBC discharge limitations and failing to submit reports on time. Additional information regarding the firms listed in SNC is provided in CHAPTERS I and IV. The cost to publish the public notice was billed to the firms listed as being in Significant Non-Compliance.

Publication of Firms in Perfect Compliance

In addition to publishing the annual SNC public notice, the NBC annually publishes the names of firms that achieved perfect compliance during the review period. During 2024, 18 SIUs achieved perfect compliance with the terms of their permits and the NBC Rules and Regulations. These 18 SIUs will be recognized in 2025. The 2024 Perfect Compliance advertisement can be seen in FIGURE 42. Additional information regarding the Environmental Merit Awards program can be found in CHAPTER VII.

FIGURE 40
2024 SIGNIFICANT NON-COMPLIANCE PUBLIC NOTICE
THE PROVIDENCE JOURNAL
FEBRUARY 28, 2025

The Narragansett Bay Commission

PUBLIC NOTICE

Firms in Significant Non-Compliance

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGULATION 40 C.F.R. 403.8(f) (2) (vii) and Section 1.10 of the Narragansett Bay Commission, Rules and Regulations require the NBC to publish annually the names of all industrial users in Significant Non-Compliance (SNC) with pretreatment standards and other pretreatment requirements during the preceding year. Companies deemed to be in Significant Non-Compliance are those industrial users who have violated any of the Significant Non-Compliance criteria listed, as defined by Article 2 of the NBC Rules and Regulations during the time period from October 1, 2023 through December 31, 2024. The parameter for which a company was not in compliance and/or the specific administrative deficiency are listed after the company name. The number(s) in parentheses correspond to the type of SNC criteria specified below. Some of the firms listed below may have been issued an Administrative Order in which administrative and/or civil penalties may have been assessed. Many of the companies listed have made significant progress toward correcting the violation and may now be in compliance.

Significant Non-Compliance Criteria:

(1) Chronic violations of wastewater discharge limits, defined here as those in which 66% or more of all of the measurements taken during a six-month period exceed (by any magnitude) a numerical Pretreatment Standard or Requirement for the same pollutant parameter;

(2) Technical Review Criteria (TRC) violations, defined here as those in which 33% or more of all the measurements for each pollutant parameter taken during a six-month period equal or exceed the product of a numerical Pretreatment Standard or Requirement multiplied by the applicable TRC value (TRC = 1.4 for BOD, TSS, fats, oil, and grease and 1.2 for all other pollutants except pH);

(3) Any other violation of a pretreatment effluent limit (daily maximum or long-term average) that the Commission determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of Commission personnel or the general public);

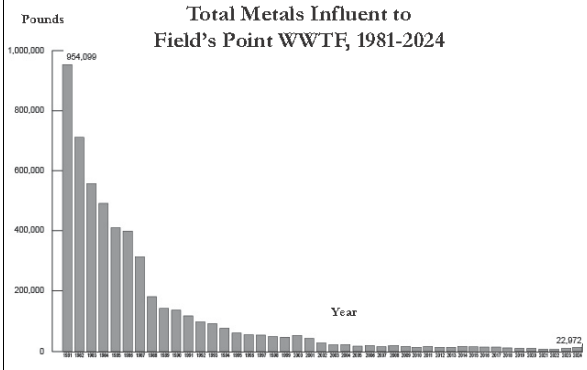
(4) Any discharges of a pollutant that has caused imminent endangerment to human health, welfare or the environment or has resulted in the Commission's exercise of its emergency authority to halt or prevent such a discharge;

(5) Failure to meet, within 90 days after the scheduled date, a compliance milestone contained in a Commission notification, permit or enforcement order, for starting construction, completing construction or attaining final compliance;

(6) Failure to provide, within 30 days after the due date, required reports such as baseline monitoring reports, 90-day compliance reports, self-monitoring compliance reports and reports on compliance with compliance schedules;

(7) Failure to accurately report noncompliance;

(8) Any other violation or group of violations which the Commission determines has adversely effected the operation or implementation of the Industrial Pretreatment Program. •



THE NARRAGANSETT BAY COMMISSION IS COMMITTED TO PROTECTING THE STATE'S TWO LARGEST WASTEWATER TREATMENT FACILITIES AND NARRAGANSETT BAY FROM TOXIC DISCHARGES. This is accomplished by the issuance of discharge permits to commercial and industrial sewer users. These discharge permits specify the level of pollutants that can be discharged in a facility's wastestream and may require a firm to conduct wastewater monitoring to verify compliance with discharge limits, to implement a Spill Control Plan and/or Toxic Organic/Solvent Management Plan, and to install pretreatment equipment. Various reporting and record keeping requirements may also be written into discharge permits. The firms listed in this public notice violated one or more of the significant non compliance criteria specified above. The Commission is required by the RI DEM and the US EPA to annually publish the names of all firms violating any of these criteria. Therefore, firms must be sure to comply with all the terms specified in their discharge permit to ensure that the name of their firm is not listed in this annual public notice. The NBC offers FREE technical assistance to firms located in the NBC service area through its non regulatory Pollution Prevention assistance program. For information on how the NBC can help your firm achieve and maintain compliance, contact the NBC Technical Analysis and Compliance Section at 461 8848/TDD 461 6549 to schedule a free Pollution Prevention audit.

Most businesses located in the NBC district are to be commended for the fine job they have done treating their process discharges to remove toxic pollutants. In 1981, local industries discharged 954,099 pounds of heavy metals such as copper, nickel and zinc and 80,440 pounds of cyanide to the Field's Point Wastewater Treatment Facility. Since 1981, the total metals and cyanide loadings to the Field's Point facility have been reduced by 97.6% and 98.4% respectively. Similar toxic loading reductions have been observed at the NBC Bucklin Point facility.

The Narragansett Bay Commission will continue to lead in wastewater treatment, environmental protection, and environmental education to ensure a cleaner Narragansett Bay for all to enjoy.

Bucklin Point Service Area

Pawtucket

Company Name	Violations Cited	Present Status
Kitchen & Countertop Center of New England	Failure to submit report on time (6)	Report has not been received
New England Paper Tube Co.	Failure to submit report on time (6)	Report has been received
Summit Manufacturing Corporation	Failure to submit reports on time (6)	Reports have been received

Lincoln

Bento Nouveau	Failure to submit report on time (6)	Report has been received
Chemart Company	Failure to submit report on time (6)	Report has been received
Denison Pharmaceuticals, LLC	BOD (1,2) TTO (1,2)	Firm is still experiencing compliance issues
	Failure to submit report on time (6)	Report has been received
Palate Pack	Failure to submit report on time (6)	Report has been received

Cumberland

Cintas Corporation	TTO (1,2)	Firm is still experiencing compliance issues

East Providence

Aspen Aerogels Rhode Island, LLC	TSS (1,2)	Firm is now in compliance
	Failure to submit report on time (6)	Report has been received

Field's Point Service Area

Providence

Company Name	Violations Cited	Present Status
AS220 (Print Shop)	Failure to submit reports on time (6)	Reports have been received
Ira Green, Inc.	EPA CN (2)	Firm is now in compliance
Luluna Health, LLC	Failure to submit reports on time (6)	Reports have not been received
Mahr, Inc.	Cr (2)	Firm is now in compliance
Providence Brewing Company, LLC	BOD (1,2)	Firm is now in compliance
	Failure to submit reports on time (6)	Reports have been received
Providence Specialty Products, LLC	BOD (1, 2)	Firm is still experiencing compliance issues
	Failure to submit report on time (6)	Report has been received
Quality Spraying Technologies	Failure to submit report on time (6)	Report has been received

Johnston

Granitec Marble and Granite LLC	Failure to submit report on time (6)	Report has been received
R.I. Beef & Veal, Inc.	Failure to submit reports on time (6)	Reports have been received

Vincent J. Mesolella, *Chairman* • Laurie A. Horridge, *Executive Director*
Narragansett Bay Commission • One Service Road • Providence, RI 02905 • 401 461 8848 • TDD 401 461 6549 • FAX 401 461 6540 • http://www.narrabay.com
Facebook: www.facebook.com/narrabay • Instagram: @narrabay

The cost of this public notice will be billed to the firms listed above that were in significant non compliance.

FIGURE 41
CONFIRMATION OF PUBLICATION OF SNC PUBLIC NOTICE

FIGURE 42
2024 PERFECT COMPLIANCE ADVERTISEMENT
PROVIDENCE JOURNAL
FEBRUARY 28, 2025

NARRAGANSETT BAY COMMISSION

Perfect Compliance

in recognition of Significant Industrial User Perfect Compliance in 2024

The Narragansett Bay Commission recognizes these Significant Industrial User companies for perfect regulatory compliance with Pretreatment Program regulations during 2024:

Armbrust International, Ltd.
HP Services, Inc.
John H. Collins & Sons Company
Metallurgical Solutions, Inc.
Providence Metallizing Company, Inc.
Rhode Island Resource Recovery Corporation
Tanury Industries PVD, Inc.
Todor Pharma, Inc.
Truex, Inc.
Hindley Manufacturing Company
Manchester Street, LLC
Materion Technical Materials, Inc.
Narragansett Jewelry Co., Inc. dba C & J Jewelry Co.
Rhode Island Heat Treating & Black Oxide Company, LLC
Stackbin Corporation
Technodic, Inc.
The Okonite Company
Univar Solutions USA, Inc.

Has your company demonstrated extraordinary environmental efforts this year?
If so, apply for an NBC Environmental Merit Award! Download an application form at www.narrabay.com.

Vincent J. Mesolella, *Chairman* • **Laurie A. Horridge,** *Executive Director*
One Service Road, Providence, RI 02905
401-461-8848 • www.narrabay.com

TABLE 39
SUMMARY OF ENFORCEMENT ACTIONS
2010-2024

Field's Point

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
AO #FP-01-15 DFI-EP, LLC	1/14/16	Consent Order 11/10/16	$23,500	$8,000	$8,000	$0.00	$0.00	$0.00	$0.00
AO #FP-01-17 Rain Car Wash	4/27/17	Letter of Agreement 5/03/18	$4,000	$4,000	$4,000	$0.00	$0.00	$0.00	$0.00
AO #FP-01-18 DE Foods Inc. dba KFC	11/9/18	PAID	$1,600	$1,600	$1,600	$0.00	$0.00	$0.00	$0.00
AO #FP-02-18 DiFruscia Industries, Inc.	12/27/18	Consent Order 9/03/19	$18,850	$13,195	$18,850	$0.00	$0.00	$0.00	$0.00
AO #FP-01-19 Extreme Auto Recondition	12/26/19	OUT OF BUSINESS	$8,500	$0.00	$0.00	$8,500	$0.00	$0.00	$0.00
AO #FP-02-19 Providence Specialty Products	12/26/19	Consent Order 11/23/20	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-01-20 Cardi Corporation	10/23/20	Consent Order 1/4/21	$10,000	$10,000	$10,000	$0.00	$0.00	$0.00	$0.00
AO #FP-01-22 Linval Chamber dba Flames Restaurant	10/31/22	Consent Order 5/22/23	$12,500	$10,000	$10,000	$0.00	$0.00	$0.00	$0.00
AO #FP-01-23 Providence Specialty Products, LLC	7/31/23	Consent Order 2/2025	$28,500	$23,850	$0.00	$23,850	$0.00	$0.00	$0.00
AO #FP-01-24 Vincent Mann of Kyltiff Investment & Consulting, LLC	7/25/24	Consent Order 10/31/24	$10,000	$5,000	$5,000	$0.00	$0.00	$0.00	$0.00

Bucklin Point

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
AO #BV-01-10 Coastal Collision & Towing, Inc.	06/15/10	Consent Order 9/17/11	$5,000	$1,000	$1,000.00	$0.00	$0.00	$0.00	$0.00
AO #BP-01-15 Ecological Fibers, Inc.	10/06/15	Consent Order 2/08/17	$22,000	$10,000	$10,000	$0.00	$0.00	$0.00	$0.00
AO #BP-01-16 Memorial Hospital of Rhode Island	09/22/16	PAID	$2,500	$2,500	$2,500	$0.00	$0.00	$0.00	$0.00
AO #BP-01-22 Mirror Image, Inc.	10/31/22	Consent Order 4/6/23	$13,500	$6,750	$6,750	$0.00	$0.00	$0.00	$0.00

VII. PROGRAMS & PROJECTS

Introduction

The NBC implements many projects, programs and studies to reduce and control the discharge of toxic and other non-conventional pollutants from industrial, commercial, and residential sewer users. These projects and programs are a collaboration of staff from many sections of the NBC, including the Pretreatment, Technical Analysis & Compliance (TAC), Laboratory and Environmental Monitoring (EM) sections.

The Pretreatment Section implements many projects and programs and educates users to reduce and control the release of toxics to the sewerage system. The Pretreatment Program controls, reduces and prevents pollutant discharges by issuing discharge permits to industrial and commercial users. These discharge permits may require installation of pretreatment systems and implementation of Spill and Slug Prevention Control Plans.

In addition to the Pretreatment Section reducing toxic discharges through its permitting and educational programs, the Pollution Prevention staff further reduces toxic loadings by providing free technical assistance and educational programs to local industries. Through this program, the NBC educates firms about pollution prevention techniques, such as product substitutions, so that hazardous materials can be eliminated from process operations and toxic byproducts are not generated or discharged.

The EM Section routinely samples permitted NBC users, providing monitoring data necessary for the Pretreatment Section to evaluate user compliance with discharge limitations. EM and TAC conduct water quality studies in the receiving waters of the NBC treatment facilities, contributing to the statewide effort of many agencies, institutions and organizations to understand water quality issues and determine the solutions needed to restore Narragansett Bay. EM also performs wastewater sampling at the two treatment facilities every day in accordance with RIPDES permit requirements. The Laboratory Section operates daily to analyze and process the thousands of samples delivered annually by EM. This chapter details the projects, studies, and programs that the Pretreatment, TAC, EM and Laboratory Sections have worked on in 2024.

Status of Projects, Programs and Studies

Dental Amalgam Program

In 2005 the NBC implemented its Best Management Practices for the Management of Waste Dental Amalgam (BMP) program. The BMP gave dental facilities two options for handling wastewater potentially contaminated with amalgam. The first option required the installation of an amalgam separator that is ISO 11143 certified with a removal efficiency of 99%. The second option did not require the installation of a separator but did require the dental facility to monitor its waste streams potentially contaminated with amalgam and comply with stringent mercury limits. In addition, the BMP outlined additional requirements regarding the storage and disposal of amalgam, use of line cleaners and staff training, that are applicable to all dental facilities. To date all dental facilities in the NBC districts opted to install amalgam separators and have been permitted. Since the implementation of the BMP program, mercury influent loadings have been greatly reduced with Field's Point experiencing a 64.1% reduction and Bucklin Point experiencing a 69.3% reduction.

On July 14, 2017 the EPA Dental Point Source Category, 40CFR441, (Dental Amalgam Rule) became final. This rule applies to all dental facilities that place or remove amalgam on a regular basis and discharge to wastewater treatment facilities. These facilities are required to install amalgam separators that are ISO 11143 (or ANSI/ADA 108-2009) certified with a removal efficiency of 99% or an equivalent device. The NBC BMP is more stringent than the Dental Amalgam Rule since all facilities that place or remove amalgam are required to install these separators regardless of the frequency of placing or removing amalgam. The NBC BMP document was revised to remove the option to sample wastewater potentially contaminated with amalgam and not install the separator.

In addition to the requirement to install an amalgam separator, the Dental Amalgam Rule requires facilities conducting dental operations to complete a One-Time Compliance Report and submit it to the local Pretreatment Program. NBC Pretreatment staff developed a form to comply with this requirement. In 2018 the NBC form was sent to all permitted dental facilities, hospitals, assisted living facilities and universities/colleges. To date 100% of the facilities completed and submitted the form. In 2019 a survey of all unpermitted dental facilities was conducted. These facilities are not permitted because they do not place or remove amalgam and/or use wet chemistry to develop x-rays.

Although these facilities may not place or remove amalgam, the Dental Amalgam Rule requires that they complete and submit a One-Time Compliance Report. The NBC One-Time Compliance Report was sent to 49 previously unpermitted facilities and to date 100% of them completed and submitted the form so that they can comply with the federal rule. Pretreatment staff also revised the Wastewater Discharge Permit Application for this classification of user to incorporate information from the One-Time Compliance Report. A copy of the NBC One-Time Compliance Report Form for Dental Facilities can be found in ATTACHMENT VOLUME I, SECTION 3. During 2024, new dental facilities were required to apply for and obtain Wastewater Discharge Permits as well as submit the One-Time Compliance Report.

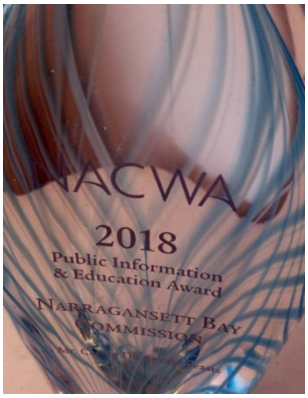
Throughout 2024 permitted dental facilities continued to comply with the terms of their permits and follow the BMP. Annual certifications of compliance with the BMP program continue to be submitted in compliance with permit requirements.

Grease Control Program

The NBC Grease Control Program is a permitting program which requires users with the potential to discharge grease laden wastewater from food preparation operations to install one of two acceptable types of grease removal equipment, the automatic electrical mechanical grease removal unit or the in-ground passive grease interceptor. The permit requires the user to implement a series of BMPs which are incorporated into the permit to ensure the proper operation of the grease removal equipment. In addition to issuing permits, Pretreatment staff regularly conducts inspections of these facilities to ensure the grease removal equipment is being maintained and operating properly, as well as complying with the terms of their permits. In 204, Pretreatment conducted 336 inspections of these facilities. Over the years, the NBC has held many workshops regarding grease removal technologies and is presently conducting studies regarding the effectiveness of the various types of grease removal units.

The NBC Grease Control Program is a well established, successful program. Pretreatment Programs from other municipalities often request assistance from the NBC in establishing their programs and resolving grease related issues.

Pretreatment and Public Affairs staff have been working to develop a Residential Grease Control Program to educate the public on the impacts of fats, oils and grease on the sewer system and proper ways to handle and dispose of grease. In 2017 a mascot, Mr. Can, was created. Mr. Can is a super hero who guards the sewer system from the grease beasts. A story entitled “Mr. Can vs. The Grease Beasts” was created. In the story the grease beasts are wreaking havoc on pipes. Mr. Can freezes them and tells the viewer to “Cool It and Can It”, his slogan. A short video can be seen on YouTube.



In 2018 the NBC continued to expand this campaign by incorporating Mr. Can vs. The Grease Beasts into the NBC Watershed Explorers Program. In addition, promotional materials, such as pins, posters and coloring books were printed. All of these materials are available in both English and Spanish. This program won Public Information & Education Award from the National Association of Clean Water Agencies. In 2024, the NBC continued this program.

NBC Environmental Merit Awards Program

In 1995, the NBC developed the Environmental Merit Awards Program to recognize companies that have demonstrated environmental efforts and commitments that go beyond mandated compliance requirements. As part of this awards program, the NBC also recognizes all SIUs that have achieved full compliance with all NBC requirements during the previous calendar year.

In 2024, the NBC recognized numerous firms for their exemplary environmental activities performed in 2023. NBC recognized twelve companies with Perfect Compliance Awards for achieving 100% compliance with all NBC regulatory requirements. The 2023 award recipients are as follows:

- Armbrust International, Ltd.
- Chemart Company
- Electrolizing, Inc.
- HP Services, Inc.
- Interplex Engineered Products, Inc.
- John H. Collins & Son Company
- LMG Rhode Island Holdings Inc. dba The Providence Journal
- Manchester Street, LLC
- Materion Technical Materials, Inc.
- Metallurgical Solutions, Inc.
- Narragansett Jewelry dba C & J Jewelry Company
- Providence Metallizing Company, Inc.
- Prysmian Cables and Systems USA, LLC
- Rhode Island Heat Treating & Black Oxide Company
- Stackbin Corporation
- Tanury Industries PVD, Inc.
- Technodic, Inc.
- Textron, Inc.
- Tiffany and Company
- Truex, Inc.
- Univar Solutions USA, Inc.

Each award recipient had their company name and environmental accomplishments published in the Providence Journal. Applications for the 2024 NBC Environmental Merit Awards will be available on-line in February 2025.

Pollution Prevention Activities

Throughout 2024 Pollution Prevention staff from the Engineering and TAC sections continued to assist the industrial community with implementing pollution prevention techniques and technologies that result in less waste generation, smoother running and less costly operations, and improved environmental regulatory compliance. Pollution prevention services are free of charge, non-regulatory and confidential. The goals and objectives of the pollution prevention efforts are to:

- Promote pollution prevention philosophies and methodologies among the industrial users of the NBC system;
- Identify and address regulatory and non-regulatory barriers and incentives to implementing source reduction and pollution prevention activities;
- Develop a readily available, easily accessible and efficient source of pollution prevention information for use by the industrial community.

Pollution Prevention staff performs technical assistance site visits of NBC industrial and commercial users, organizes and conducts workshops and seminars, and produces educational fact-sheets. Pollution Prevention staff conducted eight site visits during 2024 on a variety of pollution prevention, and environmental regulatory compliance improvement projects including:

- Metal Finishing Facilities
- Pharmaceutical Facility
- Food Manufacturing Facilities
- Industrial Laundry Facility
- Textile Facility

Technical Analysis & Compliance Grant Funds

Since the creation of the Pollution Prevention Program in 1991, NBC has been awarded many PPIS grants and several grants from other sources to initiate a variety of industrial user environmental educational and technical assistance programs. To date, the NBC has secured grant funding totaling $3,409,568 for pollution prevention and technical assistance activities.

In addition to grant funded projects, TAC is involved with many environmental programs and projects that promote the use of pollution prevention and sound environmental management practices among NBC users and the industrial community throughout the State of Rhode Island.

Renewable Energy and Energy Conservation Program

The NBC has been awarded numerous grants over the years to help develop and implement energy efficiency and management programs at NBC facilities. Municipal wastewater treatment operations utilize tremendous amounts of energy. With current rising energy costs, safety and environmental impact concerns over the storage and use of conventional fuels such as liquefied natural gas and petroleum derived fuels, it is imperative that wastewater treatment facilities have an in-depth understanding of available energy conservation techniques and alternative energy sources.

As part of these efforts the NBC conducts detailed energy audits of its various facilities and operations in order to identify energy conservation opportunities and continues to research feasibility of utilizing renewable energy on a large scale to reduce its dependency on more conventional non-renewable energy sources. TAC staff continued to track NBC energy usage and energy efficiency as well as sustainable energy production and costs. This information was reported on a monthly basis.

Renewable energy sources being used or developed include:

- Field's Point Wind Turbines
- Coventry Wind Turbines
- Kingston Solar 1 & 2
- Iron Mine Hill Road Solar
- Johnston Wind Turbine
- Bucklin Point Biogas Combined Heat and Power
- Solar Carport

The Bucklin Point anaerobic digesters are not producing enough biogas to support the combined heat and power engine. Repairs to the digesters are necessary to restore biogas production to the level necessary to fuel the engine and have begun and may take two years to complete. The digesters will not operate while the work is being done. Until the repairs are complete the engine will not produce any electricity from biogas. NBC plans to operate the engine on natural gas during this period in order to preserve the asset and save on utility bills.

The NBC is in the process of converting its fleet of vehicles from fossil fuel based, to electric powered. At the end of 2023, the NBC fleet included two gas/electric hybrids, three plug-in hybrids and one fully electric vehicles. The vehicles can be charged using the five electric vehicle charging stations located throughout the Field's Point and Bucklin Point plants. The design of a solar car port for the will include wiring necessary to install two electric vehicle charging stations in the future.

In order to ensure the NBC is current with all regulations and innovations regarding energy management, TAC staff participates in many programs including the US Department of Energy Better Plants Program and served on the NEWEA Energy Committee.

Spill Prevention Control and Countermeasures and Storm Water Pollution Prevention Plans

During 2010, the Field's Point facility was required by the EPA to develop a Spill Prevention Control and Countermeasures Plan (SPCC) in accordance with 40CFR112. The task to develop the SPCC was assigned to the Pretreatment Section. Staff reviewed the regulations to determine the best approach. This review revealed that many of the requirements for the SPCC were also the same as the requirements for the Storm Water Management Plan (SWMP) required by the NBC Multi Sector General Permit (MSGP) for Storm Water issued by the DEM. These overlapping requirements include facility site plans, topographical maps, spill control measures, secondary containment, emergency response procedures, a list of emergency response team members and inspection protocols. Based upon the commonality of the plans it was decided to create an operations manual for Field's Point which incorporates both the SPCC and SWMP. The manual also includes standard operating procedures for deliveries of chemicals, waste handling, spill response for oil products and other materials, a list of emergency response contractors, spill/release response forms and checklists to aid in performing required inspections. The SPCC/SWMP Operations Manual for the Field's Point facility was submitted to the EPA on October 26, 2010. ES&C staff evaluated the other NBC properties to determine where SPCCs and SWMPs were required. It was determined that these plans needed to be developed for the Bucklin Point facility and the Ernest Street/CSO Tunnel Pump Station site due to the volume of oil stored at these locations. The operations manuals for the locations were developed during the latter part of 2010 and early 2011. The manual for the Ernest Street/Tunnel Pump Station site was submitted to EPA on January 7, 2011 and the Bucklin Point manual was submitted on January 31, 2011.

The 2019 MSGP expired in May 2024. The revised MSGP became effective on July 1, 2024. The SWMP for each facility was revised to comply with the 2024 MSGP. A revised SWMP and Notice of Intent (NOI) for each facility were filed electronically with the DEM on November 27, 2024. The SPCC/SWMP Operations Manuals were revised to incorporate the 2024 MSGP and SWMP.

Both the SPCC and SWMP require annual inspections of the facilities and training on the plans. Pretreatment staff conducted the inspections of both the Field's Point campus, and Bucklin Point in September 2024. The annual inspections of the storm water structures at both Fields Point and Bucklin Point were conducted in June 2024. Throughout 2024, there were numerous storms that resulted in over more than 2.70" of rainfall within a 24-hour period. In accordance with the SWMPs, the storm water structures at both facilities were inspected. The storm water structures at each facility were inspected four additional times. None of the structures were adversely impacted by these storms. The annual training was conducted in December 2024 at both Bucklin Point and Field's Point. The 2024 Storm Water Annual Reports were submitted on January 21, 2025 for both facilities.

Nine Minimum Controls Compliance Program for CSOs

The RIPDES permits that became effective on December 1, 2017 required the NBC to update the Nine Minimum CSO Controls (NMC) Plan. The plan was submitted and approved by DEM in early 2018. The comprehensive NMC plan details the maintenance and monitoring programs that are in place to ensure the sewer and CSO systems are functioning properly. The standard operating procedures that are outlined in the plan help to maximize the collection system for storage and flow to the treatment plants. The plan also identifies structures that are in place to control solid and floatable materials in CSOs. The NMC Plan was submitted to DEM and approved in early 2018.

Throughout 2024, the Pretreatment, TAC, EM and Laboratory sections continued to ensure compliance with the pretreatment, pollution prevention and monitoring elements of the Nine Minimum Controls Program for CSOs detailed in the NBC RIPDES permits. Pretreatment and TAC staff continued to work with industry to ensure compliance with these requirements. Companies are required to install and implement adequate spill control measures to ensure prohibited materials are not incidentally or accidentally discharged to the sewer system or storm drains. Firms are also required to conduct routine self-monitoring to demonstrate compliance with NBC discharge limitations. Firms experiencing compliance problems are encouraged to contact TAC staff for help to come back into compliance. These programs ensure that industrial wastewater is properly treated to levels acceptable for discharge and ensure that materials cannot be spilled into the sewer system or through a CSO.

The effectiveness of the NBC Nine Minimum CSO Controls Program is routinely evaluated by sampling conducted by EM. EM staff collect numerous samples to ensure compliance with the NMC Program. In addition to the industrial and manhole sampling discussed in CHAPTER IV, EM collects samples twice per week for fecal coliform from the Woonasquatucket, Providence, West, Blackstone, Seekonk, and Moshassuck rivers. Sampling for Enterococcus bacteria is routinely conducted at some of the monitoring stations to evaluate primary contact uses. These bacteria samples are analyzed by the NBC Laboratory. The bacteria data is evaluated by regulators and provides a more direct correlation of the impact on the receiving waters by NBC. Sampling of these rivers is conducted during both wet and dry weather events. The results from these sampling events for fecal coliform are promptly reviewed to identify dry weather discharges and CSOs are immediately inspected by Interceptor Maintenance (IM) staff to ensure they are properly functioning. EM also resamples sites that show high fecal coliform bacteria concentrations during dry weather periods. Samples greater than 1000 MPN/100 ml are resampled under dry weather conditions. EM works with the IM Section to analyze the data in order to identify dry weather overflows or other sources of bacteria to the rivers where combined sewer overflows are located. Other extensive monitoring of the Providence and Seekonk Rivers has indicated the rivers are meeting the EPA aquatic life criteria standards for toxics, including dissolved metals and ammonia. This demonstrates the effectiveness of the Pretreatment and Pollution Prevention Programs and the effectiveness of the NBC Nine Minimum Controls Program. The monitoring also provides data to gauge the success of the CSO Program. In addition, this data also has

been used to remove the Providence and Seekonk Rivers from the EPA 303(d) list of impaired water bodies for dissolved metals impairment.

In 2024, EM staff collected samples at CSOs located in both the Field's Point and Bucklin Point districts to measure contaminant concentrations during wet weather overflow events. Ideally, samples are collected at various times throughout the storm event, at the first flush, at the height of the storm and near the termination of the event. Sampling of three CSOs which includes the North Diversion Structure at Bucklin Point were planned. CSO sites located downstream of industrial areas were selected for this sampling. Grab samples were collected for toxics, including total metals, TSS, BOD, VOC, Oil & Grease, TPH and cyanide. Sampling was conducted for wet weather CSO Monitoring in the Field's Point district on May 15, 2024 from CSO-035A located off Livingston Street in Providence. On November 21, 2024 sampling was completed for the North Diversion Structure, and at CSO-220A located off Esten Avenue in Pawtucket. Sampling was conducted during two points of the storm as opposed to the three, mainly due to the timing of the event. All analytical results from samples collected during 2024 were compared to the NBC local discharge limitations for the district. All samples met local limits, indicating the NBC Pretreatment and pollution prevention elements of the NBC Nine Minimum Controls Program are effective.

The RIPDES permits that became effective on December 1, 2017 required the Pretreatment Program to establish BMPs for permitted facilities to control the discharge of litter from their property. In addition, Pretreatment staff was required to verify compliance with the BMP. The NBC contested these requirements as litter is defined as trash that is left lying in open or public spaces, not a process wastewater. Therefore, litter does not fall under the purview of the Pretreatment Program as outlined in 40CFR403. Throughout 2018 the NBC and DEM negotiated various requirements outlined in the RIPDES permits including the litter requirement. It was agreed the Pretreatment Program would educate Significant Industrial Users (SIU) on the impacts of litter on the combined sewer system during annual inspections. Revised language for the RIPDES permits is outlined in Attachment A of Consent Agreement RIA-424 signed on September 5, 2018. To comply with the revised requirement, the SIU Annual Report Checklist has been revised to prompt the inspector to educate the user during the inspection.

River Restoration Grants Program

In response to the chronic pollution visible on the Woonasquatucket River in downtown Providence, Narragansett Bay Commission Chairman, Vincent Mesolella established the Woonasquatucket River Restoration Initiative in 2002. With an aggressive goal to involve NBC employees, local business owners and members of the community in reclaiming the Woonasquatucket River as a valuable community resource and guided by the expertise of the Woonasquatucket River Greenway Association, much progress has

been made to clean this river. In 2012, the NBC implemented an Earth Day Grant program. This program awards grants to local organizations, cities and towns to impact more green spaces and multiple water ways throughout the NBC districts.

In 2024, the NBC continued the grant program intended to diversify the positive impact on multiple rivers in the NBC service area rather than focus solely on the Woonasquatucket River. The grant program assisted numerous local organizations, cities and towns by providing 16 small grants to 16 organizations totaling $10,700 that allowed the organizations to purchase supplies to organize clean up events and river restoration activities in the NBC service district. The 2024 grant recipients are listed below:

Blackstone River Watershed Council/Friends of the Blackstone
Blackstone Valley Tourism Council
City of Central Falls
City of East Providence Public Works
Edgewood Waterfront Preservation Association
Friends of the Moshassuck
Lincoln Conservation Commission
Neutaconkanut Hill Conservancy, Inc.
Partnership for Providence Parks
Rhode Island Clean Water Association
Save the Bay
The Empowerment Factory
The Squantum Association
Town of Smithfield
Waterman Street Dog Park Association
Woonasquatucket River Watershed Council

Emergency Situation/Extreme Conditions Sampling

The NBC has established a program to immediately provide monitoring in the event of an extreme weather condition or an emergency that may adversely affect water quality in the receiving waters. The NBC is prepared to immediately undertake any monitoring necessary to evaluate the impacts from this type of event.

Special sampling performed in response to emergency situations or extreme weather conditions is important to evaluate the effect of these events on water quality and provides data that is critical to water quality management decisions. In 2024, there were no extreme weather or emergency conditions warranting additional sampling. The NBC remains prepared and committed to conduct future extreme weather or emergency sampling as necessary.

Regional Ocean Modeling System – ROMS

Since 2004, NBC has funded joint work with the physical oceanography lab led by Dr. Chris Kincaid of the University of Rhode Island Graduate School of Oceanography on circulation and hydrodynamic modeling for Narragansett Bay. The goal of this work is to develop a highly accurate model of circulation and transport within the Providence and Seekonk Rivers and Narragansett Bay to support sound science-based management decisions. This model provides an important tool to evaluate and predict water quality in Narragansett Bay as nutrient loadings are dramatically reduced and may ultimately help with the development of a nutrient Total Maximum Daily Load (TMDL) for Narragansett Bay.

Previous work on this project resulted in a high resolution ROMS model of Narragansett Bay (NB-ROMS), from an open ocean boundary at the mouth of Narragansett Bay through the Seekonk River. The NB-ROMS model accurately reproduced several features that characterize flow in Narragansett Bay, including the tidally averaged flows that typically circulate in a counterclockwise fashion, up the East Passage and down the West Passage, and the gyre that occurs on Edgewood Shoals. NB-ROMS was used to test dispersion from major riverine and wastewater treatment facility inputs into the Bay through a modelled dye study. These results demonstrated unanticipated flows, such as a northward transport of Taunton River water to the Providence River, and a Pawtuxet River flow that separates into a southerly surface flow, a northerly intermediate depth flow, and a northerly deep flow.

An updated model, Seekonk River-Narraganset Bay (SNB)-ROMS was completed to enhance grid resolution, incorporate an accurate representation of the Seekonk River coastline and bathymetry, and to support an NPZD (nutrient, phytoplankton, zooplankton, detritus) model, which allows for physical and ecosystem modeling. Modeled circulation results from SNB-ROMS closely approximate field data from current meters deployed in Narragansett Bay.

In 2020, the “NBC ROMS Hydrodynamic Water Quality Model of Narragansett Bay” agreement was further amended. The amendment expanded the scope of work to increase Upper Narragansett Bay grid resolution to better simulate nutrient movement and algal bloom dynamics under different wastewater treatment plant nutrient removal scenarios and authorized the purchase of a supercomputer with adequate computational power to support these grid improvements. The supercomputer was installed at the Kincaid Hydrodynamics Laboratory at URI in late 2020. In early 2021, Dr. Kincaid completed construction of a high-resolution Bay grid and conducted model runs to simulate movement of water, nutrients, and algae for 2010, 2016, and 2018 using this improved model. Dr. Kincaid is currently working on running a series of simulations for eight different locations/diffuser options for a Bucklin Point effluent diffuser pipe using the new grid. Finally, Dr. Kincaid will create statistical models describing algal bloom formation and persistence of hypoxic conditions in Narragansett Bay. The NBC will continue to support data collection efforts for this model, which include the deployment of water quality monitoring sondes and tilt current meters.

In 2024, work continued on reports to summarize recent model refinements, the build-out of an ecological model that incorporates NPZD dynamics.

Laboratory Information Management System (LIMS)

A LIMS system is a repository of laboratory data in which many types of functionality can be programmed. Functionality such as automatic report generation and email notifications helps the treatment facilities make operational decisions rapidly. All laboratory instruments are interfaced with the LIMS, which allows for a faster way of entering lab results into the software.

In 2024, several outstanding LIMS tasks were addressed. Several enhancements were made to LIMS to allow for more data to be shared among departments, more efficiently. Email alerts were set up for incoming analyses so laboratory personnel are alerted as soon as a non-routine sample is collected. Efficiency improvements were made to the way collection data is entered by Environmental Monitoring. Improvements were also made to the electronic chain of custody feature in LIMS. New analysis codes were programmed in LIMS along with changes made to workflows to allow samples to be accurately analyzed and reported for new parameters. The electronic interfaces for new analyzers were made in order to ensure uninterrupted two-directional dataflow between LIMS and the analyzers. Periodically, new updates and versions of LIMs software are developed. NBC ensures LIMS is updated with the most current version of the software.

Monitoring Data Management

The NBC continued the process of developing a centralized database for all analytical data generated by the NBC including from industrial, manhole, plant, river and bay sampling events in a electronic format. Staff have been locating historical monitoring data in paper format and is working to transfer this data into electronic format.

In 2013 progress was made with the development of this electronic database. As a part of the upgrades to the LIMS a software package, Hach WIMS, was put online. All data generated by the Perkin Elmer LIMS was electronically transferred to Hach WIMS. In addition, data generated by the plant information system (PI) is electronically transferred to Hach WIMS. During 2016 the database was made more robust by adding additional data codes and inputting historical data. In mid-2018 the LIMS was migrated from Perkin Elmer LabWorks to Thermo Fisher Sample Manager. During 2019 staff continued to upload data to the system for its internal users. In 2020, 2021, 2022, and 2024 money was budgeted for enhancements to Sample Manager. These enhancements included improving the functionality of collection forms and generating automatic email notifications for out-of-specification results. EM staff run reports each month to complete the Discharge Monitoring Report (DMR) from this system.

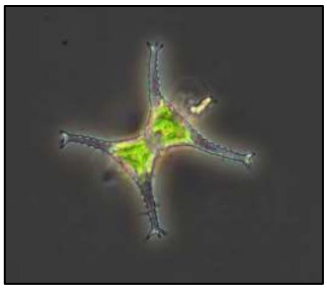
In 2011, ES&C and IT staff developed and launched a website, "Snapshot of Upper Narragansett Bay" which can be accessed through www.narrabay.com. The website is maintained on a regular basis with information regarding water quality and analytical data from plant effluent samples. Real time data from NBC fixed monitoring sites located at Bullock's Reach and Philipsdale Landing is displayed on the site. All of this information is readily available to the public. During 2024, staff continued to upload monitoring data to the webpage for public access and use.

Phytoplankton Monitoring

During 2024, the NBC continued to collect Bay samples for phytoplankton analysis approximately every two weeks, to better understand the complex dynamics of the Bay ecosystem and how it is impacted by nitrogen reductions by the NBC and other inputs. Phytoplankton samples are normally collected from the surface at the Bullock's Reach water quality station. The Bullock's Reach station was selected as the plankton monitoring location because it is the site of one of the NBC fixed-site water quality monitoring stations. In 2024 samples were not collected in January or April due to unsuitable weather or staff availability. With chlorophyll concentrations constantly monitored at the site during the spring, summer, and fall seasons, the NBC can collect routine planned samples, and also collect additional samples when fixed-site chlorophyll data indicate a phytoplankton bloom is present. Results are posted in a blog format on the NBC website www.snapshot.narrabay.com.

Two phytoplankton samples are collected on each sample day. One of the samples is collected using a phytoplankton net, which is deployed at the surface for 30 minutes. The plankton net captures the plankton floating near the surface and concentrates them in a sample bottle. The second sample is a whole water sample, also collected from the surface. Laboratory staff examines a sub-sample of the plankton net sample under the microscope to identify all of the types of phytoplankton present. From the whole water sample, a specific volume of water (1 mL) is examined under the microscope to determine the abundance of each phytoplankton taxon present in the sample. Through this complete analysis, the NBC will be able to track changes in the phytoplankton population and community structure as nutrient reductions occur in the upper Bay. Also, the NBC has aligned methods with the University of Rhode Island – Graduate School of Oceanography (URI-GSO), which collects similar phytoplankton data in the lower Bay. Through this collaboration, comparisons can be made between the phytoplankton in these two bay regions.

Benthos Monitoring



During 2024, EM continued benthic video monitoring, utilizing an underwater video camera to observe the state of the benthos in the NBC receiving waters. While this monitoring initiative has only been in place since 2014, long-term monitoring of the benthos in this way will allow the NBC to track changes in local benthic conditions as nutrient reductions and other infrastructure improvements occur in the upper bay. Transects were conducted along three permanent transect paths in the Providence River in 2024. Discussions of results and observations made during these video surveys are currently being posted to the www.snapshot.narrabay.com in an effort to share these findings with the public. In addition, the NBC has spearheaded a collaboration among members of the Nature

Conservancy, the RIDEM, EPA, and other researchers to align benthic research methods for active projects in the Bay. These efforts will maximize the utility of the data collected by each group to complement the other projects, promoting a broad understanding of the benthic conditions.

Infectious Disease Monitoring

During 2024, NBC continued to participate in the Rhode Island Department of Health (DOH) Wastewater Surveillance program to monitor the concentrations of SARS CoV2 virus or better known as COVID-19 in wastewater. Both Field's Point and Bucklin Point facilities participated in the surveillance program that ran throughout 2024. Influent samples are shipped to Biobot once per week, and samples were sent to to DOH twice per week. Both laboratories reported the data as it became available. In addition, DOH created a data hub on their website sharing wastewater surveillance data obtained for wastewater facilities throughout the state and have been working to expand surveillance to other viruses included Influenza and RSV. This monitoring program is expected to continue in 2025.

On Going Projects

Over the years the ES&C Sections initiated many projects that have become integral parts of the routine activities of each department. Work continues to be performed on these long-established NBC projects. The following is a listing of some of these projects:

Fuel Oil Discharge Control Program
Medical Waste Control Program
Septage Permitting Program
Floatables Control Program
Emerging Pollutants Study
Woonasquatucket River Education Project
Water Audit and Technical Assistance Program
Storm Water Pollution Prevention Program
Fixed-Site On-Line Water Quality Monitoring
Storm Water Mitigation Program
Osprey Camera

The NBC will continue to be a leader, locally and nationally, developing programs, projects and initiatives that will control and reduce the discharge of pollutants to our treatment facilities, and ultimately Narragansett Bay. This work will continue in 2025.

VIII. STATUS OF NBC PROGRAM GOALS

Status of 2024 Goals

This chapter outlines the progress made during 2024 toward meeting the goals established in the 2023 Pretreatment Annual Report and defines goals for 2025.

- **2024 Goal:** Publish Pretreatment Program Annual Report

  Accomplishment: The 2023 Pretreatment Program Annual Report was completed and submitted to the DEM on March 15, 2024, in compliance with the NBC RIPDES permits. In order to make the report accessible to the public, it is uploaded to the NBC website, www.narrabay.com annually. The 2023 Pretreatment Annual Report was uploaded to the internet on March 15, 2024.

- **2024 Goal:** Satisfy all EPA and DEM Pretreatment Program mandates such as sampling and inspecting each Significant Industrial User (SIU) at least once every twelve (12) months. As an additional goal, Pretreatment and Environmental Monitoring (EM) staff will attempt to inspect and sample all SIUs at least twice each twelve-month period.

  Accomplishment: The NBC satisfied the EPA and DEM mandates for conducting non-sampling inspections of each SIU at least once every twelve (12) month period. Each SIU was inspected at least once during this report period, and within twelve months of their previous inspection date. The Pretreatment Section performed well toward satisfying its goal to inspect each SIU twice, as all were inspected two or more times during 2024 with the exception of two. One of these SIUs was conducting dewatering operations as part of construction operations associated with Phase III of the NBC CSO abatement project. This SIU, CBNA Barletta Phase III CSO JV-Receiving Shaft Site, ceased dewatering operations very early in 2024. Pretreatment staff were only able to conduct the annual inspection before operations stopped. The second SIU not inspected twice in 2024, Summit Manufacturing Corporation, a metal finishing company, ceased operating in early 2024. Pretreatment staff contacted the owner and was able to enter the facility to conduct the annual inspection. The EM Section sampled all but two SIUs twice within the required 12-month period. The first SIU not sampled during 2024 was Tanury Industries PVD, Inc., a physical vapor deposition facility. This facility discharges on a batch basis and is required to request permission prior to discharging a batch. During 2024, the company collected all process wastewater and shipped it offsite for disposal. This was verified by Pretreatment staff during inspections. EM staff regularly contacted the company to inquire if a batch was to be discharged. The remaining SIU not sampled during 2024, John Rocchio Corporation, performed construction activities as part of Phase III of the NBC CSO abatement project. This company expected to encounter large volumes of ground water during excavation which was to be treated and discharged to the sewer. However, this location did not generate adequate quantities of ground water to discharge to the sewer. Construction at this location was completed during 2024. Therefore, EM was unable to collect samples from this location. Additional information regarding the NBC inspection and sampling programs is provided in Chapter III.

- **2024 Goal**: The Pretreatment staff will attempt to conduct an inspection of each non-significant industrial user, inspections of 75% of restaurants and food processing facilities to ensure compliance with grease removal regulations, and 50% of all other permitted commercial users.

  Accomplishment: In 2024, Pretreatment staff conducted 1,407 inspections of commercial and industrial users. Pretreatment staff performed thorough inspections of 98.4% of permitted non-significant industrial users, conducting 393 inspections of this class of user, an increase of 172 inspections from the inspections conducted of this classification of user as in 2023. During 2024, Pretreatment staff inspected 28.8% of the permitted restaurants and commercial buildings with cafeterias, conducting 336 inspections of facilities in these two categories. This is a decrease of 34 or 9.2%, in the number of inspections of companies in these two categories in 2023. Pretreatment staff inspected 32.5% of all other commercial users. There were 166 inspections conducted of commercial users in 2024. Additional information regarding the NBC inspection program is provided in CHAPTER III.

- **2024 Goal:** Perform prompt reviews of user permit applications and plan submittals to ensure that permits are issued in an expeditious manner.

  Accomplishment: All new users located in either district are expeditiously permitted prior to discharging into the NBC sewer system. Formal plan review meetings are conducted weekly by Pretreatment staff to ensure prompt response to user plan submittals and to expedite the permitting process. Permitting various classes of users located in both districts was ongoing in 2024, as 480 Wastewater Discharge Permits were issued in various industrial and commercial categories. During the year, permits were issued to metal finishers, chemical manufacturers, restaurants, supermarkets, automotive repair shops, printers, photo processors, dental offices, doctor offices, and other medical facilities using x-ray equipment. Permitting of new users also continued during 2024, as 152 of the 480 permits were issued to new users. The majority of the new permits were issued to non-significant industrial and commercial users.

- **2024 Goal:** Identify new and previously unknown sewer users to ensure compliance with regulations. To achieve this goal, conduct spot inspections of industrial users located in 75% of the industrial areas situated within the two sewer districts to identify new and previously unknown sewer users.

  Accomplishment: The NBC instituted a program of performing unannounced inspections of the industrial areas to identify facilities discharging without a permit. This program has been quite successful. In 2024, 48 of the 63 or 76.2% of the industrial areas were inspected at least once. This program of conducting unannounced inspections of industrial areas to locate new and previously operating unpermitted users has been quite successful at locating unpermitted users. In addition to performing industrial area inspections, Pretreatment staff routinely reviews newspapers, social media and directories to locate new and previously unknown sewer users. All of these methods were utilized during 2024.

- **2024 Goal:** Ensure the protection of the two NBC POTWs and Narragansett Bay to minimize incidents of pass through and interference.

  Accomplishment: Pretreatment staff promptly responds to all reports of unusual influent at each treatment plant, illegal dumping, spills, odors, and blockages. The reports can come from other NBC Sections, NBC computer monitoring systems, environmental agencies, fire departments and/or the general public. The purpose of these investigations is to find the source and protect the plants and infrastructure from upset. In 2024, Pretreatment staff conducted 14 investigations. To assist NBC staff in conducting these investigations, Spill Response and Tracking training is provided annually. Additional information on the investigations conducted during the reporting period can be found in CHAPTER III.

  Pretreatment and EM staff also respond to notifications from the NBC Laboratory Information Management System (LIMS) of incidents of non-compliance from NBC monitoring events. When notified by LIMS that a sample collected at an industry is out of compliance with NBC discharge limitations, EM staff conducts resampling at the facility and Pretreatment staff contacts the facility to require the facility immediately begin resampling its effluent. When alerted by LIMS that the concentrations of pollutants in the influent or effluent of the treatment plants have exceeded preset concentrations, EM and Pretreatment staff work together to find the source. The activities that staff conducts include installing manhole samplers in key locations and inspecting all facilities in the district with the potential to impact the plant with the pollutant in question.

- **2024 Goal:** Continue regulatory inspections of Septage Haulers as part of the NBC Septage Discharge Control Program.

  Accomplishment: Pretreatment staff reviews information reported on Residential Septage Manifest Forms. If any discrepancies are noted, the customers listed on the manifest are contacted by phone or mail. Additional information regarding the NBC Septage Discharge Control Program is provided in CHAPTER VII.

- **2024 Goal:** Improve Data Management.

  Accomplishment: Throughout 2024, EM and TAC staff continued to maintain the "Snapshot of Upper Narragansett Bay" website which gives NBC staff and other interested parties immediate online access to NBC data.

  Throughout 2024, IT staff continued to work on optimizing the Pretreatment software to increase functionality. During 2024, Pretreatment and IT staff worked to develop programming to allow for analytical data from manhole monitoring events to be entered in the system both manually and via the PT-LIMS interface. Pretreatment and IT staff will continue to work on additional enhancements throughout 2025.

The Pretreatment Section requested and received approval for minor modifications to the Industrial Pretreatment Program from DEM to allow the acceptance of electronic signatures on permit applications. In 2023, IT staff determined the Jotform platform would meet all the NBC needs including security. Applications have been developed for Jotform and will be accessible through www.narrabay.com. In early 2024, a SIU began working with the NBC to test the system. The system became available for public use in February 2025.

In 2024, several outstanding LIMS tasks were addressed. Several enhancements were made to LIMS to allow for more data to be shared among departments, more efficiently. Email alerts were set up for incoming analyses, so laboratory personnel are alerted as soon as a non-routine sample is collected. Efficiency improvements were made to the way collection data is entered by Environmental Monitoring. Improvements were also made to the electronic chain of custody feature in LIMS. New analysis codes were programmed in LIMS along with changes made to workflows to allow samples to be accurately analyzed and reported for new parameters. The electronic interfaces for the new analyzers were made in order to ensure uninterrupted two-directional dataflow between LIMS and the analyzers. Periodically, new updates and versions of LIMs software are developed. NBC ensures LIMS is updated with the most current version of the software.

Throughout 2024, EM staff continued to document sample collection activities and coordinate these sample collections with the Laboratory for efficient analyses and data reporting. ES&C staff performed quality control functions to ensure all data is complete and accurate. In addition, software has been put online to improve data handling.

Throughout 2024, EM and TAC staff continued to develop tools to increase efficiency and accuracy in data management and analysis. Staff have used computer programs, such as R, to review and present large, complex datasets. In addition, reporting tools in SampleManager, LIMS and Hach WIMS have been developed and improved during 2024 to reduce errors when working with long-term databases.

- **2024 Goal:** Continue to document Pretreatment, EM and Laboratory Standard Operating Procedures and NBC Policies and Protocols manuals and update QA/QC programs. The purpose of these manuals is to clearly detail all standard operating procedures in the three sections. These manuals make invaluable reference tools for Pretreatment, EM and Laboratory staff and will provide a great resource for NBC employees working outside of these sections.

  Accomplishment: The Pretreatment Section has a Standard Operating Procedures (SOP) manual which consists of all existing SOPs. As existing procedures are reviewed and revised or new procedures are developed, they are documented in this manual. During 2024, Pretreatment staff continued to review SOPs and update them accordingly.

During 2024, EM staff continued to document all SOPs and procedural changes. Staff reviewed current literature to ensure any mandated changes in sampling protocols and/or methods were promptly adopted in NBC protocols and methods. All such changes are incorporated into the EM SOPs, which are maintained electronically in an accessible shared location. During 2024, a SOP was developed for sampling PFAS compounds according to the requirements of EPA Method 1633. In addition, the Bucklin Point effluent pH sampling analysis SOP was updated.

During 2024, agency policies continued to be updated. All new policies are distributed to management and supervisory staff to be included in NBC Policy Manuals located throughout the agency. New policies are communicated to all NBC staff.

- **2024 Goal**: Provide free technical assistance.

  Accomplishment: Throughout 2024, staff continued to work with the industrial community to help reduce pollution at the source of generation. Activities include on-site pollution prevention and regulatory compliance technical assistance. During 2024, eight technical assistance site visits were conducted at three facilities.

- **2024 Goal**: Water Conservation and Reuse.

  Accomplishment: TAC staff continued to investigate opportunities for the reuse of treated wastewater from the two treatment plants. Throughout 2024, staff continued to research U.S. water reuse regulations and requirements and met with vendors to discuss on-site water reuse opportunities.

- **2024 Goal:** Environmental Merit Awards Program - Solicit nominations from companies and staff, evaluate all Significant Industrial User performance data, and hold Awards Ceremony.

  Accomplishment: In 2024, the NBC recognized 22 SIUs for achieving 100% compliance with all NBC regulatory requirements in 2023. Additional information regarding this program is provided in CHAPTER VII.

- **2024 Goal**: Workshops – Participate in workshops and conferences to educate the public on NBC programs and initiatives.

  Accomplishment: During 2024, ES&C staff made numerous presentations at workshops, meetings and/or conferences. These conferences include the 2024 New England Regional Pretreatment Coordinators Association Conference and the 2024 National Association of Clean Water Agencies Pretreatment & Pollution Prevention Conference. Further discussions on the workshops and other NBC educational efforts can be found in CHAPTER II.

- **2024 Goal:** Conduct weekly manhole monitoring in both districts to ensure user compliance with NBC discharge limitations and to determine the location of previously unknown and unpermitted users. Attempt to sample 6 to 10 manholes per week.

  Accomplishment: EM staff conducted weekly manhole monitoring throughout both NBC drainage districts. This monitoring program consists of installing automatic ISCO samplers in surveillance manholes located upstream and downstream of users on a weekly basis to verify users' compliance status. EM staff successfully sampled 257 industrial surveillance manholes during 2024, 119 in the Bucklin Point district and 138 in the Field's Point district. In addition to the 257 industrial manholes, EM collected samples from 42 sanitary manholes.

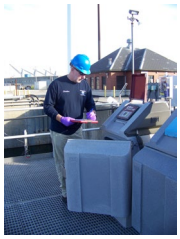
  EM also attempted to collect samples from seven additional manholes. However, samples could not be collected due to no flow in the sewer line at the time manhole sampling was conducted or due to sampling equipment malfunction. This is an average of 6 manholes per week.

- **2024 Goal:** Define the sewer system sampling program to assess loadings from key drainage areas to locate potential areas of concern and drainage area loadings.

  Accomplishment: As in past years, the NBC once again performed well towards satisfying this goal, as it defined strategic manholes throughout both sampling districts, formulated a sampling schedule and conducted routine monitoring of these manholes to evaluate loadings. Flow proportioned sampling of drainage basins as well as analysis of storm water inputs, water supply inputs and sanitary sewers were used to budget inputs and improve the NBC manhole sampling program. A layer on the GIS maps was created in 2013 and used throughout 2024 to graphically depict results of drainage district sampling results in order to make interpretation of the data easier.

  EM continued background monitoring of residential areas to better define loadings to the treatment plants. An additional goal to monitor residential sources of pollutants to determine background loading was also satisfied, as 42 sampling events of residential manholes were conducted during 2024.

- **2024 Goal:** Sample at the two NBC POTWs daily for all RIPDES permitted parameters. Research and test new sampling equipment and procedures to continually improve monitoring activities.

  Accomplishment: EM staff used clean sampling techniques for all industrial monitoring and treatment plant sampling for metals, cyanide and nutrients conducted in 2024. Throughout 2024, EM staff continued to use QA/QC sample collection practices to ensure the highest quality samples were being collected. During 2024, the NBC complied with the RIPDES permit requirements to sample the two treatment plants every day of the year and met all mandated reporting requirements. EM staff continued to sample all process operations at both plants to acquire the data needed to optimize plant performance.

- **2024 Goal:** To review, evaluate and log all analytical data obtained from EM monitoring efforts, to provide interpretation of this information to appropriate NBC staff in a timely manner and to ensure that quality assurance and quality control procedures are maintained.

  Accomplishment: During 2024, TAC staff continued to evaluate all monitoring data. Both in monthly interdepartmental data meetings and in comprehensive monthly reports, short- and long-term trends and alerts to high levels were provided. Data was posted on the NBC webpage "Snapshot of Upper Narragansett Bay" along with blogs interpreting the most recent data. During 2024, EM, Laboratory and IT staff worked on LIMS issues including reviewing existing databases to identify areas of improvement.

  EM and TAC staff analyze the data on a regular basis to establish trends and notify Operations and Interceptor Maintenance staff of any anomalies. ES&C staff conduct monthly meetings to report the data trends. Pretreatment, Laboratory and Operations staff from both facilities routinely attend these meetings. During 2024, the Snapshot webpage received minor updates, and it was maintained with regular data analysis blogs and the latest bay monitoring data so it can be quickly available on-line to NBC staff and the public.

  Throughout 2024, EM staff continued to document sample collection activities and coordinate these sample collections with the Laboratory for efficient analyses and data reporting. Quality control was performed to ensure all data is complete and accurate.

  The NBC GIS system was further refined to include additional attributes for the receiving water monitoring stations. The NBC GIS system includes all bay and river nutrients and bacteria monitoring sites.

  Throughout 2024, Pretreatment staff continued to work with IT staff on the PT-LIMS Interface to download data directly from LIMS to the Pretreatment System.

- **2024 Goal:** Monitor the receiving waters of both the Field's Point and Bucklin Point treatment facilities with the fixed site monitoring equipment.

  Accomplishment: In 2024, the NBC continued to monitor the receiving waters of both the Field's Point and Bucklin Point treatment facilities at two fixed sites within the Providence and Seekonk Rivers. Continuous online monitoring is conducted for dissolved oxygen, conductivity, temperature, salinity, pH, chlorophyll, pressure (depth) and tidal amplitude. These fixed site stations greatly aid a better understanding of the flow dynamics in these areas to further the development of the Regional Ocean Modeling System (ROMS) model. In addition, weekly samples at these and other upper bay stations were collected for fecal coliform, nutrient analyses, chlorophyll-a and turbidity. EM staff maintained the sites at Bullock's Reach, a buoy site and Phillipsdale Landing. Quality assurance practices continued to be coordinated with the Narragansett Bay Fixed Site Water Quality Monitoring Network, a State of Rhode Island monitoring collaborative that has adopted common methods for this baseline assessment.

- **2024 Goal**: Conduct tributary river sampling for fecal coliform analysis.

  Accomplishment: In 2024, EM continued to sample 21 locations along six rivers in the metropolitan area, the Woonasquatucket, Providence, West, Blackstone, Moshassuck and Seekonk rivers. Weekly sampling of these 21 sites has allowed EM to promptly notify the Interceptor Maintenance (IM) Section of dry and wet weather discharges based on the analytical results and has been instrumental in pinpointing overflows and system malfunctions. The results of tributary river monitoring for fecal coliform bacteria are provided to IM twice per week and is used to locate possible maintenance problems. In 2020, the report to IM was updated to include rain fall in the four days prior to sampling from various TELOG rain gauges available to the NBC. Fewer wet weather discharges are expected now that Phase II of the CSO Abatement Project has been completed. However, dry weather overflows can occur periodically and are usually the result of blockages in sewer regulators. NBC Environmental Scientists also analyze the data to determine trends in fecal coliform bacteria inputs to these rivers. River sampling data routinely assists IM in identifying and quickly stopping dry weather overflows. This data has provided a baseline to measure the success of the CSO Abatement Project, and data collected throughout 2024 in conjunction with data collected in future years will be used to evaluate the success of the NBC CSO projects in reducing adverse impacts to area rivers and Narragansett Bay.

- **2024 Goal**: Continue to evaluate the effect of the NBC effluent on water quality of the receiving waters.

  Accomplishment: During 2024, EM and TAC staff continued water quality evaluations of the receiving waters of the Bucklin Point and Field's Point wastewater treatment facilities. The purpose of this monitoring initiative is to determine the distribution and concentration of contaminants of concern to the health of the environment and public in both the Seekonk and Providence Rivers. EM continued its bacteria and nutrients monitoring by boat at multiple stations in the Providence and Seekonk Rivers, as well as continuing bacteria monitoring weekly at multiple stations in four freshwater rivers that are affected by combined sewer overflows. During 2024, EM continued the use of an underwater video camera to view the benthos in the Providence River. Long-term monitoring of the benthos will document major changes to this system that may relate to NBC activities.

- **2024 Goal:** Conduct Toxics Compliance Monitoring of two CSO wet weather event discharges as a part of the NBC Nine Minimum Controls Program.

  Accomplishment: To evaluate the effectiveness of the Pretreatment and Pollution Prevention programs at reducing toxic pollutant discharges through CSOs, EM attempts to monitor several CSOs annually as an element of the NBC Nine Minimum Controls Program. The aim of wet weather sampling events is to characterize the impact of CSO discharges and the efficacy of NBC's current controls when wastewater overflows the collection system during wet weather events. The sampling plan was designed so that three samples are to be collected at the outfall throughout the overflow event. The first sample is to be collected during the initial overflow stage, or first flush, and typically contains wastewater with the least degree of rainwater dilution and the highest concentrations of pollutants washed from street and land surfaces into the combined sewer system.

  A second sample is to be collected of the flow occurring midway through the storm event and a third sample collected near the conclusion of the event. Sampling of three CSOs planned for 2024, included the North Diversion Structure at Bucklin Point and a CSO in each of the Field's Point and Bucklin Point districts. On May 16, 2024, wet weather monitoring was conducted in Bucklin Point at the North Diversion Structure. On November 21, 2021, wet weather monitoring was conducted in Field's Point from CSO-035A at Livingston Street in Providence and in Bucklin Point from CSO-22A off Esten Avenue in Pawtucket. This sampling is scheduled to continue in 2025.

- **2024 Goal:** Conduct border river sampling for nutrient analysis to determine loadings to Upper Narragansett Bay that originate from outside of Rhode Island.

  Accomplishment: This monitoring initiative was begun in 2007 and continued in 2024. This monitoring consists of monthly sampling from the mouths of the Ten Mile, Runnins, Palmer, Warren Reservoir, Cole, and Taunton rivers, as well as from multiple sites on the Blackstone River. In addition, a sample is collected monthly from the mouth of the Pawtuxet River to provide more accurate data on all sources of nutrient loadings to Upper Narragansett Bay. The data shows NBC contributions are not as large a percent loading as first thought. This monitoring has revealed that nutrients loadings to the Bay dramatically increase during rain events.

- **2024 Goal:** Evaluate water quality inside the Providence River Hurricane Barrier to generate a long-term data set necessary to measure the success of the CSO abatement project.

  Accomplishment: In 2007, as part of its monitoring plan EM began an initiative to sample tributary rivers and/or the upper bay in response to extreme situations or weather conditions that have the potential to adversely affect plant operations and/or receiving water quality. During the latter portion of 2007, EM began monitoring within the hurricane barrier for Total Dissolved Oxygen (DO) on a

monthly basis. Since this is a low flush area due to the river being partially blocked by the hurricane barrier, it is expected CSO discharges will have a magnified impact on DO levels compared to higher flush areas. Conversely, it is expected that the CSO tunnel will result in fewer oxygen depleting CSOs and have a positive impact on DO levels. EM continued to sample multiple locations in the urban rivers and Bay for bacteria and dissolved oxygen before and after rain events. This data has provided a baseline to measure the success of the CSO remediation project. This monitoring continued in 2024. Data collected from these locations is used to evaluate the tunnel's success in reducing adverse impacts to area tributary rivers.

- **2024 Goal:** Continually improve NBC monitoring and analytical capabilities.

  Accomplishment: As of 2024, all autosamplers have been replaced with newer ISCO 5800 models. During 2024, EM began replacing automatic sampler tubing on a more frequent basis in lieu of cleaning tubing for reuse to improve the quality of samples collected. EM continuously evaluates sampling procedures to ensure the highest quality samples are being collected.

  In 2024, the Laboratory attained 100% accuracy on all annual proficiency and routine internal testing. All Laboratory licensing certifications were maintained, and all lab equipment was calibrated during 2024.

- **2024 Goal:** Participate in community based environmental and educational projects.

  Accomplishment: In 2024, the NBC continued the grant program intended to diversify the positive impact on multiple rivers in the NBC service area rather than focus solely on the Woonasquatucket River. The grant program assisted numerous local organizations, cities and towns by providing 16 small grants to organizations totaling $10,700 that allowed the organizations to purchase supplies to organize clean up events and river restorations activities in the NBC service district.

- **2024 Goal:** Conduct studies during extreme weather or emergency events.

  Accomplishment: In 2007, as part of its monitoring plan EM began an initiative to sample tributary rivers and/or the upper bay in response to extreme situations or weather conditions that have the potential to adversely affect plant operations and/or receiving water quality. During 2024, there were no extreme situations or weather conditions warranting sampling. However, the NBC is prepared to immediately undertake any monitoring necessary to evaluate the impacts from this type of event.

- **2024 Goal:** Provide access to all NBC monitoring data.

  Accomplishment: EM and TAC staff analyze the data on a regular basis to establish trends and notify Operations, Interceptor Maintenance and/or Pretreatment staff of any anomalies. TAC and Laboratory staff conduct monthly meetings to report the data trends. Pretreatment, Laboratory and Operations staff from both facilities routinely attend these meetings. Data summary reports were also posted to the NBC "Snapshot of Upper Narragansett Bay" webpage on a weekly or biweekly basis, presenting current data trends and water quality conditions on the bay.

- **2024 Goal**: Participate in a study to evaluate emerging pollutants, including PFAS compounds, at the NBC treatment plants and receiving waters.

  Accomplishment: During 2024, the NBC continued monitoring the influent, effluent and filter cake from both treatment plants for PFAS compounds. The samples were collected and analyzed weekly or more from January through December. Influent and effluent samples were analyzed by the NBC Laboratory, while filter cake samples were analyzed by both the NBC Laboratory and/or a contract laboratory. The data are being analyzed to determine the range of PFAS concentrations in the influent, effluent and sludge to understand the potential impacts of these compounds on the treatment plants and receiving waters. This sampling will continue in 2025.

Major Program Goals for 2025

Goal Category	Goal Outline	Goal Description
Inspections	Inspect industries to ensure compliance with regulations.	▪ Inspect each SIU twice (EPA/DEM requires one inspection) ▪ Inspect each non-significant industrial user once ▪ Inspect 50% of permitted restaurant and food processing facilities ▪ Biannual inspections of all other permitted commercial users
	Identify new and previously unknown sewer users to ensure compliance with regulations.	▪ Conduct unannounced inspections of 75% of the mill complexes/industrial areas
	Continue regulatory inspections of septage haulers.	▪ Inspect septage vehicles at the receiving station one day per month
Emergency Response Actions	Ensure protection of the two POTWs and Narragansett Bay to minimize incidents of pass through and interference.	▪ Respond to 100% of unusual influent reports ▪ Respond to 100% of reports of illegal dumping, spills and blockages ▪ Investigate all automatic notifications from LIMS of incidents of non-compliance ▪ Investigate all reports of unusual influent as indicated through the PI computer monitoring systems ▪ Conduct annual Spill Response and Tracking training
Pollution Prevention and Technical Assistance Initiatives	Provide free technical assistance.	▪ Reply to all requests from users for technical assistance ▪ Seek grant funds to support technical assistance programs
Monitoring and Analytical Initiatives	Sample industrial discharges to sewer system to ensure compliance with regulations.	▪ Conduct sampling of each SIU twice (EPA/DEM requires one sampling) ▪ Resample any SIU found out of compliance
	Conduct sampling to assess loadings from key drainage areas and determine background loadings of pollutants.	▪ Conduct routine residential manhole monitoring ▪ Continue monitoring of residential sources of pollutants to better define background loading
	Conduct surveillance monitoring in the sewer system to ensure compliance with regulations.	▪ Sample 5-8 manholes per week (including surveillance and routine monitoring) ▪ Sample up and down stream of 70% of SIU and Zero Discharge companies at least once
	Monitor Field's Point and Bucklin Point facilities as necessary to ensure and improve compliance with all RIPDES permit requirements.	▪ Sample both wastewater treatment facilities daily ▪ Collect process control samples to provide critical plant operational data to allow Operations staff to optimize plant performance ▪ Research and test new sampling, data scanning and recording equipment and procedures to continually improve monitoring activities ▪ Collect samples to test functionality and optimize BNR facilities

Goal Category	Goal Outline	Goal Description
Monitoring and Analytical Initiatives (continued)	Maintain the two NBC fixed site monitoring systems to evaluate NBC receiving water quality	▪ Maintain the two fixed site stations to continue monitoring downstream of each plant ▪ Monitor continuously for temperature, salinity, dissolved oxygen, conductivity, pH, chlorophyll, turbidity and pressure (depth) ▪ Collect bi-weekly samples at these monitoring stations for fecal coliform, nutrients, chlorophyll-a, and TSS analysis ▪ Provide data and data interpretation to the scientific and general community on a real time basis ▪ Continue participation in the Narragansett Bay Fixed Site Monitoring collaborative using approved QA/QC protocols
	Continue to monitor NBC receiving waters to evaluate water quality improvements, areas with impairments and causes	▪ Continue routine monitoring program of the Providence and Seekonk Rivers for nutrients, bacteria, dissolved oxygen and other parameters ▪ Perform additional monitoring in response to extreme situations or weather conditions that could adversely affect plant operations and receiving water quality ▪ Perform monitoring to observe benthic conditions over time
	Conduct tributary river sampling for bacteria analysis to ensure compliance with EPA Nine Minimum CSO Control Program	▪ Conduct weekly sampling at multiple sites on the West, Woonasquatucket, Moshassuck and Blackstone Rivers and one site on each of the Providence, Seekonk and Pawtuxet Rivers ▪ Provide data to IM staff to allow for timely maintenance activities of the CSOs ▪ Conduct monitoring of CSO events by collecting samples at the first flush, mid-storm and late storm flow to characterize the CSO discharge impact and efficiency of CSO controls in place ▪ Conduct toxics compliance monitoring at three locations, two CSOs and the North Diversion Structure at Bucklin Point, during wet weather event discharges
	Conduct Border river sampling for nutrient analysis to determine loadings to Upper Narragansett Bay that originate from outside of Rhode Island	▪ Conduct monthly sampling from the Ten Mile, Runnins, Palmer, Warren Reservoir, Cole, and Taunton and the Blackstone rivers where they crosses the State line
	Evaluate the success of the NBC CSO Abatement Program	▪ Conduct sampling at multiple locations in the rivers and bay for bacteria before and after rain events to evaluate the success of the CSO abatement tunnel project ▪ Prepare an evaluation of the impacts of Phase II on receiving water quality ▪ Collect and analyze pre and post construction of Phase III to evaluate the impact on the receiving water

Goal Category	Goal Outline	Goal Description
Monitoring and Analytical Initiatives (continued)	Continually improve NBC monitoring and analytical capabilities	▪ Upgrade existing plant samplers as needed to improve monitoring capabilities ▪ Attain 100% accuracy on all annual proficiency testing and internally audit testing procedures ▪ Ensure all laboratory equipment is calibrated annually ▪ Maintain all Laboratory licensing certifications
Permitting	Expeditious review and issuance of permits	▪ Respond to all incomplete discharge permit applications and renewals within fourteen business days ▪ Review submitted Pretreatment facility plans on a weekly basis ▪ Develop and implement a webpage where permit applications can be submitted electronically
Data Logging Analysis and Reporting	Continue to expand and improve electronic data systems	▪ Improve and expand existing databases ▪ Document all treatment facility process and laboratory changes in meta-data files ▪ Continue to create LIMS reports to migrate data automatically into spreadsheets ▪ Upload electronic versions of DMRs into NBC data systems
	Provide internal and external access to appropriate NBC monitoring data	▪ Upload annual data report to the internet by April 30th ▪ Promptly prepare updates detailing activities and historical trends to Snapshot ▪ Upload river and bay data weekly to Snapshot, the NBC water quality website, for immediate staff and stakeholder access ▪ Provide NBC staff access to all data via LIMS ▪ Provide NBC data in response to specific requests
	Review, evaluate, report and present NBC data to internal and external stakeholders	▪ Prompt data logging and evaluation ▪ Analyze data and report projected short and long term trends via monthly reports and meetings ▪ Timely response on data excursions and alerts to Laboratory, Operations and Pretreatment staff, allowing opportunity for prompt corrective action ▪ Provide trend analysis to NBC and stakeholders ▪ Publish technical papers, abstracts and present posters ▪ Prepare draft press releases on findings
	Evaluate the feasibility of electronic submittals of required information from industrial and commercial users	▪ Pursue becoming CROMERR compliant

Goal Category	Goal Outline	Goal Description
Special Studies and Projects	Improve functionality of NBC computer systems	▪ Continue to locate and update users and surveillance manholes on the computerized maps ▪ Continue to locate and update all monitoring locations on the NBC GIS system ▪ Begin to use GIS/LIMS tools to incorporate sample locations into LIMS ▪ Improve the information on the NBC internet sites ▪ Continue to improve safety training tracking software ▪ Continue to improve the LIMS software
	Water Conservation and Reuse Projects	▪ Continue to investigate WWTF reuse of wastewater and biosolids ▪ Conduct testing of treatment technologies ▪ Seek grant funds to support water conservation and reuse programs
	Participate in community based environmental and educational projects	▪ Continue Earth Day Grant Program ▪ Participate in the NBC Watershed Explorer Program ▪ Participate in statewide environmental stakeholder groups, such as Watershed Counts, RI Monitoring Collaborative, etc.
	Storm Water Management Plans	▪ Continue to update and maintain the Storm Water Management Plans (SWMP) for both treatment plants ▪ Conduct site inspections of both plants in accordance with the SWMPs ▪ Conduct sampling in accordance with the SWMPs ▪ Provide annual training on the SWMP to plant employees ▪ Assess internal and external construction projects to ensure compliance with NBC Storm Water Management Plan requirements
	PFAS Evaluation	▪ Collect and analyze samples from SIUs to determine potential sources of PFAS ▪ Collect and analyze samples from plant influents and effluents to evaluate loadings and treatment removal efficiencies ▪ Analyze samples of biosolids to determine concentrations of PFAS ▪ Evaluate new biosolids treatment processes for PFAS destruction ▪ Evaluate data to determine the impact on the plants and receiving waters ▪ Collaborate with researchers in passive sampler studies ▪ Get analytical methods and instrumentation online for PFAS testing per EPA Method 1633

Goal Category	Goal Outline	Goal Description
Internal Procedures	Document all Standard Operating Procedures and Protocols	▪ Continue to detail all Pretreatment, EM, TAC and Laboratory standard operating procedures and procedural changes for the sections ▪ Document all NBC policies in the NBC Policy Manual ▪ Periodically review and update all Section NBC Policy Manuals for completeness and accuracy
Education, Training and Public Awareness	Publish Annual Pretreatment Report	▪ Prepare and submit the Annual Pretreatment Report to DEM by March 15th
	Environmental Merit Awards Program	▪ Solicit nominations from companies and staff ▪ Evaluate all nominations and issue Pollution Prevention Awards if appropriate ▪ Evaluate all SIU performance data for perfect compliance
	Workshops	▪ Participate in at least two public workshops ▪ Present an update on the NBC environmental initiatives, water quality improvements, and the health of upper Narragansett Bay at a workshop