PRETREATMENT PROGRAM

ANNUAL REPORT

JANUARY 1, 2006 – DECEMBER 31, 2006

FIELD'S POINT AND BUCKLIN POINT DISTRICTS

MARCH 15, 2007

The Narragansett Bay Commission
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Executive Director

March 15, 2007

Dear Friends:

I am pleased to present the 2006 Narragansett Bay Commission (NBC) Pretreatment Program Annual Report for the period from January 1, 2006 through December 31, 2006. 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 educational and regulatory source reduction and control program of the NBC Pretreatment and Environmental, Safety & Technical Assistance (formerly known as Pollution Prevention) Sections, coupled with the monitoring, analytical and enforcement work done by the Environmental Monitoring & Data Analysis, Laboratory, and Legal Sections, have been instrumental at ensuring that toxics are not discharged into the NBC sewer system. This NBC team is committed to protecting Rhode Island's greatest resource, Narragansett Bay.

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 over 921,510 pounds, 96.6%, while the cyanide loadings were reduced by 77,778 pounds, a 96.7% reduction from 1981 levels.

The NBC accepts its responsibility to protect the receiving waters of Narragansett Bay very seriously. During 2006, the NBC issued 2,382 Notice of Violation letters and collected $51,000 in Administrative Penalties from violators. Funds collected are deposited into the NBC Environmental Enforcement Fund and used to further protect the environment.

The NBC will continue to be a leader in the field of wastewater treatment and environmental protection. The hard work done by the Pretreatment, Environmental, Safety & Technical Assistance, Enforcement, Environmental Monitoring & Data Analysis, and Laboratory staff members at enforcing local and federal environmental regulations, educating local industries about compliance methods and performing monitoring of our industrial users, the sewer system, and the State's waterways will ensure a cleaner Narragansett Bay for all to enjoy. I trust you will find this report to be thoroughly detailed and informative.

Sincerely,

Raymond J. Marshall, P.E.
Executive Director

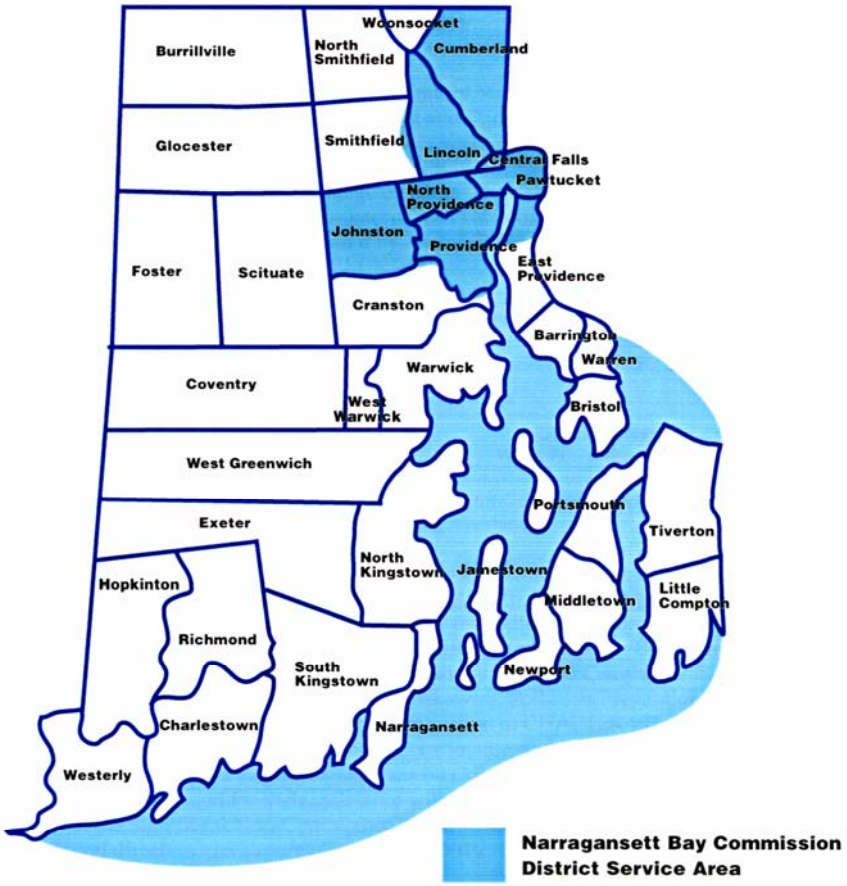
Narragansett Bay Commission
Mission Statement:

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

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Laurie Horridge Bissonette, Esq., General Counsel, Jennifer Harrington, Esq., Legal Counsel, and Gloria Borino, Executive Paralegal, are to be credited for their effective Enforcement Program and their preparation of the Enforcement section, CHAPTER V, of this report. The Environmental, Safety & Technical Assistance (ESTA) sections of this report were written by James McCaughey, P.E., ESTA Manager, with the assistance Barry Wenskowicz, Pollution Prevention Engineer, and David Aucoin, Environmental Compliance Technical Assistant. The Water Audit & Technical Assistance Program and Sewer Connection Program sections of CHAPTER VII of this report were written by John Zuba, Permit and Planning Manager, with the assistance of Stephen Lallo, Permits Coordinator. Jamie Samons, the NBC Public and Governmental Affairs Officer, is to be acknowledged for her assistance with various sections of this report, including development of the Significant Non-Compliance Public Notice. This assignment was completed under the general direction and supervision of Thomas P. Uva, Director of Planning, Policy and Regulation.

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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 an $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 65 million gallons of untreated sewage flowed into Rhode Island's waterways everyday, resulting in temporary and permanent closures of shellfishing beds in Upper Narragansett Bay, violations of federal laws, and most importantly, threatened public health and the region's environmental and economic well-being.

Aerial View - Field's Point Wastewater Treatment Facility

The NBC acquired the Field's Point facility from the City of Providence in 1982 and has transformed the once failing, antiquated facility 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 has an average dry weather flow to the facility of 44.5 MGD.

In 1992, the R.I. General Assembly expanded the NBC's 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, with an average dry weather flow to the facility of 22 MGD. During 1999, supervisory management of this plant was privatized to Professional Services Group (PSG), which became Veolia Water North America. In July of 2005 the management of the Bucklin Point facility was transferred to Aquarian Operating Services. During 2006 the Bucklin Point plant completed a series of upgrades that significantly reduced wet weather by-pass events by allowing the plant to process up to 116 MGD during wet weather events. The upgrades also incorporate nitrogen removal operations and disinfection by the use of ultraviolet light. As a result of the facility upgrades at Bucklin Point, the 2006 nitrogen loading to Narragansett Bay was reduced by 23.8% from 2005 loading levels.

Bucklin Point Wastewater Treatment Facility

The NBC now 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 7,700 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.

In the fall of 2001, the NBC consolidated its operations into a centralized location, One Service Road, across the street from the Field's Point Wastewater Treatment Facility. The Corporate Office Building brought together NBC administrative, maintenance, construction, engineering, laboratory, pretreatment, and environmental monitoring and data analysis staff to one central location.

Previously NBC staff were divided among four separate locations. With the move into the new buildings at the Field's Point campus, 87% of NBC staff are situated at one central location. A portion of the NBC Operations personnel, the remaining 13% of NBC staff, remain at the Bucklin Point Wastewater Treatment Facility in East Providence.

Pretreatment Program Annual Report Overview

CHAPTER I of this report provides a brief 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 2006, including a list of new significant industrial users of the sewage system and a section regarding firms that experienced major changes in water usage. A summary of the work done over the past year by the Pretreatment, Environmental Monitoring and Enforcement Sections of the NBC is provided at the end of this chapter in TABLES 3 and 4, the Pretreatment Performance Summary Sheets for both districts.

CHAPTER II describes the administration of the NBC Pretreatment Program including the status of Pretreatment, Environmental Monitoring, Environmental, Safety, & Technical Assistance, and Laboratory personnel, a summary of the budgets for these sections, staff training, the Pretreatment computerized 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 2006, Pretreatment staff issued 401 permits to users located in the Field's and Bucklin Point Districts, conducted 2,106 facility inspections, held 31 regulatory compliance meetings with users and responded to 58 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 2006, the NBC conducted 287 sampling inspections, performed 391 manhole sampling events, and reviewed 3,614 analytical reports of users located in the Field's Point and Bucklin Point Drainage 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 the total metals loading to the Field’s Point Wastewater Treatment Facility increased during 2006 by 6.1%. The total metals loading to the Bucklin Point Facility increased by 12.7%. The cyanide loading to the Field’s Point Wastewater Treatment Facility decreased by 1,130 pounds, or 29.8% in

2006, and the cyanide loading to Bucklin Point decreased by 216.6 pounds or 28.7%.

CHAPTER VI details the types of enforcement actions used by the Commission and reviews the enforcement actions initiated by the NBC over the past year. During 2006, the NBC issued 2,382 Notice of Violation letters. 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 special projects and programs underway and those already completed by the Planning, Policy & Regulation Division of the Narragansett Bay Commission.

CHAPTER VIII reviews the status of the goals established by the Pretreatment Program, Environmental Monitoring, Environmental, Safety & Technical Assistance, Laboratory, and Planning Sections for 2006 and describes the ambitious goals established by these sections for 2007.

Unique Program Elements, Activities, Awards And Accomplishments

The Narragansett Bay Commission utilizes many innovative and unique activities, projects and programmatic elements 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.

User Education, Training and Outreach

- Quarterly newsletter issued to all permitted users
- Workshops regarding Pollution Prevention, Pretreatment, and Monitoring topics
- College-level course, Introduction to Industrial Wastewater Treatment and Pollution Prevention, created and offered by NBC staff
- Periodic informational mailings to permitted users
- Press releases and public notices
- Development and distribution of fact sheets, Best Management Practice (BMP) documents, and case studies summary sheets
- NBC informational website (**http://www.narrabay.com**)
- Citizens Advisory Committee

Special Projects and Studies

- Charter Member of EPA's Strategic Goals Program for the Metal Finishing Industry

- Environmental Merit Award Programs, include:
  - ~ Pollution Prevention Award and NBC-Certification Seal Program
  - ~ Perfect Compliance Award and NBC-Certification Seal Program
  - ~ Stormwater Management Award
- Grease removal study and program, which has greatly reduced sewage backups and overflows due to grease accumulations in sewer lines
- Silver and Mercury loading reduction and evaluation program
- River Monitoring Program
- Tributary river sampling for fecal coliform analysis
- Residential Septage Hauler Discharge Control Permitting Program
- Woonasquatucket River Wet Weather Monitoring Program
- Analysis of fecal coliform bacteria sources
- Periodic review of all regulatory activities to reassess methods, procedures and strategies
- EMPACT Project to monitor Narragansett Bay and provide on-line monitoring data to the public
- Computerization of Sewage System Mapping Project
- Woonasquatucket River Education Project
- River Restoration Initiative
- Energy Conservation Program
- Computerization of Sewer System Maps Project

Permitting

- Prompt and standardized user plan reviews through weekly internal plan review meetings of engineers and technicians
- Permitting of all users with process wastewater discharges to the sewer system, as well as those having the potential to discharge
- Unique and equitable rate structure with varying rates dependent upon hydraulic/pollutant loadings, which covers the cost to operate the pretreatment program
- Zero discharge facilities are permitted and inspected at least twice annually, as they have the potential to discharge to the sewer system via sanitary connections
- Aggressive program of permitting all users that greatly exceeds EPA permitting requirements
- Sewer connection permitting referral program with cities and towns

NBC Monitoring Program

- Aggressive program of sampling users that greatly exceeds EPA requirements. NBC internal goal to sample every SIU **twice** per twelve month period, exceeding EPA requirements by a factor of two
- Clean Sampling programs utilized by EMDA Section
- Extensive use and documentation of all standard operating procedures to ensure quality assurance and quality control that greatly exceeds EPA requirements

- Extensive river, septage, collection system, POTW and industrial user 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

NBC Inspection Program

- NBC internal goal to inspect every SIU at least **twice** per twelve month period, exceeding EPA requirements by a factor of two
- Zero discharge firms are inspected at least twice per year to ensure compliance with permit requirements
- Extensive inspections of non-significant users performed annually
- Intensive restaurant inspection program to verify grease trap maintenance
- Development and use of Significant Industrial User (SIU) annual inspection form ensures thorough and standardized inspections of each SIU
- All NBC inspections stress user education regarding EPA Significant Non-Compliance criteria, NBC mission statement, and available compliance programs, in addition to addressing regulatory compliance issues. This has contributed to the decreased rates of SIU Significant Non-Compliance
- Response to 100% of reports regarding chemical spills, unusual influents, odors, etc.

User Self-Monitoring

- Four consecutive weeks of resampling indicating full compliance required for any effluent violation recorded. Benefits include: users are brought back into compliance quickly, Significant Non-Compliance (SNC) is reduced due to increased monitoring, reduced loadings to sewer, escalated enforcement due to additional evidence, etc.
- Significant Industrial User permit required monitoring greatly exceeds that 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 connections to all pretreatment, pollution prevention, environmental monitoring and enforcement personnel
- 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

Pollution Prevention

- FREE technical compliance assistance program
- On site consultations and pilot testing

- Routine referrals by regulatory staff in all NOVs and other user correspondence and communications
- Solicitations by Pollution Prevention staff directly to industries
- Extensive educational efforts noted previously
- Formal agreement with the University of Rhode Island (URI) Chemical Engineering Department and its Rhode Island Pollution Prevention Center to augment staff resources through consulting services and to develop new technologies or find new applications for existing technologies
- FREE water audits conducted of businesses, large residential buildings and manufacturing industries

Staff Training

- NBC provides extensive training to its employees
- NBC Pretreatment, Environmental Monitoring and Pollution Prevention staff receive 40 hour HAZWOPER training
- NBC has a tuition reimbursement program to assist employees to further their education and enhance their performance
- Intrasectional Cross Training Drills
- Employee Exchange Programs between NBC sections

Enforcement

- Some type of enforcement action issued against 100% of violators
- Cost of SNC Public Notice billed to firms in violation
- Use of innovative settlement agreements, which may include:
  - ~ Community based environmental projects
  - ~ Development of public service announcements
  - ~ Purchase of Pollution Prevention, Reduction 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. NBC received EPA Environmental Merit Award in 1995 and AMSA Public Service Award in 1995 and 2000 for this fund
- In-house legal staff available for quick enforcement response
- Routinely work with state and federal criminal investigators regarding criminal pollution violations

2006 Accomplishments

~ ***Permitting:***

- 401 Permits issued in 2006
- 191 New permits issued to previously unpermitted firms
- 210 Revised permits issued

~ ***Inspections and Sampling:***

- 2,106 Non-sampling inspections conducted
- 516 Non-sampling inspections of Significant Industrial Users
- 403 Non-sampling inspections of categorical users
- 113 Non-sampling inspections of significant non-categorical users
- 1,589 Non-sampling inspections of non-significant users
- 31 Regulatory Compliance meetings held with users
- Pretreatment staff reviewed 3,614 User Monitoring Reports
- 58 Emergency/Special Investigations Conducted
- 287 User Samples Collected by NBC in 2006
- 266 NBC Sampling Inspections of Industry
- 122 Different Facilities Sampled by NBC
- 244 Sampling Inspections of Significant Users Conducted
- 188 Sampling Inspections of Categorical Users Conducted
- 56 Sampling Inspections of Significant Non-Categorical Users Conducted
- 43 Sampling Inspections of Non-Significant Users Conducted
- 391 Manhole Sampling Events Conducted
- 341 Industrial Surveillance Manhole Samples Collected
- 39 Sanitary Manhole Sampling Events Conducted
- 11 Sampling Events Conducted during Sewer Line Cleaning Operations

~ ***Enforcement:***

- 2,382 Notice of Violation (NOV) Letters Issued
- $51,000 in Administrative Penalties Collected
- 15 Firms Listed in the March 1, 2007 Public Notice in the Providence Journal as being in Significant Non-Compliance (SNC)
- 14 out of 15 Firms Listed in SNC achieved compliance with cited violations prior to publication of Public Notice

~ ***User Compliance:***

- 4.9% Rate of Significant Non-Compliance (SNC) in Field's Point District for 2006, a reduction from 39% in 1992
- Rate of SIU Significant Non-Compliance reduced in Bucklin Point from 44.8% in 1994 to 10.2% for 2006
- 94.8% Overall Rate of Compliance for All Significant Users
- 95.6% Overall Rate of Compliance for All Categorical Users

- 95.4% Overall Rate of Compliance for All Non-Significant Users
- 95.0% Overall Rate of Compliance for All Users
- 52.9% of EPA categorically regulated users had perfect effluent compliance records with all effluent parameters excluding pH
- 57.3% of Significant Users AND 86.1% 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 the 2006 report period, ten users were reclassified from significant to non-significant. Seven of the ten users that were reclassified were categorical users. The ten users were reclassified to non-significant because they either ceased categorical operations or went out of business. Six of the ten users were located in the Field's Point district and eliminated 182,192 gallons per day of industrial flow to the Field's Point facility. The remaining four users that were reclassified were located in the Bucklin Point district and eliminated 204,361 gallons per day of industrial flow to the Bucklin Point facility.

There were four users that were newly classified as Significant Industrial Users (SIU) in 2006. Two of the new SIUs are located in the Field's Point district and contribute 79,603 gallons per day of industrial flow to the plant. The remaining two new SIUs are located in the Bucklin Point district and contribute 3,633 gallons per day of industrial flow to Bucklin Point. Two of the four new SIUs are classified as categorical.

A review of the baseline monitoring reports submitted by the four newly classified significant users of the NBC sewer system indicates that the combined discharge from these facilities should have no adverse effect on the quantity or quality of effluent discharged from the Field's Point or Bucklin Point Wastewater Treatment Facilities. The SIUs which were reclassified during 2006 and the reason for each reclassification are detailed in TABLE 1.

TABLE 1
Firms Reclassified to Non-Significant

Field's Point Firms	*Reason for Reclassification*
Evans Plating Corporation - Johnston Facility	Firm is out of business.
Exsil, Incorporated	Firm is out of business.
National Plating, Inc.	Firm is out of business.
New England Gas Company - Holding Tanks	Firm sold to new owner.
RIBCO Manufacturing, Inc.	Firm sold to new owner.
Spencer Plating Company, Inc.	Firm ceased discharging from categorical operations.

TABLE 1
(continued)

2006 Significant Industrial Users Classification Changes
Firms Reclassified to Non-Significant

Bucklin Point Firms	*Reason for Reclassification*
CHN Anodizing	Firm moved out of district.
CHN Anodizing - American Metals	Firm moved out of district.
Slater Dye Works - Pawtucket Facility	Firm is out of business.
Slater Screen Print Corporation	Firm is out of business

Newly Classified Significant Users

Field's Point Firms	*Reason for Reclassification*
C&C Rhode Island, LLC	This new firm performs categorically regulated metal finishing operations.
Narragansett Electric Company - Gas Holders	This new firm discharges greater than 5,000 gallons per day.

Bucklin Point Firms	*Reason for Reclassification*
Aspen Aerogels	This new firm has the potential to adversely impact the treatment facility.
Collegium Pharmaceutical	This firm began conducting categorically regulated pharmaceutical operations.

During 2006, twenty-two Field's Point SIUs experienced significant changes in water usage. Twelve of the twenty-two firms increased their water usage by a combined total of 160,456 gallons per day. Ten of the twenty-two firms decreased their water usage by a combined total of 786,353 gallons per day. The net change to the Field's Point facility is a decrease of 625,897 gallons per day of industrial flow. This decrease in industrial flow did not have an adverse effect on the quality of wastewater discharged from the Field's Point treatment facility.

Fifteen Bucklin Point SIUs experienced significant changes in water usage during 2006. Six of the fifteen SIUs increased their water usage by a combined total of 27,163 gallons per day. Nine of the fifteen SIUs decreased their water usage by a combined total of 73,597 gallons per day. The net change in flow to Bucklin Point is a decrease of 46,434 gallons per day of industrial flow. This decrease 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 2006 are detailed in TABLE 2.

TABLE 2

2006 Significant Industrial User Changes in Water Usage

Firms with Increased Water Usage

Increased Flow
Field's Point

Company	*Change in Flow (gpd)*	*% Change*
Armbrust International, Ltd.	4,527	31.3%
Cannon & Brown, Inc.	1,034	21.1%
Danecraft, Inc.	1,240	8.4%
Dominion Energy Manchester St., Inc.	6,498	77.2%
G. Tanury Plating Company	23,088	55.7%
Induplate, Inc.	13,181	53.1%
Providence Chain Company	1,592	30.8%
Providence Journal Co. - Prod. Facility	1,769	10.9%
Regal Plating Company	8,499	36.0%
Shank/Balfour Beatty - Foundry Site	88,025	84.0%
Tri-Jay Company	1,760	10.7%
Umicore USA, Inc.	9,243	25.7%

Bucklin Point

Company	*Change in Flow (gpd)*	*% Change*
AAFCO, Inc.	1,944	13.7%
Fujifilm Electronic Materials USA, Inc.	5,551	38.8%
General Cable Industries, LLC	2,022	8.8%
Honeywell Sensing & Controls	3,566	44.5%
New England Linen Supply, Inc.	12,072	24.7%
Teknicote, Inc.	2,008	40.2%

Firms with Decreased Water Usage

Decreased Flow
Field's Point

Company	*Change in Flow (gpd)*	*% Change*
C & J Jewelry Company, Inc.	-1,417	-30.7%
Callico Metals d/b/a Oster Pewter	-1,156	-43.2%
DiFruscia Industries, Inc.	-2,341	-35.2%
Evans Plating Corp. - North Providence	-1,419	-38.0%
Mahr Federal, Inc.	-4,098	-61.7%

TABLE 2
(continued)

2006 Significant Industrial User Changes in Water Usage
Firms with Decreased Water Usage

Decreased Flow
Field's Point

Company	*Change in Flow (gpd)*	*% Change*
R.E. Sturdy Company	-1,132	-25.1%%
Sardelli International, LLC	-3,904	-23.9%
Shank/Balfour Beatty - Ernest Street	-764,772	-76.8%
Technodic, Inc.	-1,798	-28.4%
Victory Finishing Technologies	-4,280	-8.7%

Bucklin Point

Company	*Change in Flow (gpd)*	*% Change*
A.T. Cross Company	-13,564	-28.1%
Chemart Company	-1,988	-10.7%
KIK Custom Products, Inc.	-10,675	-16.0%
Microfibres, Inc.	-5,791	-8.5%
Murdock Webbing Company, Inc.	-1,336	-7.4%
Technical Materials, Inc.	-24,425	-23.1%
Tru-Kay Manufacturing	-2,185	-24.7%
Vennerbeck Stern-Leach	-5,957	-33.0%
Vitrus, a Division of Evergy, Inc.	-7,676	-28.3%

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 sewage 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. As a result, the NBC Pretreatment Program has been recognized twice by the U.S. EPA as being the *"Best Pretreatment Program in the Nation"*, receiving these awards in 1990 and 1998. The NBC is one of only a few Pretreatment Programs in the nation to receive this prestigious designation twice.

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).

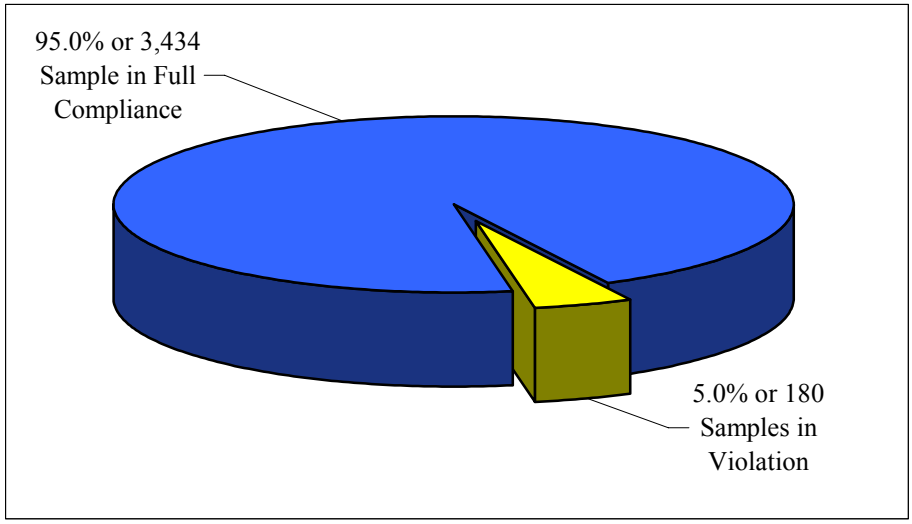
~ Evaluation of Significant Non-Compliance

Through extensive user education efforts, quick enforcement response to user violations and regular monthly reminder telephone calls to users, the NBC Pretreatment Section has over the years reduced its SIU rate of significant non-compliance substantially in both sewage districts. The combined rate of SNC for significant industrial users located in the two NBC sewage districts for 2006 was 7.3%, a decrease from 8.6% in 2005.

The SIU rate of SNC was dramatically reduced in the Field's Point District from a high of 39.0% in 1992 to 4.9% for 2006, while the SIU rate of SNC for Bucklin Point was reduced from a high of 44.8% in 1994 to 10.2% in 2006. These impressive reductions in the rate of SIU Significant Non-Compliance are directly attributed to increased user education efforts made by the NBC 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.

As a result of these efforts, the NBC has been able to maintain overall SIU rates of SNC to 10% or below. The rate of significant non-compliance for SIUs decreased in the Field's Point District in 2006 to 4.9% from 8.7% in 2005. The SIU SNC rate for Bucklin Point slightly increased to 10.2% in 2006 from 10.0% in 2005. As can be seen from FIGURE 1, 95.0% of the 3,614 analytical reports reviewed by the Pretreatment staff during 2006 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



3,614 Total Analyses Reviewed

In addition, as shown in CHAPTER IV of this report, the 2006 rate of compliance of categorical users in the two districts was 95.6%, while the compliance rate for significant users was 94.8%. 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.

Fifteen firms located in the Field's Point and Bucklin Point Districts were listed in a Public Notice in the Providence Journal on March 1, 2007 as being in SNC for the period from October 1, 2005 through December 31, 2006. Of the fifteen firms published for being in SNC, six users are located in Field's Point and nine users are located in Bucklin Point.

The names of seven categorical users were published for SNC, three from the Field's Point District and four from Bucklin Point. One significant non-categorical user, in Bucklin Point, was published. Seven non-significant industrial users were listed in the Public Notice, three from Field's Point and four from Bucklin Point. Four of the sixteen firms were listed as being in SNC solely for administrative violations such as submitting a report late. Ten firms listed in the notice were cited as being in SNC solely due to violations of effluent limitations. One firm was cited for both administrative and effluent violations. At the time of publication of this report, fourteen out of the fifteen 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's approved Enforcement Response Plan (ERP). The Pretreatment staff works very closely with the NBC 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 2006, the NBC issued 2,382 Notice of Violation letters and collected $51,000 in Administrative penalties. This is clear evidence of the effectiveness of the NBC Enforcement Program. 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, Environmental Monitoring, Environmental, Safety & Technical Assistance, and Laboratory Sections, the teams 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 Program 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.

During 2004, the NBC was required to submit a final metals compliance report as required by a Consent Agreement with the DEM (RIA-330). This report included a re-evaluation of local limits for both Field's Point and Bucklin Point using the July 2004 EPA Local Limits Development Guidance. Plant data, background loadings, and site-specific metal translators were developed for both facilities to determine local limits that protect plant operations and infrastructure, human health, and the NBC receiving waters, while allowing for the safe disposal of solids extracted for the collection system. The findings of this

report indicate that the current local limits are both appropriate and enforceable. In addition, this report details analytical data indicating that the NBC receiving waters are meeting EPA Water Quality Criteria for toxic pollutants, clearly proving that the local limits are adequate for protecting the receiving waters of Narragansett Bay. A review of recommendations from this report is provided in CHAPTER VII.

~ Sufficiency of Statutory Authority and Rules and Regulations

The Narragansett Bay Commission 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 2006, the NBC petitioned the DEM to revise the Rules and Regulations. The NBC requested revisions to the Significant Non-Compliance definitions as required by the EPA Pretreatment Streamlining rules as well as voluntary changes outlined by the Streamlining rules. These revisions can be found in Article 2 of the Rules and Regulations. Other revisions concerning the Pretreatment Program were made to clarify existing regulations. In addition, the NBC made minor revisions to the Rules and Regulations regarding sewer connections. The DEM reviewed the submittal and deemed the revisions to be a non-substantial Pretreatment Program modification and approved them. A public hearing on the revisions was held on October 30, 2006. The revised Rules and Regulations became effective on December 20, 2006. The NBC Rules and Regulations satisfy all EPA and DEM requirements and are fully enforceable. The NBC Rules and Regulations are available on-line at www.narrabay.com.

~ Evaluation of Recent and Proposed Program Modifications

The NBC Enforcement Response Plan (ERP) was approved by the DEM and adopted in June 1994. Since that time, there have been many philosophical changes regarding environmental enforcement stemming from the "kinder and gentler" approach advocated by the EPA and implemented by the State of Rhode Island and the NBC.

Since adoption of the ERP in 1994, the NBC has become very *proactive* with regard to user compliance. Many educational user programs have been developed and implemented to educate users and help users achieve and maintain compliance. The Environmental, Safety & Technical Assistance (ESTA) Section is charged with providing pollution prevention assistance to industrial and commercial users. Pollution prevention assistance is one example of the efforts the NBC has employed to implement the "kinder and gentler" approach. The NBC ESTA staff is referred to every user in violation of EPA or NBC Rules and Regulations. The NBC has incorporated the "carrot vs. stick" method into its enforcement program. The pollution prevention assistance program and the educational approach have been very successful at bringing non-compliant users into compliance and have contributed to a reduction in the percentage of users in Significant Non-Compliance with NBC and EPA Regulations. The 1994 ERP states that the NBC will issue an Administrative Order for many violations that are considered to be minor by today's enforcement philosophies.

The NBC takes non-compliance with its rules and regulations very seriously. As such, no violation goes unaddressed; as the NBC issues a Notice of Violation for every user violation. Escalated enforcement action however, in the form of an Administrative Order, is initiated as necessary to protect the NBC POTWs and as needed the most to protect Narragansett Bay. Further, deferment in the time period before an escalated enforcement action is initiated is necessary to allow ESTA staff an opportunity to work with industry to address compliance issues from the "kinder and gentler" perspective. Based upon the change in enforcement philosophies over the past few years, the NBC has revised its ERP to more accurately reflect the "kinder and gentler" approach advocated by EPA and utilized over the past few years. This revision is required by the new RIPDES permits issued to the NBC by the DEM on December 31, 2001. The NBC Enforcement Response Plan was revised in 2002 to accurately reflect the enforcement protocols presently followed at the NBC. The final ERP was approved by the DEM in September 2003.

In 2004, the NBC implemented a non-substantial change in the allowable pH limitations for both treatment facilities. The change standardized the pH limitations at both treatment facilities to 5.0 standard units (s.u.) - 11.0 s.u. from 5.0 s.u. - 10.0 s.u. in Field's Point and 5.5 s.u. - 9.5 s.u. in Bucklin Point. The NBC requested this modification in a request to revise the Rules and Regulations. The DEM determined the modification to be a non-substantial program modification and these changes became effective on December 13, 2004.

~ 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, commonly referred to as "the bean counts" are provided in the Pretreatment Performance Summary Sheets. The Pretreatment Performance Summary Sheets, one for each NBC sewage district, are provided in TABLES 3 and 4 and detail the 2006 accomplishments of the NBC Pretreatment, Environmental Monitoring, and Enforcement Programs.

TABLE 3

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	Raymond Marshall, P.E. , Executive Director
	Thomas P. Uva, PP&R Director
	Kerry M. Britt, Pretreatment Manager
Contact Telephone	(401) 461-8848
RIPDES Number	RI 0100315
Reporting Period	January 1, 2006 - December 31, 2006
Total Categorical Industrial Users as of the date of this report (throughout the reporting period)	46 (51) (See Note 1)
Total Significant Non-Categorical IUs as of the date of this report (throughout the reporting period)	9 (10) (See Note 1)
Total # Significant Industrial Users (SIUs)	55 (61) (See Note 1)

2. Significant Industrial User (SIU) Compliance

	Significant Industrial Users	
	Categorical	**Non-Categorical**
1. # Of SIUs Submitting BMRs/# Required	9/9	2/2
2. # Of SIUs Submitting 90-Day Compliance Reports/# Required	1/1	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	0

TABLE 3
(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	11/11	3/3
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	220	35
5. # Of Sampling Visits Conducted	110	21
6. # Of Facilities Inspected (Nonsampling)	51	10
7. # Of Facilities Sampled	51	10
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 3
(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	378	26	1,119	1,523
3. Admin. Orders Issued	0	0	0	0
4. Combined Total Of Administrative Orders and Notices of Violation	378	26	1,119	1,523
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	0	3	6
8b. Rate of IUs in SNC	3/51 = 5.9%	0/0 = 0%	N/A	N/A
9a. Amount Of Penalties Collected (Total Dollars/IUs Assessed)	$0/0	$0/0	$25,000/1	$25,000/1
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	46	6	438	490
11. Other Actions (Permit Suspensions, 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.

March 15, 2007

AUTHORIZED REPRESENTATIVE **DATE**

TABLE 3
(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 eliminating discharges to the sewer.

TABLE 4

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	Raymond Marshall, P.E. , Executive Director
	Thomas P. Uva, PP&R Director
	Kerry M. Britt, Pretreatment Manager
Contact Telephone	(401) 461-8848
RIPDES Number	RI 0100072
Reporting Period	January 1, 2006 - December 31, 2006
Total Categorical Industrial Users as of the date of this report (throughout the reporting period)	32 (34) (See Note 1)
Total Significant Non-Categorical IUs as of the date of this report (throughout the reporting period)	13 (15) (See Note 1)
Total # Significant Industrial Users (SIUs)	45 (49) (See Note 1)

2. Significant Industrial User (SIU) Compliance

	Significant Industrial Users	
	Categorical	**Non-Categorical**
1. # Of SIUs Submitting BMRs/# Required	9/9	2/2
2. # Of SIUs Submitting 90-Day Compliance Reports/# Required	1/1	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	1	0

TABLE 4
(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	7/7	3/3
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	184	78
5. # Of Sampling Visits Conducted	78	35
6. # Of Facilities Inspected (Nonsampling)	34	15
7. # Of Facilities Sampled	34	15
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 4
(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	231	69	558	858
3. Admin. Orders Issued	0	0	0	0
4. Combined Total Of Administrative Orders and Notices of Violation	231	69	558	858
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)	4	1	5	10
8b. Rate of IUs in SNC	4/34 = 11.8%	1/15 = 6.7%	N/A	N/A
9a. Amount Of Penalties Collected (Total Dollars/IUs Assessed)	$26,000/2	$0/0	$0/0	$26,000/2
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	29	14	229	272
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.

Kevin McBurney — March 15, 2007

AUTHORIZED REPRESENTATIVE **DATE**

TABLE 4
(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.

II. PROGRAM ADMINISTRATION

RIPDES Permit Numbers

On September 30, 1992, the Rhode Island Department of Environmental Management, (DEM) Office of Water Resources issued RIPDES permit number RI 0100315 to the NBC for its Field's Point Wastewater Treatment Facility. This permit became effective on October 30, 1992 and superseded the permit issued on April 4, 1979. The Narragansett Bay Commission RIPDES permit number for the Bucklin Point Wastewater Treatment Facility is RI 0100072. This permit was issued on January 2, 1991 to the former Blackstone Valley District Commission. On December 31, 2001, the RI DEM issued new RIPDES permits for the two NBC wastewater treatment facilities. The NBC had appealed several conditions of these permits and worked with the DEM throughout 2003 to resolve issues of concern. A Consent Agreement, RIA-330, resolving the appealed conditions was signed by both parties and issued by the DEM in January 2004. In June 2006 Consent Orders (CO) were issued by the DEM to both NBC facilities. The COs imposed nutrient limitations for Field's Point and more stringent nutrients discharge limitations for the Bucklin Point. Both COs detail requirements which the NBC must satisfy in order to accomplish the limitations, and impose interim limitations until such requirements are implemented.

Personnel

At the Narragansett Bay Commission, the control and reduction of toxic and nuisance discharges to the sewer system is a team effort consisting of staff from all sections of the Division of Planning, Policy and Regulation (PP&R) of the NBC. The PP&R team 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 Narragansett Bay, from the wastewater operators that report unusual influents to the legal staff that initiates enforcement actions against violators. The organizational plan of the Narragansett Bay Commission is provided in FIGURE 2, while the organizational plan of the Division of Planning, Policy & Regulation is provided in FIGURE 3.

The PP&R Division consists of the Pretreatment Section, Environmental, Safety & Technical Assistance (ESTA) Section, Permits & Planning Section, Environmental Monitoring & Data Analysis Section (EMDA), and the Laboratory Section. The PP&R Division is charged with 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 the ESTA Section achieves pollutant reduction outcomes through user education efforts and by providing free technical assistance. Both sections rely heavily upon the services and expertise of the EMDA Section and the Laboratory Section. The EMDA Section conducts user, river, treatment facility, and manhole monitoring activities and is responsible for logging and reviewing data reported on samples analyzed by the NBC Laboratory Section.

FIGURE 2
Narragansett Bay Commission

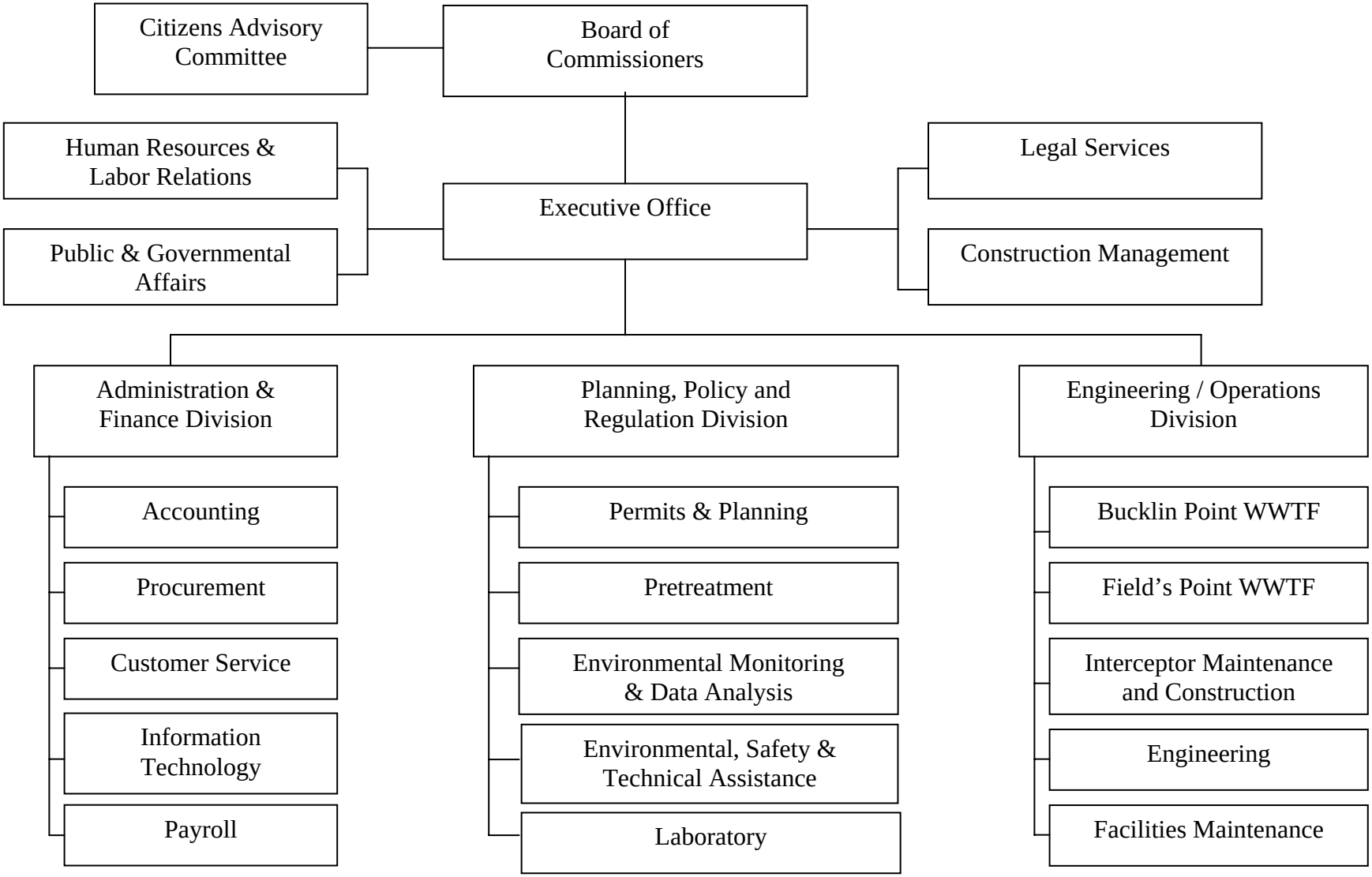
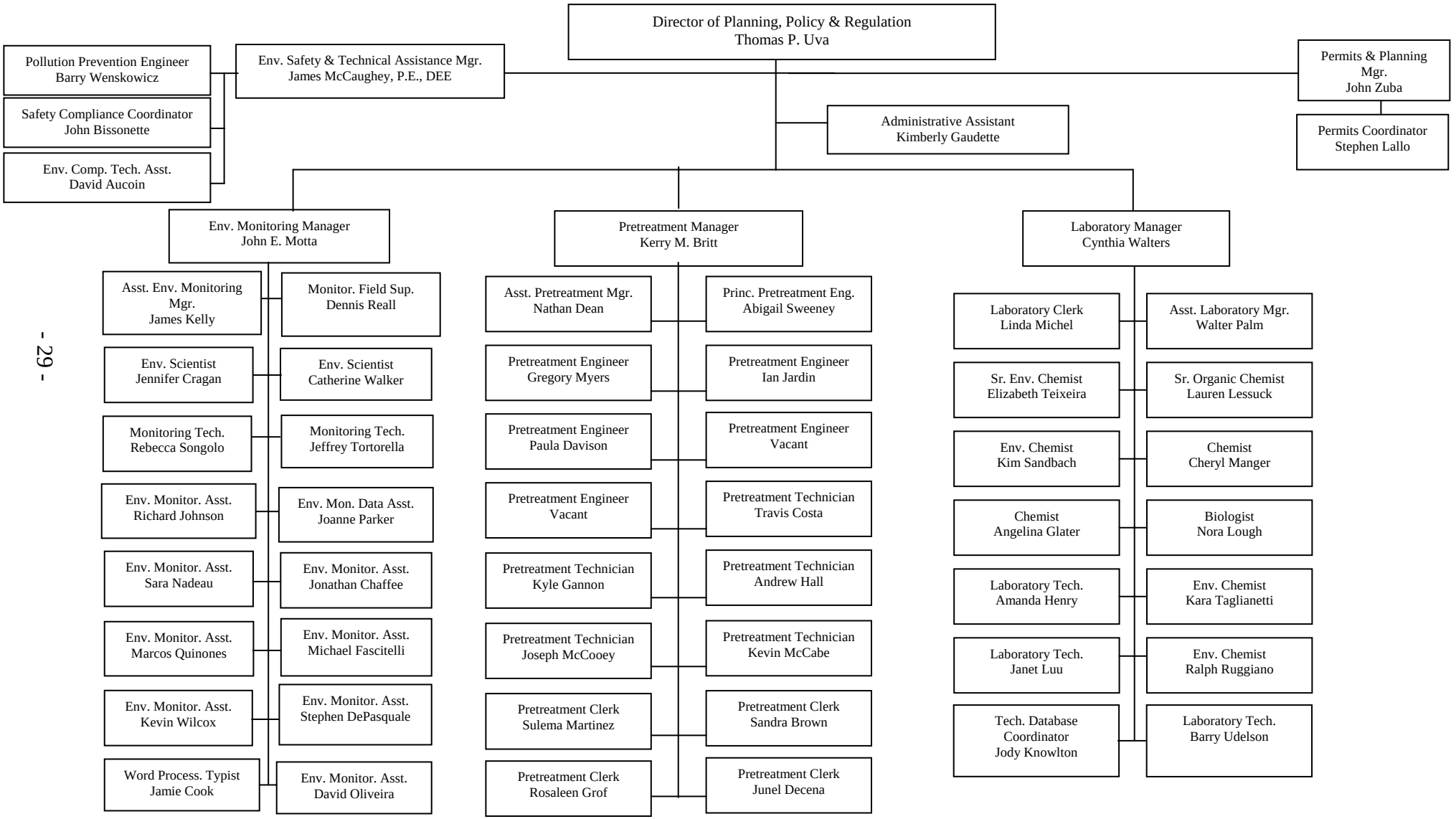


FIGURE 3
Narragansett Bay Commission
Division of Planning, Policy & Regulation
March 15, 2006



During 2006 there were five personnel changes within the Pretreatment Section. In June 2006 Kendra Timbers vacated her position as a Pretreatment Engineer for a position in another state. This vacant Pretreatment Engineer position was filled by Ian Jardin in August 2006. In August 2006 James Kelly was promoted to Assistant Environmental Monitoring Manager leaving his Principal Pretreatment Engineer position vacant. Abigail Sweeney was promoted from her Pretreatment Engineer position to fill the vacant Principal Pretreatment Engineer position. The departmental needs were reevaluated at this time. It was determined not to fill the vacant Pretreatment Engineer position and fill the previously frozen Pretreatment Clerk position. This position was filled by Junel Decena in November 2006. In late December 2006 Paula Davison vacated her Pretreatment Engineer position for a position with the State of Massachusetts. This vacant position has been posted and will be filled in early 2007.

During 2006 there were several personnel changes within the EMDA Section. There were three vacant Environmental Monitoring Assistant positions at the end of 2005. These positions were filled by Kevin Wilcox in February 2006, Marcos Quinones in March 2006 and Stephen DePasquale in April 2006. In February 2006 Stephen Kadelski vacated his position as an Environmental Monitoring Assistant for a position in private industry. The vacant Environmental Monitoring Assistant position was filled by Jonathan Chaffee in March 2006. In August 2006 J. Taylor Ellis vacated his position as the Assistant Environmental Monitoring Manager. This position was filled by James Kelly in August 2006. In September 2006 Alyson Canestrari vacated her Monitoring Technician position for a position in private industry. Jeffrey Tortorella was promoted from his Environmental Monitoring Assistant position to fill the vacant Monitoring Technician position in October 2006. David Oliveria filled the vacant Environmental Monitoring position in December 2006.

There were two personnel changes in the Laboratory Section during 2006. Jamie Tran resigned from her position as a Laboratory Technician in September 2006. This vacant position was filled by Allison Oakley in October 2006. Allison Oakley resigned from her Laboratory Technician position in late December 2006. The position has been posted and will be filled in early 2007.

There were no personnel changes in 2006 within the Environmental, Safety & Technical Assistance Section which was previously known as the Pollution Prevention Section. The scope of the program has expanded and changed since its inception in 1992. The section provides technical assistance to permitted users and various sections in the NBC as well as Health and Safety training to NBC staff. To more accurately reflect the section's responsibilities the name was changed to Environmental, Safety & Technical Assistance.

The Permits & Planning Section did not experience any personnel changes during 2006

Staff Training

The Narragansett Bay Commission provides extensive training to its employees and has a tuition reimbursement program to assist employees in furthering their education. During 2006, various Pretreatment, EMDA, ESTA, and Laboratory personnel received training by attending seminars and classes in the following subject areas:

- Confined Space Entry
- Spill Response and Tracking
- Interdepartmental Cross Training
- Management of Hazardous Waste
- Infectious Material Exposure Control
- NACWA Pretreatment and Pollution Prevention Conference
- GIS Training
- Supervisor Safety Training
- Surface Finishers' Industry Council Annual Conference
- EPCRA Tier II Reporting
- Wind Energy Conference
- RI Wind Alliance Workshop
- New England Sustainable Energy Association Energy Conference
- Incident Command Training
- Low Impact Development for Stormwater Management Training
- VSAT Training
- Air Monitoring Equipment Training
- Disaster Preparedness & Response Seminar
- Civil Rights and Sexual Harassment Training
- Slip and Fall Prevention Training
- Defensive Driver Training
- Hearing Conservation Training
- Healthy Back Training
- 8 Hour OSHA HAZWOPER Recertification Training
- Personal Protective Equipment
- Right to Know Training
- EPA Regional Pretreatment Workshop
- CPR/AED Training
- First Aid Training
- Boom Deployment Training Drill
- Traffic Control Safety Training
- Fire Extinguisher Training
- Evacuation Training
- Job Safety Analysis Training
- OSHA Update
- EPA Brown-Fields Conference
- Boat Safety Training
- Seabird Monitoring Training

- YSI Meter Operation

- Assets - Water Quality Training
- Bucklin Point Nitrification Training
- NACWA - Use Attainability Analysis
- NPDES Permit Writing Workshop
- Stormwater General Permit Monitoring Training
- Water Quality Standards Academy
- Northeast Regional Mercury Science & Policy Conference
- Dept. of Health Rules & Regulations for Laboratory Certifications, State Licensing and Auditing
- 2006 NEWEA / NYWEA Spring Meeting
- 2006 NEWEA Annual Conference & Exhibit "LPC's SOP Workshop"
- ICP, ICP/MS Seminar
- Overview of Speciated Inorganic Analyses in Water
- Atomic Spectroscopy Workshop
- Beyond the Laboratory: Unique Solutions for the Water/Wastewater Industry
- LACHAT Cyanide Training
- LACHAT Micro Distillation and QuikChem 8500 Instrumentation
- Varian 720 ES Webinar Seminar
- Business Writing Basics
- Office Productivity Workshop Outlook
- Web & Internet Email
- Interactive Helpdesk
- Excel
- Sexual Harassment Training
- Skills for First Time Supervisors
- Keyboarding 1
- Managing Emotions Under Pressure
- Retirement Planning
- Performance Track Training
- NBC Boardroom Presentations Training
- Management Training

Staff Participating 40 hr HAZWOPER Training

The NBC provides 40 Hour HAZWOPER training to all new Pretreatment, Pollution Prevention and Environmental Monitoring personnel. The 40 hour 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 Pretreatment, EMDA, and ESTA personnel that have previously completed the 40-hour HAZWOPER training program. The eight hour recertification training session is required by OSHA annually as a refresher class. During 2003, the NBC began conducting the eight hour HAZWOPER Recertification Training in house. The recertification program consists of many sessions, such as confined space entry, spill tracking, boom deployment, personal protective equipment, basic chemistry, use of air monitoring equpment, CPR/AED and first aid. The training sessions are held throughout the year. This method of training is a more comprehensive program that is better suited to the NBC's needs.

EMDA staff deploy a boom at the Bucklin Point Outfall.

NBC Toxics Reduction, Control and Monitoring Program Budgets

The Commission is committed to protecting the two NBC Wastewater Treatment Facilities and Narragansett Bay from toxic discharges. This pledge to protect the environment is evidenced by the Commission's continued commitment to ensure adequate staffing and funding levels for the Division of Planning, Policy and Regulation as necessary to ensure environmental protection. The approved fiscal year 2007 Pretreatment budget was $995,164, a 8.1% increase from the prior year's budget. The increase attributable increase in personnel costs and capitalized items. The fiscal year 2007 Pretreatment budget allocated 92.6% to personnel cost or $921,228.

The budget for the EMDA Section in fiscal year 2007 was $1,227,050, of which 85.8% or $985,924 was attributed to personnel expenses. The FY 2007 EMDA budget increased by less than 1%, or $716, from the previous year.

The ESTA budget for fiscal year 2007 was $313,076, an increase of $21,752 from the FY 2006 budget of $291,324. The approved fiscal year 2007 Laboratory budget was $1,426,860, an increase of 6.5% or $87,125 from the previous year. Personnel costs associated with the ESTA and Laboratory Sections budgets were 93.3% and 69.9% respectively.

In 1983, the R.I. General Assembly passed Public Law 1983, Chapter 235 which required that the Commission 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). In accordance with an order from the PUC, 100% of the Pretreatment Program budget is recovered from permit fees. On July 1, 1995, a new permit fee rate structure approved by the PUC became effective to ensure recovery of these costs. These rates were increased in 2003 in accordance with a PUC Rate hearing. This permit fee rate structure is provided in CHAPTER III.

Pretreatment Information Management Computer System

Since 1987, the Commission has entered into numerous contracts with Digital Equipment Corporation (DEC) to develop software for the Industrial Pretreatment Program. To this date, the Commission has spent approximately $115,000 on pretreatment software development through this private consultant. The Pretreatment Information Management Computer System is a networked computer system with inquiry access available to all Sections of the NBC via their desktop computer terminal.

In late 1999, the NBC began to investigate the conversion of the pretreatment software package to a Graphical User Interface (GUI) system and to enhance the software to perform additional functions. The conversion of the pretreatment software package from a Character Based Legacy system to a GUI system allowed for improved functionality within the PC office environment utilized throughout the NBC. The new GUI pretreatment software was completely developed in-house by the NBC Information Technology (IT) Section and was put on line during 2004. The revised software allows entry of photographs of users' sampling locations, pretreatment systems and surveillance manholes to be inserted. The new software was used in parallel to the existing software throughout 2004 to ensure the new software is performing in the same manner as the old. In May 2005 the old Pretreatment Software was taken off line. The new pretreatment software will interface directly with the NBC Laboratory's Laboratory Information Management System (LIMS), allowing improved sample tracking and fast reporting of lab results, and will eventually be able to interface with a Geographic Information System (GIS) presently under development at the NBC. It currently interfaces with the existing Customer Service software and will interface with the new Customer Service software currently being developed by NBC IT Staff.

On December 31, 2001, the RIDEM issued RIPDES permits to the NBC for its two wastewater treatment facilities. These new RIPDES permits required the NBC to significantly expand upon the information reported to the DEM in the Annual Pretreatment Report. The NBC Pretreatment Computer System was enhanced to track the many items which are required to be annually reported.

The Pretreatment software package has the following capabilities:

- Ability to track users in up to twenty separate drainage districts with different local limits and analyze the user data either separately or collectively;
- Ability to create a file for each user which contains information pertinent to the user such as company name, address, permit number, solvents and chemicals used, user classification, user category, water usage, the key manhole that the user discharges to, 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;

- 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. Notice of Violation letters can be 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 files of 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 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 visa versa, the date of the change, and the engineer that made the change;
- Ability to generate mailing labels for various categories or classifications of users;
- 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.

The Pretreatment and IT Sections continue develop subroutines to provide more comprehensive reports.

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 and Governmental Affairs Office, in conjunction with the staffs of the ESTA and Pretreatment Sections continually inform users of various NBC activities. The Commission 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 the NBC Newsletter;
- Development and distribution of educational fact sheets and technical bulletins;
- Public Meetings, Workshops, and Hearings;
- Displays at Public Events;
- The Commission's Citizens Advisory Committee.

During the past twelve months, the Commission 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 2006, the NBC sent ten informational form letters to various categories of regulated users located within the NBC districts. The first informational letter was sent out to auto salvage yards on January 9, 2006 notifying them of a NBC and DEM co-sponsored workshop to educate these companies on their environmental responsibilities.

The second informational form letter was sent to all Significant Industrial Users (SIU) on March 14, 2006 and notified the users that they were classified by the NBC as SIUs. The form letter is issued annually to remind the SIUs of their reporting requirements outlined in 40 CFR §403.12.

The third letter was issued on March 15, 2006. This letter was issued to all users who were published in the Providence Journal on March 1, 2006 for being in Significant Non-Compliance (SNC) for the reporting period October 1, 2004 through December 31, 2005 as mandated by EPA regulations. The letter included an invoice to be paid by the user for its share of the cost to publish the notice.

The fourth informational letter was sent to septage haulers on March 16, 2006. The letter summarized the results of a survey of septage haulers conducted by the NBC and the procedures the NBC implemented as a result of the survey.

The fifth informational letter was sent to all industrial users on March 21, 2006 and notified the users of the EPA SNC criteria which is used by the NBC. The letter explained the NBC's permit and reporting requirements.

The sixth form letter was issued to all industrial users on May 17, 2006 notifying them that prohibited substances should not be discharged to the NBC sewer system during the summer shut down and clean up period. The letter warned users that civil and criminal penalties would be strictly enforced against violators caught illegally dumping.

The seventh informational form letter was issued on June 12, 2006 to auto body facilities located in the NBC's districts. The letter informed the auto body facilities of the Rhode Island Department of Environmental Management's Self-Certification Program to assist in complying with regulations.

The eighth informational letter was issued to all Significant Industrial Users (SIUs) on June 9, 2006. The letter educated the SIUs of the impacts of stormwater on the sewer system and transmitted a survey regarding stormwater flows and associated management.

The ninth informational letter was sent on December 6, 2006 to all industrial users. The letter reminded the industrial users to manage and dispose of wastes properly during the holiday shut down and wished them a happy holiday season.

The tenth and final form letter was issued to all permitted septage haulers on December 15, 2006 to transmit vehicle identification stickers and to notify the haulers that discharges would not be permitted without a valid sticker.

Copies of these eight informational letters are provided in ATTACHMENT VOLUME I SECTION 1.

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 NBC ESTA and Pretreatment Programs;

- Articles regarding NBC personnel;
- NBC Progress on Combined Sewer Overflow (CSO) project;
- Public and community outreach projects;
- Capital Improvements for NBC facilities;
- Water Quality;
- Permitting Issues
- 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 of prohibition of concentrated discharges from industries during their annual summer vacation shutdown and clean-up period;
- Public Notice announcing the NBC Environmental Merit and Regulatory Compliance Award winners;
- Public Notice to remind industry of the need to obtain a sewer connection permit;
- 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 a quarterly newsletter which is sent to all permitted users, and develops educational brochures and fact sheets. The NBC newsletter informs 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 2006 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* – In 2006, over 2000 visitors took a complimentary tour of the NBC's wastewater treatment facilities. These visitors ranged from school children to university students to engineers. To make the tours even more accessible to area

students, the NBC offered school bus scholarships to help defray transportation costs for schools in the NBC service district.

- *Reclaiming an Urban Resource:* The Woonasquatcket River Restoration Initiative – On April 20, 2006, Earth Day, the NBC sponsored a large river clean-up on the Woonasquatucket River, an American Heritage River that runs through several Rhode Island communities on the way to Narragansett Bay. Over eighty members of the NBC staff in addition to volunteers from other state agencies, local businesses and students from local colleges and universities lent their sweat equity to pull countless tires, shopping carts, and other debris from the river.

- *Maintaining a Presence on the World Wide Web (**www.narrabay.com**)* - To further improve communications with our customers, the NBC continued to enhance its web site. Traffic and construction information relating to the NBC's Combined Sewer Overflow (CSO) project are regularly updated on the site. Pretreatment and Permitting forms in downloadable formats continued to be updated during 2006.

- *Advocacy for Clean Water*– In 2006, the NBC worked with over 1600 WWTFs nationwide to advocate for federal funding for clean water infrastructure. NBC's Executive Director testified before the US Senate Committee on the Environment and Public Works, presenting the municipal perspective on infrastructure needs for the next two decades.

- *Teaching Children About Water Conservation and Wastewater Treatment* – During 2006, the NBC continued to work with area schools to educate children on the impacts of pollution on water quality. During the year the NBC worked with nine schools and 500 students. The program named Woon Watershed Explorers Program, involved monthly classroom visits, journal writing and awarding student achievement badges.

- *Celebrating the Importance of Narragansett Bay* - For the twelfth year in a row, the NBC sponsored its annual poster contest for elementary school students in kindergarten through sixth grade. Over 650 students enthusiastically illustrated the theme, "Be A Bay Buddy" with colorful, original depictions of the importance of clean water. Winners received a U.S. savings bond and have their artwork showcased in a year 2007 calendar poster. In addition, the winning posters were exhibited along with other environmentally themed art at a Providence art gallery.

- *Recognizing Students for Environmental Awareness* - For the fourteenth consecutive year, the NBC has participated in the Rhode Island State Science and Technology Fair and presented savings bonds to those junior and senior high school students who best demonstrate how to achieve a cleaner Narragansett Bay.

- *Student Internships* - The NBC continued its tradition of opening its doors to provide experiential education opportunities for local high school and college students. This year, students gained practical hands-on experience in areas as diverse as wastewater treatment operations, public affairs, and environmental monitoring and data analysis.

- *Career Opportunities Outreach* - Through the efforts of the NBC's Affirmative Action Committee, the NBC delivered career day presentations to students in Lincoln, Central Falls and Providence.

- *Supporting Community Programs* - Each year, the NBC solicits funding ideas from employees and the public for the monies collected from environmental violators. This year, several environmental projects were given financial support including: an environmental engineering scholarship at the University of Rhode Island and the environmental education programs at First Works Providence.

- *Honoring Industrial and Commercial Users for Environmental Performance* - This year, the NBC recognized eleven companies in the service district with Environmental Merit Awards for Pollution Prevention and Perfect Compliance Awards with regulatory requirements. In 2006, the NBC continued its program to recognize firms that implement storm water management plans and minimize storm flow to the sewer. The environmental strides made by these companies were honored at a special breakfast of the Providence Chamber of Commerce.

- *Reaching Out to the Business Community* - At the Providence Chamber of Commerce's Business Expo, the NBC provided attendees with information on how to save money and help the environment through proper wastewater treatment. More than 1,500 people stopped by the NBC display booth for information over the two-day event.

- *Supporting the Local Shellfishing Industry* - In 2006, the NBC again sponsored four shellfish relocation efforts, with the participation of the Rhode Island Department of Environmental Management, Rhode Island Department of Health, the University of Rhode Island, the Rhode Island Shellfishermen's Association, and the Ocean State Shellfishermen's Association. In May, shellfishermen gathered in five different locations to scoop more than 850,000 pounds of shellfish from lush beds which lie in restricted fishing areas. The quahogs were transplanted to non-restricted waters throughout the bay and allowed time to cleanse themselves and to reproduce. In December, local shellfishermen harvested the transplanted shellfish. The harvest contributed to a significant boost to the state's economy, and an abundance of shellfish for consumers during a time of year when demand is traditionally high.

- *Keeping Our Stakeholders Informed* - The NBC enhanced its communications with the issuance of an e-newsletter. The e-newsletter offers information on infrastructure improvements, NBC programs and activities. In addition, the Commission continued make available its a 17-minute DVD about the CSO Project, entitled *The Biggest Project You'll Never See*. The DVD is available free to the public.

- *Bi-lingual Information* – During 2006, 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

American Cancer Society, the Amos House, and the American Red Cross.

- *State Employee Charitable Appeal* - NBC employees participated in the 2006 State Employees Charitable Appeal (SECA) and raised over $15,000 for a host of worthwhile, appreciative charitable organizations.

NBC Speakers Bureau

Several years ago, the Narragansett Bay Commission established a Speakers Bureau to address the many requests received to speak at schools, workshops and meeting, both locally and nationally. During 2006, NBC personnel were quite active educating the public and professional organizations about the NBC and its many programs and accomplishments. The following paragraphs detail a few of these activities:

~Presentation to City Officials

On March 16 2006 Kerry Britt, Pretreatment Manager, gave a presentation to city officials during a workshop sponsored by RI Department of Environmental Management-Criminal Division. The presentation outlined the NBC's Pretreatment and Sewer Connection Programs. The participants were educated about these programs and how they interact with the NBC's activities.

~Presentation to the Dental Community

On March 22, 2006 Kerry Britt, Pretreatment Manager, gave a presentation to representatives of the dental community during a workshop held by the RI Department of Environmental Management to introduce its program requiring dental facilities to install amalgam separation equipment. The presentation outlined the NBC's Best Management Practices for the Management of Waste Dental Amalgam.

~Workshop for Building Officials

On May 17, 2006 the NBC sponsored a workshop on stormwater management for building officials. John Zuba, Planning & Permits Manager, gave a presentation on the NBC's Sewer Connection, Sewer Alteration and Stormwater Management Programs. Kerry Britt, Pretreatment Manager, gave an overview of the Pretreatment and Grease Control Programs. Two stormwater management case studies were presented by consultants during the workshop.

~Presentation of the Annual EPA New England Region Pretreatment Coordinators Conference

On September 28, 2006 Kerry Britt, Pretreatment Manager, gave a presentation at the annual EPA New England Regional Pretreatment Coordinators Conference held in

Concord, NH. The presentation outlined the NBC's Best Management Practices programs for dental and food preparation facilities.

~Classes at the Community College of Rhode Island

Walter Palm, Assistant Laboratory Manager, is an adjunct professor at the Community College of Rhode Island. Courses he taught during 2006 included Environmental Chemistry, General Chemistry and Biomedical Chemistry.

~Rhode Island Department of Environmental Management Litter Task Force Presentation

On March 15, 2006 Thomas P. Uva, Director of Planning, Policy & Regulation, gave a presentation to the DEM Litter Task Force. The NBC-funded Hard-to-Dispose-of Items report and its finding were presented.

~Governor's Bay Coordination Team Presentation

On August 23, 2006 Thomas P. Uva, Director of Planning, Policy & Regulation, presented NBC monitoring data indicating the majority of the nitrogen loadings impacting the upper Bay is originating from Massachusetts to the Governor's Bay Coordination team.

~Governor's Bay Summit

On September 26, 2006 Thomas P. Uva, Director of Planning, Policy & Regulation, gave a presentation at the Governor's Bay Summit An update on the status of the CSO Abatement project and detailed the water quality improvements achieved as a result of the Bucklin Point facility upgrades were presented.

~University of Rhode Island Hypoxia Workshop

On October 2, 2006 Thomas P. Uva, Director of Planning, Policy & Regulation, gave a presentation at the URI Hypoxia Workshop. The workshop focused on low dissolved oxygen levels observed in Narragansett Bay.

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 free to its commercial and industrial sewer users. Additional information about this program is provided in CHAPTER VII.

ESTA Program Educational Efforts

The NBC Environmental, Safety & Technical Assistance Section routinely holds workshops and develops educational handouts to inform users of technologies that can be cost effectively implemented to reduce the generation of waste and to conserve water.

During 2006, the following pollution prevention educational workshops and public outreach activities were held:

~Auto Salvage Yards Pollution Prevention

On January 11, 2006 the NBC cosponsored an Auto Salvage Pollution Prevention workshop. More than 50 representatives from various Rhode Island Auto Salvage facilities attended the workshop. Jim McCaughey, ESTA Manager, moderated the workshop that included speakers from DEM, RI Resource Recovery Corporation and a private consulting firm addressing environmental issues which included: hazardous waste management, mercury switch removal, Brown-fields requirements and stormwater management. A vendor area allowed for five vendors of relevant pollution control equipment to demonstrate their services to the workshop attendees.

~Port-of-Providence Evacuation Planning

On February 15, 2006 the NBC hosted a meeting of the Port-of-Providence Evacuation Planning Committee. The meeting, moderated by David Aucoin, Environmental Compliance Technical Assistant and directed by Chief Mathew Dillon of the Providence Fire Department included representatives of various tenants within the Port-of-Providence, FEMA and the Providence Police. Approximately 25 individuals were in attendance. During this meeting a date was chosen to hold a drill which consisted of a simulated ammonia leak from a rail car in the vicinity of Terminal Road. At that time a small group of representatives from each facility at the Port will evacuate to their designated rally points.

~Renewable Energy

On February 10, 2006, Barry Wenskowicz, Pollution Prevention Engineer, spoke as a member of the Energy and Materials Facility Tracking (EMFACT) Advisory Board to NEWMOA regarding the development of materials/energy tracking software.

~USCG Second Quarter Sector Southeastern New England Port Safety & Security Forum Meeting

On June 6, 2006 Dave Aucoin, Environmental Compliance Technical Assistant, gave the attendees of the USCG Safety and Security Forum a presentation on the details of the LEPC #5's 2nd Annual Port Evacuation.

~Rhode Island Pubic Utilities Commission Hurricane Preparedness

On June 27, 2006 Jim McCaughey, ESTA Manager, and Paul Nordstrom, NBC Director of Operations and Engineering, made a presentation on NBC's emergency procedures at a PUC sponsored Hurricane Preparedness Meeting.

~Auto Salvage Yards – Hazardous Waste Management

On June 21, 2006 the NBC and DEM sponsored workshop on "Hazardous Waste Management for Auto Salvage Yards and Auto Body Shops" was held at CCRI in Warwick. Dave Aucoin, Environmental Compliance Technical Assistant, moderated the workshop that was attended by more than 60 representatives from various auto salvage and auto body shops in Rhode Island.

~Rhode Island Wind Energy Alliance Group

On December 9, 2006 Barry Wenskowicz, Pollution Prevention Engineer, and Jim McCaughey, ESTA Manager, attended the first meeting of the RI Wind Alliance at Roger Williams University RWU in Bristol. Barry Wenskowicz gave a presentation on NBC's on-going wind energy efforts and Jim McCaughey gave a presentation on the use of Clean Renewable Energy Bonds CREBs to fund renewable energy projects. Approximately 60 representatives of various towns, municipalities and other organization interested in renewable energy were in attendance.

Educational Efforts

~Woonasquatucket River Education Pilot Project

In 2002, the Narragansett Bay Commission (NBC) received a grant from the Partnership for Narragansett Bay for an environmental education program entitled, What's In Your River: A Woonasquatucket River Education Pilot Project. The program targeted six schools in six communities along the Woonasquatucket River. The NBC EMDA staff along with assistance from Pretreatment and Public Affairs coordinated and implemented the program. NBC staff worked with students to collect water quality data in the fall, winter and spring. Students learned about water quality parameters such as pH, turbidity and dissolved oxygen and in a culminating event in May of 2003 each school presented their data findings.

Students review results from a Phospate sample from the river.

Due to the success of the pilot program, the NBC expanded What's in Your River in the fall of 2003 to accommodate the overwhelming school response. Ten schools and over 800 students participated in the program.

The NBC improves the program each year. In 2005, What's In Your River became the Woon Watershed Explorers Program, and an expanded version of the program continued throughout 2006. This program includes several new components including classroom visits once a month, student achievement badges and journal writing. Over fifteen schools and 1500 students have participated. The most impressive characteristic of the

program is the extreme diversity represented in each school. Some students have never taken a field trip to their local river, while others live adjacent to one.

The program encourages each school to take ownership of their local rivers and to pass on messages about clean water to their fellow students, families and neighbors. The Narragansett Bay Commission considers this program to be imperative to its success in its relentless pursuit of public outreach and education. Additional information regarding this program is provided in CHAPTER VII.

Citizen's Advisory Committee

The NBC has a permanent Citizens Advisory Committee (CAC) established as part of its organizational structure. The CAC meets monthly and is routinely informed of NBC activities by NBC staff. The CAC serves to advise and assist the NBC in its dealings with the public. Its members consist of representatives of the industrial community, environmental advocacy groups, and concerned citizens. Pretreatment staff made an annual presentation to the Citizens Advisory Committee during 2006 to review the progress and achievements of both programs during the prior year.

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), 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 And Commercial Users, Permits, And Inspections

User Classification System

To date, the Commission has identified and inspected 5,176 different industrial and commercial users located within the two NBC sewerage districts. During 2006 the Pretreatment staff identified and entered information on 141 previously unknown users into the NBC Pretreatment database. Pretreatment users are categorized according to the classification system shown in TABLE 5. 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 4 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 the Commission's 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 Commission standardized its definition of Significant Industrial User (SIU) in both sewage drainage districts by modifying the NBC Rules and Regulations. This definition was essentially an adoption of the Field's Point SIU definition, and classifies a Significant Industrial User 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 Commission's Treatment Plant;
- Firm is designated as significant by the Commission 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 5
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. Central Treatment Facilities - Hazardous Waste
29. Central Treatment Facilities - Non-Hazardous Waste

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. For Future Use
32. For Future Use
33. For Future Use
34. Manufacturers with high BOD/TSS waste
35. Other Facilities Discharging Conventional Pollutants
36. For Future Use
37. Automotive Maintenance/Service Facilities
38. For Future Use
39. For Future Use

TABLE 5
(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 5
(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 pollutants (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 5,601 industrial and commercial users have been identified through user surveys, 3,239 are still conducting business in the NBC service areas and 110 were classified as Significant Industrial Users sometime during 2006. Of the 110 Significant Industrial Users reported for 2006, there were 85 classified as categorical industries which are subject to both NBC and EPA regulations, 25 significant non-categorical industrial users of the NBC sewer system. During this reporting period, 10 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. A total of four firms were newly classified as significant during 2006. 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 1,522 Wastewater Discharge Permits in effect, which were issued to facilities located in the Field's Point and Bucklin Point drainage districts. Presently, 1010 permits are in effect for users in the Field's Point District, while 512 permits are in effect in the Bucklin Point service area. 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 moved out of the NBC District (Category 72).
- The firm has gone out of business (Category 71).
- 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 6 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 43 of the 77 categories listed in TABLE 5. During this reporting period, the Pretreatment staff issued 401 permits to users located in the two NBC drainage districts. Of the 401 permits issued during 2006, there were 191 new permits issued to new or previously operating commercial and industrial users and 210 permits were reissued to existing users because the old permit expired or the firm changed process operations.

TABLE 6
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	44	26	70
12	Metal Molding And Casting	1	0	1
13	Organic Chemical Manufacturer	0	0	0
14	Pharmaceuticals	0	3	3
15	Metal Formers	0	2	2
16	Steam Electric Power Generating	0	1	1
18	Centralized Waste Treatment Facilities	1	0	1
19	Transportation Equipment Cleaning	0	0	0
21	Tubbing/Vibratory/Mass Finishing	9	6	15
22	Chemical Transporters, Refiners, Recyclers, Manufacturers	4	2	6
23	Textile Firms	1	13	14
24	Printers	5	8	13
25	Industrial Laundries	0	3	3
26	Machine Shops/Machinery Rebuilding	2	2	4
27	Other Firms Discharging Toxics	11	15	26
28	Central Treatment Facilities, Hazardous	0	0	0
29	Central Treatment Facility, Non-Hazardous	0	0	0
34	Manufacturers With High BOD/TSS	0	2	2
35	Firms Discharging Conventional Pollutants	1	1	2
37	Automotive Maintenance/Service Facilities	8	4	12
40	Groundwater Remediation/Excavation Projects	5	2	7
41	Regulated Electroplating Or Chemical Processes Disconnected Or Recycled	18	6	24
42	Other Regulated Processes That Are Disconnected Or Recycled	29	13	42
43	Recycle Electroplating Or Chemical Processes With Cooling Water Or Boiler Discharges	11	4	15
44	Other Recycle Processes With Non-contact Cooling Water Or Boiler Discharges	3	3	6
46	Cooling Water With Solvents/Toxics On Site	11	4	15
49	Firms With Solvents, Toxics, Etc. On Site	1	0	1
51	Cooling Water	7	0	7
52	Boiler Blowdown/Condensate Discharges	10	6	16
53	Cooling Tower Discharges	5	7	12
59	Other Nontoxic Discharges	2	5	7
80	Septage Haulers/Dischargers	1	14	15
81	Food/Meat/Fish Produce Processing (Wholesale)	23	12	35
82	Supermarkets (Retail Food Processing)	16	12	28
83	Parking Garages/Lots	3	1	4

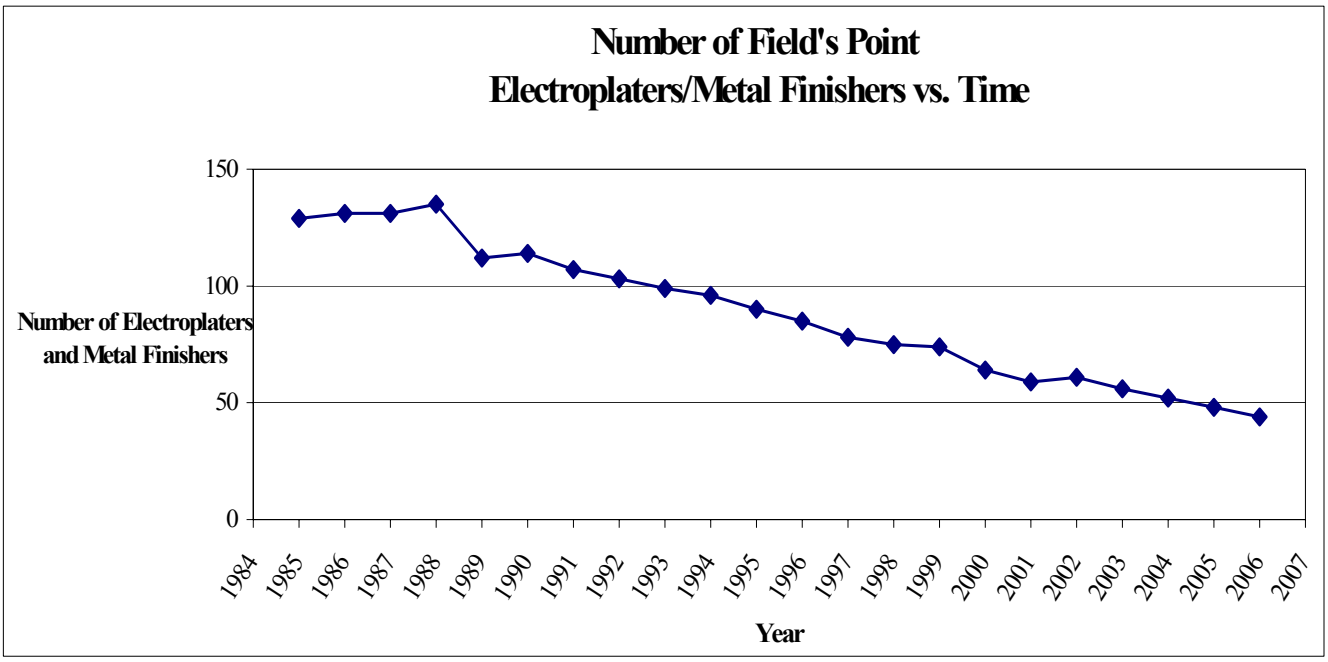
TABLE 6
(Continued)
Narragansett Bay Commission
Summary of Wastewater Discharge Permits in Effect

Category	Company	Field's Point District	Bucklin Point District	Total Permits In Effect
84	Cooling Water/Groundwater/Boiler Discharges	8	1	9
85	Restaurants/Food Preparation Facilities	396	193	589
86	Comm. Buildings With Cafeteria/Laundry	105	26	131
89	Other Commercial Users With Potential to Discharge - Conventional Pollutants	15	2	17
90	Hospitals	11	1	12
91	Cooling Water/Ground Water/Boiler Discharges	1	0	1
92	Laundromats/Dry Cleaners	51	25	76
93	Photo Processing	20	4	24
94	X-Ray Processing	76	43	119
95	Clinical, Medical, And Analytical Laboratories	18	5	23
96	Funeral Homes/Embalming	15	10	25
97	Motor Vehicle Service/Washing	41	11	52
99	Other Commercial Users With Potential To Discharge Toxic Or Conventional Pollutants	21	13	34
	Total Permits in Effect	**1010**	**512**	**1522**

There were 21 permits revised and reissued to SIUs in the two drainage districts during 2006, while three new permits were issued to this class of users. Seventeen of the 21 revised permits were issued to categorical users during 2006, while the four remaining revised permits were issued to significant non-categorical users.

As can be seen from TABLE 6, 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. The next largest category of permitted users are the electroplaters and metal finishers in Category 11. These users are regulated by federal categorical pretreatment standards as well as NBC local limits. Because of the nature of the electroplating operations, these industries contribute the majority of toxic metal and cyanide loadings to the NBC treatment facilities. The dramatic decline of Electroplaters and Metal Finishers over the past decade for the Field's Point district is clearly detailed in FIGURE 4.

FIGURE 4



The NBC has worked with the Metal Finishing Industry and state and federal agencies to investigate what can be done to retain jobs in this industry. Additional information regarding this subject is discussed in CHAPTER VII.

As of this date, 66 firms are operating under Zero Discharge Permits since they have eliminated process discharges and are recycling their process wastewater streams. The NBC has encouraged users to consider recycling their wastewater to eliminate discharges to the sewer containing toxic materials, to implement pollution prevention measures and to encourage conservation of water and raw materials. The 66 facilities that are recycling and are no longer discharging process wastewater to the NBC sewer system are classified in Categories 41 and 42 and can be identified from the list of users provided in ATTACHMENT VOLUME II, SECTION 1. An additional 21 firms recycle the majority of their process wastewater. However, they continue to discharge cooling water, condensate or boiler blowdown to the sewer. These firms are issued discharge permits and are classified in categories 43 and 44. A further discussion of firms recycling their process wastewater is provided later in this chapter.

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 many 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 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;

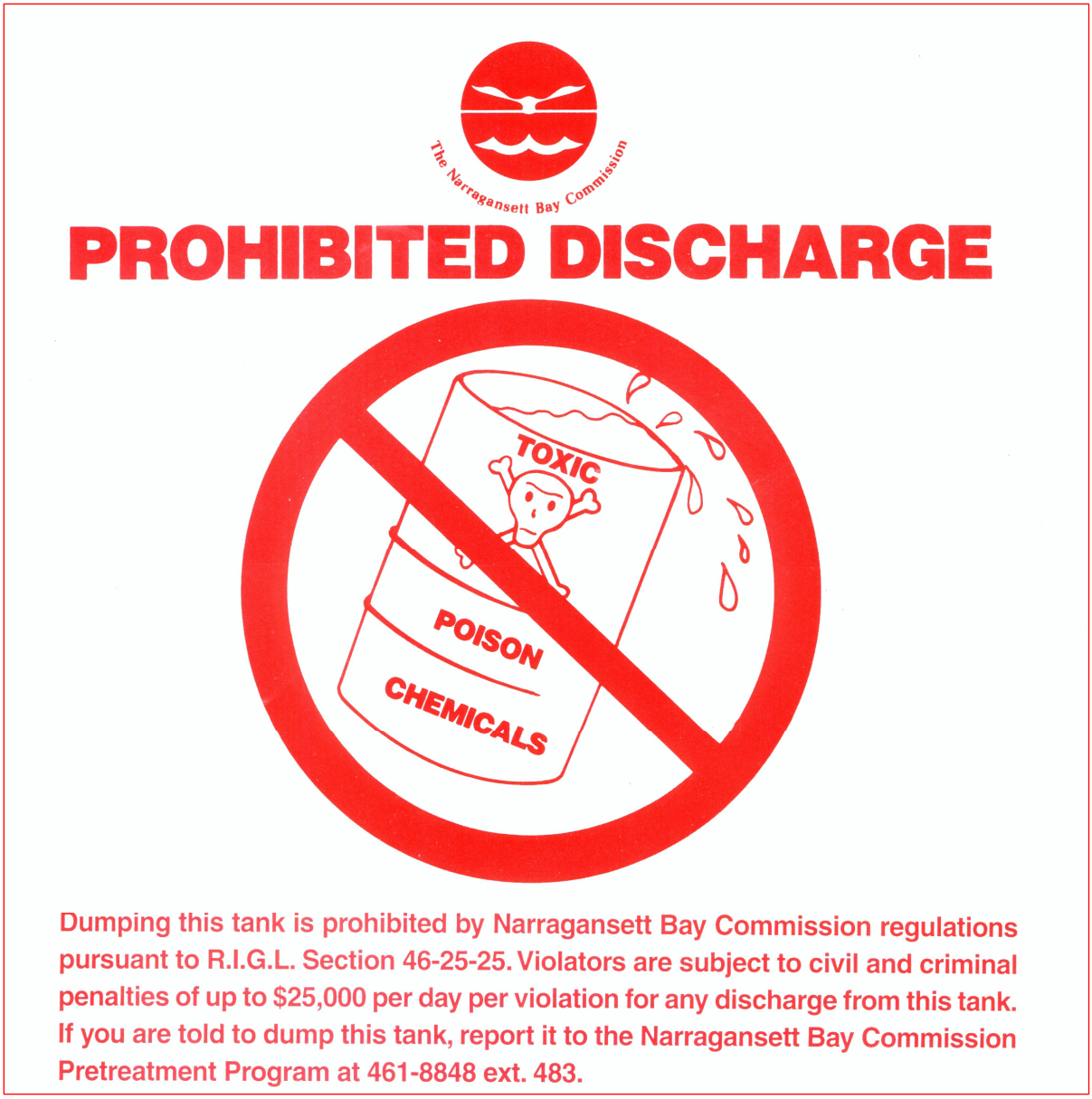
- Submission of a Spill and Slug Prevention Control Plan and a Toxic Organic/Solvent Management Plan. The user is required to contain all spills within the facility as part of the Spill and Slug Control Plan. The Toxic Organic/Solvent Management Plan requires the user to detail process operations, perform 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;

- 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.;

- 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.

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. On June 30, 2003, the Public Utilities Commission approved a new rate structure for NBC wastewater discharge permit fees. Permit fees range from $217 to $14,492 per year and are based on the time required for NBC personnel to regulate the particular type of industry. Rates are standardized in both NBC drainage districts and most categories are also flow dependent to encourage water conservation. The existing NBC wastewater discharge permit fee rate structure is provided in TABLE 7.

TABLE 7
Narragansett Bay Commission
Pretreatment Permit Fee Rate Structure

User Category Number	User Classification	Permit Fee
10	**Other Categorical Users**	$1,087.00
11	**Electroplater/Metal Finisher**	
	Flow < 2,500 GPD	$1,811.00
	2,500 ≤ Flow < 10,000 GPD	$3,623.00
	10,000 ≤ Flow < 50,000 GPD	$7,246.00
	50,000 ≤ Flow < 100,000 GPD	$10,144.00
	Flow ≥ 100,000 GPD	$10,869.00
12	**Metal Molding and Casting**	$1,087.00
13	**Organic Chemical Manufacturers**	$7,246.00
14	**Pharmaceuticals**	$1,087.00
15	**Metal Formers**	$5,797.00
16	**Steam Electric Power Generating**	$1,087.00
18	**Centralized Waste Treatment Facilities**	
19	**Transportation Equipment Cleaning**	$1,087.00
21	**Tubbing/Vibratory/Mass Finishing**	
	Flow < 5,000 GPD	$725.00
	Flow ≥ 5,000 GPD	$1,449.00
22	**Chemical Transporters, Refiners, Recyclers, Manufacturers**	$2,898.00
23	**Textile Processing Firms**	
	Flow < 2,500 GPD	$1,449.00
	2,500 ≤ Flow < 10,000 GPD	$3,768.00
	10,000 ≤ Flow < 50,000 GPD	$5,072.00
	Flow ≥ 50,000 GPD	$7,246.00
24	**Printers**	
	Gravure	$3,623.00
	Other Flow ≥ 2,500 GPD	$1,087.00
	Other Flow < 2,500 GPD	$725.00

TABLE 7
(Continued)
Narragansett Bay Commission
Pretreatment Permit Fee Rate Structure

User Category Number	User Classification	Permit Fee
25	**Industrial Laundries**	$3,623.00
26	**Machine Shops/Machinery Rebuilders**	$1,449.00
27	**Other firms discharging toxics and/or prohibited pollutants**	
	Flow ≥ 10,000 GPD	$2,898.00
	2,500 ≤ Flow < 10,000 GPD	$1,449.00
	Flow < 2,500 GPD	$725.00
28	**Central Treatment Facilities - Hazardous Waste**	$14,492.00
29	**Central Treatment Facilities - Non-Hazardous Waste**	$4,348.00
34	**Manufacturers with high BOD/TSS wastestreams**	
	Flow ≥ 100,000 GPD	$5,797.00
	50,000 GPD ≤ Flow < 100,000 GPD	$3,623.00
	10,000 GPD ≤ Flow < 50,000 GPD	$1,811.00
	Flow < 10,000 GPD	$1,087.00
35	**Other facilities discharging conventional pollutants**	
	Flow ≥ 10,000 GPD	$1,449.00
	Flow < 10,000 GPD	$725.00
37	**Automotive Maintenance/Service Facilities**	
	Small ≤ 2 Bays	$435.00
	Large ≥ 3 Bays	$1,449.00
40	**Groundwater Remediation/Excavation Projects**	
	Flow ≥ 10,000 GPD	$1,449.00
	Flow < 10,000 GPD	$725.00
41	**Recycle or Disconnected Electroplating or Chemical Processes**	$725.00
42	**Other Process Operations Disconnected or Recycled**	$290.00
43	**Recycle or Disconnected Electroplating or Chemical Processes with Cooling Water or Boiler Discharges**	$870.00
44	**Other Recycled or Disconnected Process Operations with Cooling Water or Boiler Discharges**	$362.00
46	**Cooling Water with Solvent, Toxic and/or Hazardous Chemicals on Site**	$362.00
49	**Other Discharges with Solvents, Toxics and/or Hazardous Chemicals on Site**	
	Flow ≥ 10,000 GPD	$1,087.00
	Flow < 10,000 GPD	$725.00

TABLE 7
(Continued)
Narragansett Bay Commission
Pretreatment Permit Fee Rate Structure

User Category Number	User Classification	Permit Fee
51	**Cooling Water with No Solvents, Toxic or Hazardous Chemicals on Site**	$362.00
52	**Boiler Blowdown/Condensate Discharges**	$362.00
53	**Cooling Tower Discharges**	$362.00
59	**Other Non-Toxic Industrial Discharges**	
	Flow ≥ 5,000 GPD	$725.00
	Flow < 5,000 GPD	$362.00
80	**Septage Haulers/Dischargers**	$435.00
81	**Food/Fish/Meat/Produce Processing (wholesale)**	
	Flow < 1,000 GPD	$362.00
	1,000 GPD ≤ Flow < 10,000 GPD	$725.00
	Flow ≥ 10,000 GPD	$1,449.00
82	**Supermarkets (Retail Food Processing)**	$725.00
83	**Parking Garages/Lots**	$725.00
84	**Cooling Water/Groundwater/Boiler Discharges with Potential to Discharge Conventional Pollutants**	$362.00
85	**Restaurants**	
	< 50 seats	$217.00
	≥ 50 seats < 100 seats	$435.00
	≥ 100 seats of fast food (2 or more fryolators and/or drive through window)	$580.00
86	**Commercial Buildings with Cafeteria and/or laundry operations**	$725.00
89	**Other Commercial Facilities with Potential to Discharge Conventional Pollutants**	
	Flow < 2,500 GPD	$362.00
	Flow ≥ 2,500 GPD	$725.00
90	**Hospitals**	$3,623.00
91	**Cooling Water/Groundwater/ Boiler Discharges with Potential to Discharge Toxic, Prohibited and/or Conventional Pollutants**	$362.00
92	**Laundries/Dry Cleaners**	
	Laundromats	$725.00
	Dry Cleaners with 1 washer or less	$362.00
	Dry Cleaners with ≥ 2 washers	$725.00
93	**Photo Processing**	
	Flow < 1,000 GPD	$362.00
	1,000 GPD ≤ Flow < 2,500 GPD	$725.00
	2,500 GPD ≤ Flow < 5,000 GPD	$1,087.00
	Flow ≥ 5,000 GPD	$1,449.00

TABLE 7
(Continued)
Narragansett Bay Commission
Pretreatment Permit Fee Rate Structure

User Category Number	User Classification	Permit Fee
94	**X-Ray Processing**	
	≤ 2 processors	$362.00
	3 - 4 processors	$725.00
	5 - 9 processors	$1,087.00
	≥ 10 processors	$1449.00
95	**Clinical, Medical and Analytical Laboratories**	$725.00
96	**Funeral Homes/Embalming Operations**	$362.00
97	**Motor Vehicle Service/Washing Operations**	
	rate per tunnel	$725.00
	rate per bay	$217.00
	maximum rate per facility	$1,449.00
99	**Other Commercial Users with Potential to Discharge Toxic, Prohibited and/or Conventional Pollutants**	
	Flow < 2,500 GPD	$362.00
	Flow ≥ 2,500 GPD	$725.00

Zero Process Discharge Wastewater Systems

Approximately 87 users in the two NBC districts are 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 the NBC 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 the NBC. 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. As previously noted, 66 facilities are presently classified in categories 41 and 42 and do not discharge process wastewater to the sewer system. Users with recycle process operations and diminuous discharges from condensate, boiler or cooling water wastestreams are issued discharge permits. There are 21 of these users which are classified in categories 43 and 44. Of the 87 users classified in categories 41 through 44, 61 facilities are permitted to operate zero process discharge wastewater recycle systems in the Field's Point District, while 26 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 Control Plan;
- Seal all floor drains and cap off all 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 NBC 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 NBC Pretreatment Program user 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 weekly 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 the pretreatment staff to firms which may be in financial trouble or ceasing operations. This allows the Pretreatment inspectors 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.
- *Telephone Book Reviews* - The Pretreatment staff will review the new telephone books when they are published annually to identify new non-domestic users that may require regulation. Particular attention is given to reviewing categorically regulated user categories such as electroplaters, metal finishers, metal formers, etc.

- *Directory Reviews* - The State of Rhode Island, Department of Economic Development publishes a Rhode Island Directory of Manufacturers annually which the Pretreatment staff subscribes to and reviews. This directory lists all manufacturing facilities located within the state by type of manufacturing operation and by Standard Industrial Classification (SIC) code. An annual review of this directory allows the NBC to identify potential non-domestic users that may require a Wastewater Discharge Permit. The Pretreatment office also subscribes to the Polk Directory. This directory lists the names and locations of all businesses and homes located in the metropolitan area. Polk Directory listings are arranged utilizing various methods, including by type of business, premise location, and even by telephone exchange. For example, if a firm is advertising in the help wanted section of the newspaper for an electroplating position and does not list the company name, Pretreatment staff can determine the premise location and company name from the phone number and will then inspect the firm if previously unpermitted.

- *Intra-Governmental Agency, Building and Sewer Connection Permit Referrals* - The NBC Pretreatment Section becomes aware of many new facilities through the building permit issuance process. New facilities under construction in the NBC district 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, RIDEM and EPA New England routinely 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.

- *Mill Complex and Industrial Park Inspection Program* - Regular inspections of industrial mill complexes within the NBC service district are performed to identify new and possibly transient users of the NBC facilities. Each staff member is assigned several mill complexes and industrial areas located throughout the NBC service district. Staff members are required to inspect at least one mill complex or industrial area per month to identify potential new nondomestic users of the NBC sewer system. During the mill complex and industrial area inspections, staff members compile a listing of all unpermitted facilities located within the mill or 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 mill complex and industrial area and filed by the mill complex street address or 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 neighborhoods 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. These public education programs have been very effective at identifying new and previously unknown users of the sewer systems.

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 40 CFR §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. The NBC Environmental, Safety and Technical Assistance Program educates users of the many pollution prevention alternatives available instead of discharging toxics into the sewer system, while the Pretreatment staff incorporates user education into every regulatory inspection.

- **Innovative and Effective Inspection Techniques** - The NBC 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 POTWs 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 Program has made great efforts to thoroughly standardize all aspects of the inspection process from inspection scheduling to writing of the inspection report letter. The Pretreatment Section has standardized and customized annual inspection report checklists for various classes of users, including for Significant Industrial Users (SIU), non-significant industrial users, restaurants, septage haulers, etc. The section 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 that the 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 engineer conducting the facility inspection. The inspection summary form letters may be a Notice of Violation or a "Job Well Done" letter. The Notice of Violation form letter has all routine deficiencies clearly listed. The NBC 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.

~ *Specialized and Innovative Inspector Training Programs* – The NBC provides extensive training to new employees and continued training to existing personnel. Pretreatment, EMDA, and ESTA 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 OSHA HAZWOPER Training
- 8 Hour OSHA HAZWOPER Recertification Training
- OSHA Right to Know Training
- CPR/AED Training
- First Aid Training
- Spill Tracking Training
- Emergency Response Training
- Boom Deployment

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

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

Pretreatment personnel 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. The Assistant Pretreatment Manager and Principal Pretreatment Engineer work very closely with the engineers and technicians 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.

Weekly in box reviews are conducted of new members to ensure that they understand users' 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 and senior staff routinely conduct inspections with even the well trained inspector 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 Section developed a Pretreatment Inspector Feedback Form 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. Employees are graded on a scale from 0-Missed Completely to 3-Well Done. 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 by the NBC is the annual Spill Response and Tracking Drill. Pretreatment and EMDA 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 locate a source of "illegal discharge" and identify key manholes for the staff to follow. Senior staff assign a team leader, as is routinely done, to head the mock investigation to track the "illegal discharge" to the source. For the training drill, the newer employee is typically chosen to be the team leader.

Pretreatment staff participate in the annual Spill Response and Tracking Drill

The spill is tracked through the sewer system to the firm discharging the dye, 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 NBC Pretreatment staff.

~ *Pollution Prevention Referral Program* – During all Pretreatment regulatory inspections, the Pretreatment inspector routinely refers the user to the NBC Environmental, Safety & Technical Assistance Section (ESTA) for free technical assistance. All inspection summary letters and Notice of Violation letters also advise the user to obtain the free expertise of the NBC ESTA Section. 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 NBC inspection, nondomestic users are educated regarding all aspects of the NBC including the NBC Mission Statement, the purpose and types of all NBC inspections, and the Significant Non-Compliance (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 Significant Non-Compliance was impressively reduced in the Field's Point District from a high of 39.0% in 1992 to 4.9% in 2006, while the SIU Rate of SNC for Bucklin Point was reduced from a high of 44.8% in 1994 to 10.2% in 2006. The overall rate of SNC for all NBC SIUs for 2006 was 7.3%, a decrease from 8.6% observed in 2005. This is within the EPA level of 10% recommended for EPA Pretreatment Program Excellence recognition. These impressive reductions in the Rate of Significant User SNC are clearly attributable to improved user education and prompt resampling requirements for any effluent violation.

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

~ *Initial Inspection* – The initial pretreatment 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 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 Significant Industrial Users (SIU) and covers all the items shown in the Annual Inspection Checklist which is provided in ATTACHMENT VOLUME I, SECTION 3. The annual inspection is an announced inspection which 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 Significant Industrial User at least once every 12 months, as required by EPA regulation. The NBC typically conducts sampling of each SIU twice every 12 months.

~ *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.

~ *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.

From January 1, 2006 through December 31, 2006, the Pretreatment staff conducted 2,106 inspections of users, not including sampling visits. This represents a decrease of 200, or 8.7%, inspections over the number of facility inspections conducted by the Pretreatment staff the previous year. Of the 2,106 non-sampling inspections conducted by the Pretreatment staff, 495 were inspections of SIUs and 1,611 were inspections of non-significant users. The Pretreatment staff conducted 395 facility inspections of categorical users and 100 inspections of significant non-categorical industrial users in both districts, excluding sampling visits.

The Pretreatment staff conducted 31 regulatory compliance meetings with users during 2006. All facilities classified as SIUs were inspected at least twice during the 12 month report period with the exception of one firm which changed ownership in late 2006. The NBC Pretreatment Section satisfied and exceeded EPA requirements to inspect every significant industrial user at least once every 12-month period.

During the past year, EMDA staff conducted 265 industrial user sampling inspections of 122 industrial user facilities. Of the 265 sampling inspections, 244 sampling inspections were of significant users and 47 sampling inspections were of non-significant users. There were 233 sampling inspections of 85 categorical industries and 63 sampling inspections of 25 significant non-categorical users.

During 2006, the EMDA Section sampled every SIU at least once within the 12-month period required by EPA Regulations. In fact, all SIUs were sampled at least twice in 2006, with the exception of one firm that ceased process operations without adequate prior notification in early 2006. One sample was collected from this facility prior to it closing. Many SIUs were sampled more than twice due to effluent violations observed at the firms. TABLE 8 summarizes the status of each firm that was not sampled or inspected at least twice in 2006 by the NBC.

TABLE 8
Summary of SIUs Sampled or Inspected Less than Twice in 2006

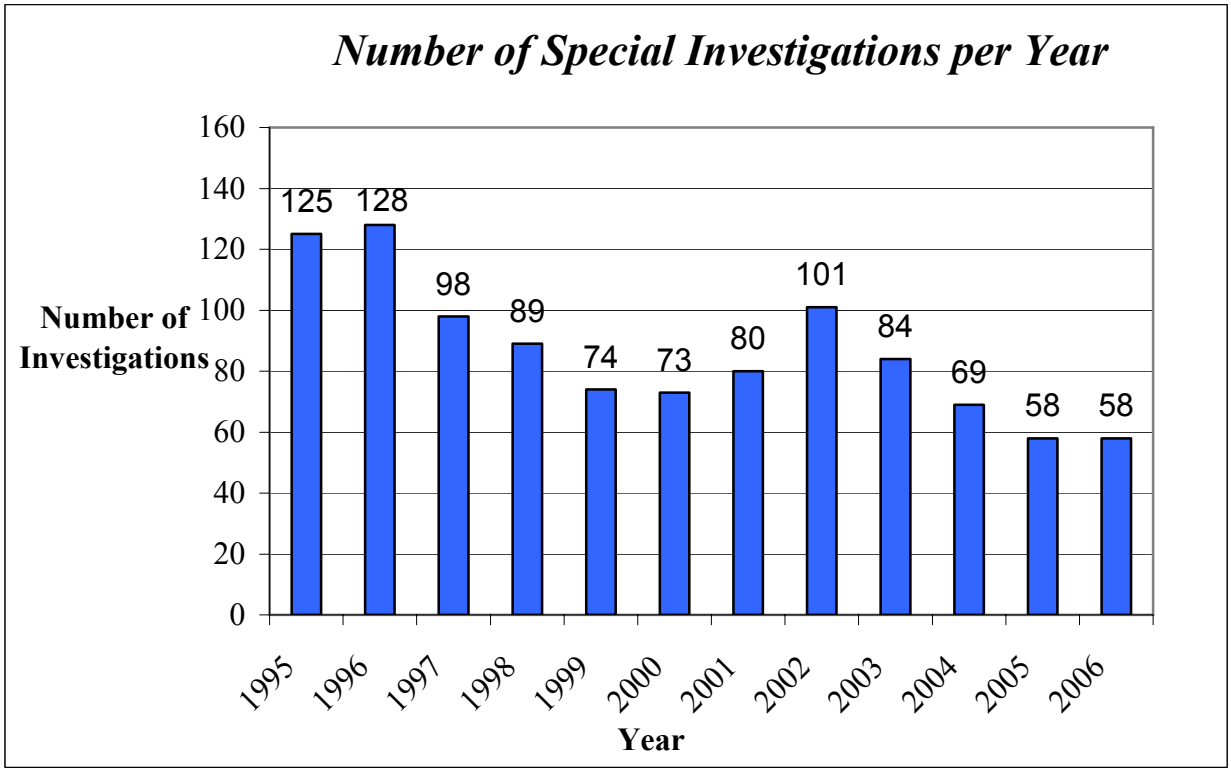
COMPANY NAME	2006 SAMPLE & INSPECTION SUMMARY	EXPLANATION
Field's Point District		
C&C Rhode Island, LLC	1 inspection only	Firm changed ownership in late 2006.
Bucklin Point District		
CHN Anodizing – American Metals	1 sample only	Firm ceased process operations without prior notification in early 2006. One sample was collected from the firm's batch tank prior to closing.

All NBC SIUs with discharges were sampled at least once in 2006, and were sampled by the NBC in accordance with the EPA regulations to sample each SIU every 12 months. A summary of the number of types of inspections performed by the NBC this reporting period is provided in TABLES 3 and 4, the Pretreatment Performance Summary Sheets, which are contained in CHAPTER I of this report. A list of each NBC sampling and nonsampling user inspection and the inspection date is provided in ATTACHMENT VOLUME II, SECTION 2.

Emergency or Special Investigations

Over the past year, NBC Pretreatment staff investigated approximately 58 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 2006 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 1995.

FIGURE 6



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 1990s. This is attributed to better education of users regarding spill prevention practices and overall environmental awareness by industry.

FIGURE 7

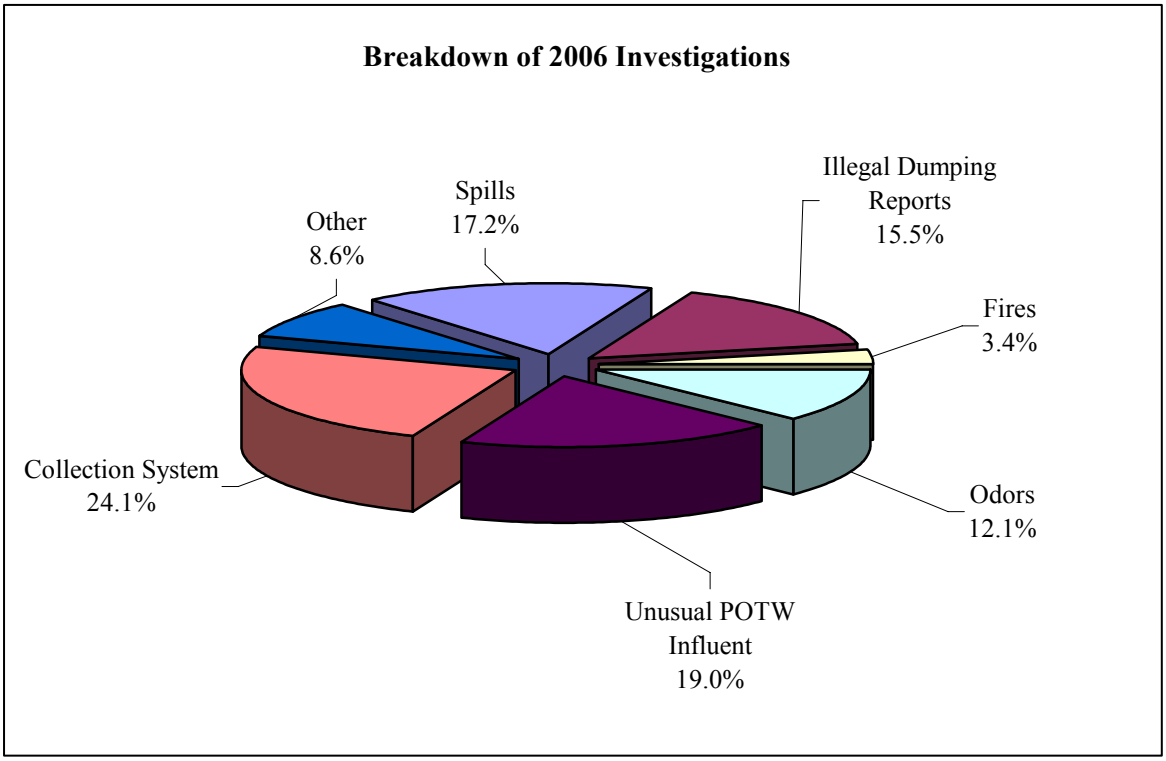


FIGURE 7 is a graphical breakdown of the types of investigations conducted in 2006. As can be seen from the graph, the majority of Pretreatment special investigations result from reports from the Interceptor Maintenance Section of blockages and other unusual circumstance in the sewer system, 24.1%. Of the 58 special investigations, there were nine reports of unpermitted discharges or illegal dumping, 15.5% of all investigations reported.

There were ten investigations of gasoline, fuel, oil and/or chemical spills, ten reports of grease discharges and blockages in sewer lines, and seven odor complaint investigations. These investigations often require frequent follow-up activities, subsequent inspections and clean-up activities, and often result in the initiation of enforcement actions by the NBC. Numerous follow-up inspections were required as a result of these initial 58 investigations. Those NBC investigations of major concern and interest to the NBC over the past year are described in the following paragraphs:

Spills

During 2006, Pretreatment staff investigated ten spills within the NBC service districts, five in the Field's Point district and five in the Bucklin Point district. Of the ten investigations, six were in response to oil or fuel spills, and four were in response to chemical spills.

The oil and fuel spills varied in size from a few gallons of gasoline to approximately 50 gallons of oil when a tank was overfilled. All of these spills occurred outdoors. The spilled oil and fuel from four of these events discharged to catch basins. The catch basins were cleaned out by contractors. The spilled oil and fuel from the remaining two events spilled onto the ground and was also cleaned up by contractors. The spilled oil and fuel from each of these events did not impact the NBC treatment facilities.

NBC Pretreatment staff respond to a soybean oil spill at Bunge North America (East)

NBC staff responded to four incidents of chemical spills in 2006. All four spills occurred at permitted industrial users and did not adversely affect the NBC treatment facilities. The first two spills occurred at Bunge North America (East) in Pawtucket which processes food grade oils and grease. The first incident occurred when there was a release of ammonia gas. Water was sprayed on the leaking equipment to control vapors. Some of this wastewater did overwhelm the firm's spill control facilities. However, approximately 50,000 gallons was contained at the facility and treated. During this event, several hundred gallons of vegetable shortening spilled when the building was evacuated. This material was contained at the facility and did not impact the sewer system. The second spill at Bunge North America (East) occurred when a soybean oil storage tank was over filled. The mandated spill control measures were in place and contained most of the material. However, some of the oil overflow was blown over the containment wall. The firm used absorbent materials and skimmer trucks to contain the spilled material. The spilled material from this event did not impact the NBC sewer system. The third chemical spill occurred at KIK Custom Products, Inc. in Cumberland, which manufactures household and personal hygiene products. The firm spilled 1,000 gallons of air freshener of which the main ingredient was a synthetic isoparaffinic hydrocarbon. The material discharged to the sewer system via the firm's pretreatment system but did not impact the Bucklin Point plant. The fourth chemical spill occurred at Herff Jones, Inc. in Providence which conducts metal finishing operations. A chemical release occurred when two incompatible chemicals were accidentally mixed together. The spilled material was contained at the facility and did not discharge to the sewer.

Pretreatment staff respond to all reports of spills to ensure that prohibited substances do not enter NBC facilities or Narragansett Bay. The appropriate local and/or state authorities are contacted by the NBC when it is determined that a spill impacts systems regulated by other agencies.

Restaurant Related Grease Investigations

During the past year Pretreatment staff responded to a total of eight grease related investigations. There were seven investigations conducted in Field's Point District and one investigation conducted in Bucklin Point. The eight grease investigations conducted by the Pretreatment Section, were associated with food preparation operations. All food preparation facilities upstream of manholes where grease was observed were investigated. These investigations resulted in six previously unpermitted facilities obtaining Wastewater Discharge Permits.

Illegal Dumping & Unpermitted Discharge Investigations

The NBC Pretreatment Section investigates all reports of illegal dumping and unpermitted discharges into the sewer system, storm drain system, and/or rivers. Over the past year pretreatment personnel have investigated nine reports of illegal dumping or unpermitted discharges within the Field's Point and Bucklin Point Districts. Two of the nine investigations involved illegal and/or unpermitted discharges into the Moshassuck River. The investigations were in response to discharges from a storm water outfall observed during dry weather. Pretreatment staff tracked the discharge to two buildings and worked with the facilities to mitigate the discharge.

Pretreatment staff investigate an illegal discharge

The remaining seven reports of illegal dumping were of various materials. Two of the reports were of raw sewage discharging to catch basins. One report was from a company in Providence that had an internal blockage causing raw sewage to discharge through a plumbing cleanout. The company cleared the blockage and ceased the discharge. The second report was of raw sewage discharging to a storm drain in Pawtucket. The storm drain was inspected and cleaned out by the City of Pawtucket. One of the reports of illegal dumping was of a company conducting barrel washing operations without a permit. The company was instructed to apply for a permit or cease the operation. The company opted to cease barrel washing operations. One of the reports of illegal dumping was of a restaurant dumping grease to a catch basin. An inspection of the catch basin showed no evidence of grease. The restaurant was instructed to handle grease laden waste properly in accordance with its permit. One of the reports of illegal dumping was of oil-based asphalt sealer discharging to a catch basin from a residential driveway. The material was contained the catch basin and did not impact the sewer system. The remaining two reports, one of paint buckets being washed out to a catch basin and one of swimming pool backwash discharging to a catch basin were unfounded. None of the incidents of illegal discharges had an adverse impact on the treatment facilities.

Pass-through and Interference

During 2006 the NBC Pretreatment Section conducted 58 special or emergency investigations within the Field's Point and Bucklin Point districts. Over 51.7%f all investigations involved either an unusual influent to the Bucklin Point or Field's Point treatment facilities, illegal dumping, or spills. The most common type of emergency investigation was reports of blockages and other problems in the collection system, 24.1% all investigations.

The next most common types of investigations were illegal dumping and/or unpermitted discharges with nine investigations and spills with ten investigations. These investigations involved primarily oils, gasoline, and grease either being intentionally dumped or accidentally spilled and discharges to rivers.

All reports of spills, dumping activities, unusual influents, and other related incidents during 2006 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 investigated during 2006 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 team to control the discharge of toxic and nuisance pollutants.

IV. COMPLIANCE MONITORING

Compliance Monitoring

The Narragansett Bay Commission utilizes two types of monitoring to determine user 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 monitoring 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 standards as demonstrated by self-monitoring required under the terms of a permit or by NBC sampling results. Once the user has demonstrated full compliance during four consecutive sampling dates, 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 40 CFR §403 and analytical techniques specified in 40 CFR §136. Results must be submitted with a properly completed Self-Monitoring Compliance Report (SMCR) form. The SMCR form 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 form. The SMCR form 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 form 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 Self-Monitoring Compliance Report form is provided in ATTACHMENT VOLUME I, SECTION 3.

In 1993, the Pretreatment Staff developed the Twenty-Four 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 Twenty-Four Hour Violation Notification Fax form is provided in ATTACHMENT VOLUME I, SECTION 3.

Samples taken 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 treated on a batch mode 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 sample results are evaluated for compliance with the NBC's discharge limitations shown in TABLE 9. This table indicates the discharge standards that must be maintained by users located in the Field's Point and Bucklin Point drainage 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 wastestream formula.

In addition to regular wastewater sampling, many industrial users, including all electroplaters and metal finishers, are required to continuously record the pH of the effluent discharged from their firm. These users are required to file 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 mode 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

NBC EMDA personnel conduct compliance monitoring of industrial and commercial facilities to assess the 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 document. 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 the NBC monitoring personnel conducting the sampling event 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 9

NBC FIELD'S POINT EFFLUENT DISCHARGE LIMITATIONS*
(Providence, North Providence, Johnston, small sections of Lincoln and Cranston)

Parameter	Maximum Daily (Composite daily for 1 day)	Average (10 day)
Cadmium (Total)	0.11	0.07
Chromium (Total)	2.77	1.71
Copper (Total)	1.20	1.20
Cyanide (Total)	0.58	0.58
Lead (Total)	0.60	0.40
Mercury (Total)	0.005	0.005
Nickel (Total)	1.62	1.62
Silver (Total)	0.43	0.24
Zinc (Total)	2.61	1.48

Parameter	Limitation (Max.)
Total Toxic Organics (TTO)	2.13
Biochemical Oxygen Demand (BOD)	300.00**
Total Suspended Solids (TSS)	300.00**
Total Oil and Grease (Fats, Oil and Grease)	125.00
Oil and Grease (Mineral Origin)	25.00
Oil and Grease (Animal/Vegetable Origin)	100.00
pH range (at all times)	5.0 - 11.0 standard units

NBC BUCKLIN POINT EFFLUENT DISCHARGE LIMITATIONS*
(Pawtucket, Central Falls, Lincoln, Cumberland, Rumford Section of East Providence, and the Eastern Section of Smithfield)

Parameter	Maximum Daily (Concentration Limit mg/l)	Monthly Average (Concentration mg/l)
Arsenic (Total)	0.20	0.10
Cadmium(Total)	0.11	0.07
Chromium (Total)	2.77	1.63
Copper (Total)	1.20	1.20
Cyanide (Total)	0.50	0.50
Lead (Total)	0.69	0.29
Mercury (Total)	0.06	0.03
Nickel (Total)	1.62	1.62
Selenium (Total)	0.40	0.20
Silver (Total)	0.40	0.20
Tin (Total)	4.00	2.00
Zinc (Total)	1.67	1.39

Parameter	Limitation (Max.)
Total Toxic Organics (TTO)	2.13
Biochemical Oxygen Demand (BOD)	300.00**
Total Suspended Solids (TSS)	300.00**
Total Oil and Grease (Fats, Oil and Grease)	125.00
Oil and Grease (Mineral Origin)	25.00
Oil and Grease (Animal/Vegetable Origin)	100.00
pH range (at all times)	5.0 - 11.0 standard units

* **All limitations are in units of mg/l unless otherwise specified.**

** **Exceeding these limitations may be permitted but exceedance will be subject to surcharge in accordance with rates approved by the Public Utilities Commission and R.I.G.L. §39-1-1-1 et seq.**

The EMDA Program utilizes many controls to insure the legal integrity of the samples collected for compliance and enforcement monitoring. Quality Assurance and Quality Control 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. These bottles are replaced annually. Preservatives purchased are reagent grade with ultra low levels of impurities.

Laboratory staff entering data into LIMS

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 Standard Operating Procedures Manual is kept in each NBC EMDA field laboratory at all times for reference. The procedures include specific information relative to the types of chemicals used, such as phosphate free detergents, de-ionized water, types and strengths of acids, and solvents. EMDA sampling equipment and protocols were modified several years ago 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, which is performed twice a year. 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 lab with the samples that are collected with that sampler. In addition, the Nanopure© Deionized Water System used by the program is checked each week at the ppb level to ensure the integrity of the final de-ionized 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's results. The user is notified of the NBC's results as soon as they are reported by the NBC laboratory.

NBC Lab Staff Member Performing Pollutant Analysis

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 sample users without them being aware that sampling is being conducted.

The majority of samples collected in 2006 by the EMDA personnel were analyzed at the NBC laboratory located at Fields Point. The NBC Bucklin Point and Field's Point Laboratories were consolidated as of November 2001. A state of the art, full service wastewater laboratory was constructed to combine the two NBC labs and to accommodate new EPA regulations that call for more sensitive detection of various materials contained in wastewater.

The EPA has outlined several analyses that will 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. An area of the lab is classified as being a Class 1000 Clean Room. 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.

There are separate areas of the clean room 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 1.4 parts per trillion (ppt). The detection limit is expected improve as protocols for this new equipment are further refined. The laboratory's 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 ultratrace multi-elemental analysis. The method used is EPA Method 200.8 for trace metals at EPA Water Quality Criteria levels.

The lab facility has a microbiology lab dedicated to 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. This is important to control contamination concerns. To accommodate the many research projects conducted by NBC and to satisfy new EPA regulations, it is vital to properly maintain and continuously improve the NBC state of the art laboratory.

NBC Laboratory Building

Between the period of January 1, 2006 through December 31, 2006, NBC personnel conducted 287 sampling inspections of industries located within the NBC Field's Point and Bucklin Point Districts, resulting in the collection of 287 composite and grab samples. Of these 287 samples, 247 were in full compliance with the NBC standards and 40 were not in compliance, resulting in a user compliance rate of 86.1% based upon NBC analyses, a slight decrease from the 88% rate of compliance reported for 2005 NBC monitoring results.

NBC personnel collected samples from all significant categorical and non-categorical users that discharged into the NBC sewer system during 2006. In fact, most SIUs were sampled at least twice in 2006, with the exception of one user that could only be sampled once due to the firm ceasing process operations without adequate prior notification. Additional information regarding this firm is provided in CHAPTER III. The NBC satisfied all EPA requirements regarding sampling SIUs at least once every twelve months, as all NBC significant users with discharges were sampled in 2006.

The NBC conducted sampling of 110 SIUs and 12 non-significant user facilities in the two NBC districts during 2006. Of the 122 total facilities sampled by the NBC, 85 facilities were classified as categorical industries at the time of the sampling event. There were 25 firms classified as significant non-categorical facilities when sampled by the NBC during 2006.

Computer printouts of the past year's 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 indicated by a "Y" 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 2,620 wastewater monitoring reports for the period from January 1, 2006 through December 31, 2006. For this period, the industrial and commercial users actually submitted 3,327 sample results, 3,187 of which were in full compliance with the NBC and EPA standards. This is a user self monitoring report rate of compliance of 95.8%. The users submitted 27.0% more analyses than required by permits due to the NBC's requirement to conduct weekly sampling once non-compliance has occurred.

TABLE 10 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, 2006 through December 31, 2006. TABLE 11 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 10 and 11 is shown graphically in FIGURES 8 and 9. TABLE 12 is a comparison of the percent compliance for both self-monitoring and NBC sampling results for the aforementioned period. This table clearly 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 96.2%, NBC results indicate only an 84.5% compliance rate for this class of users.

TABLE 10

Narragansett Bay Commission
Field's Point and Bucklin Point Districts

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

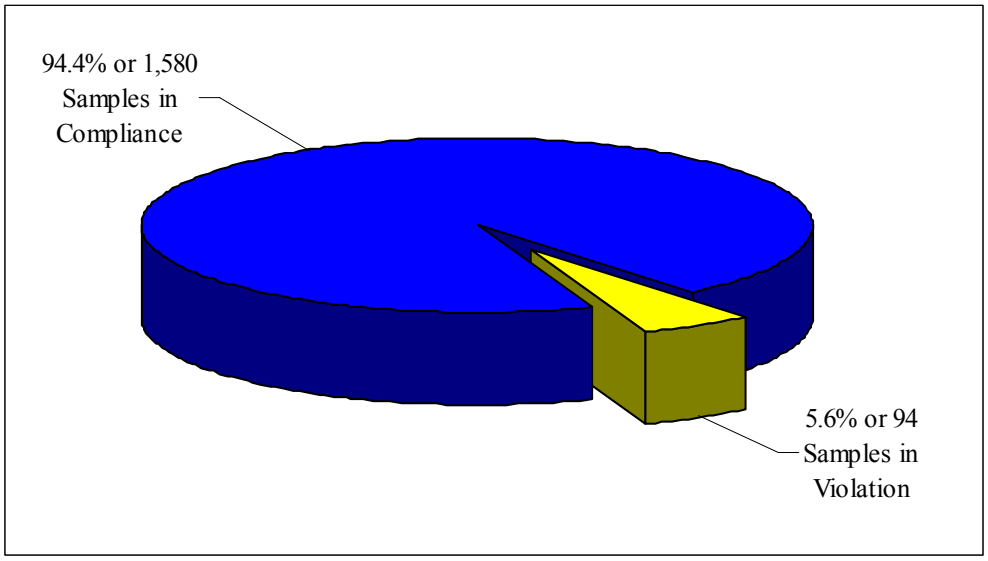
January 1, 2006 - December 31, 2006

User Self-Monitoring Results	Categorical	Non-Categorical	Totals
Total Samples Required	**1,144**	**1,476**	**2,620**
Total Samples Submitted	**1,474**	**1,853**	**3,327**
Total Samples In Compliance	**1,430**	**1,774**	**3,187**
Total Samples Not In Compliance	**61**	**79**	**140**
NBC Monitoring Results			
Total Samples Collected	**200**	**87**	**287**
Total Samples In Compliance	**167**	**80**	**247**
Total Samples Not In Compliance	**33**	**7**	**40**
All Results			
Total Samples Reviewed	**1,674**	**1,940**	**3,614**
Total Samples With Violations	**94**	**86**	**180**
Total Samples In Compliance	**1,580**	**1,854**	**3,434**
Total Users Sampled	**85**	**507**	**592**
Total Users With Violations	**40**	**42**	**82**
Total Users Without Violations	**45**	**465**	**510**

FIGURE 8

2006 Rates of Compliance for Categorical and Non-Categorical Users
Field's Point & Bucklin Point Districts

Categorical User Analyses
Total Number of Samples = 1,674



Non-Categorical User Analyses
Total Number of Samples = 1,940

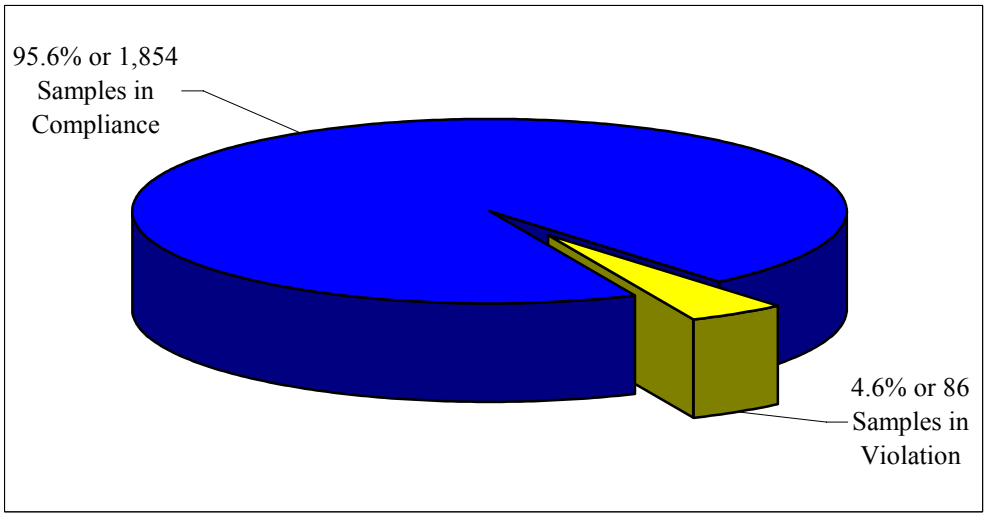


TABLE 11

Narragansett Bay Commission
Field's Point and Bucklin Point Districts

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

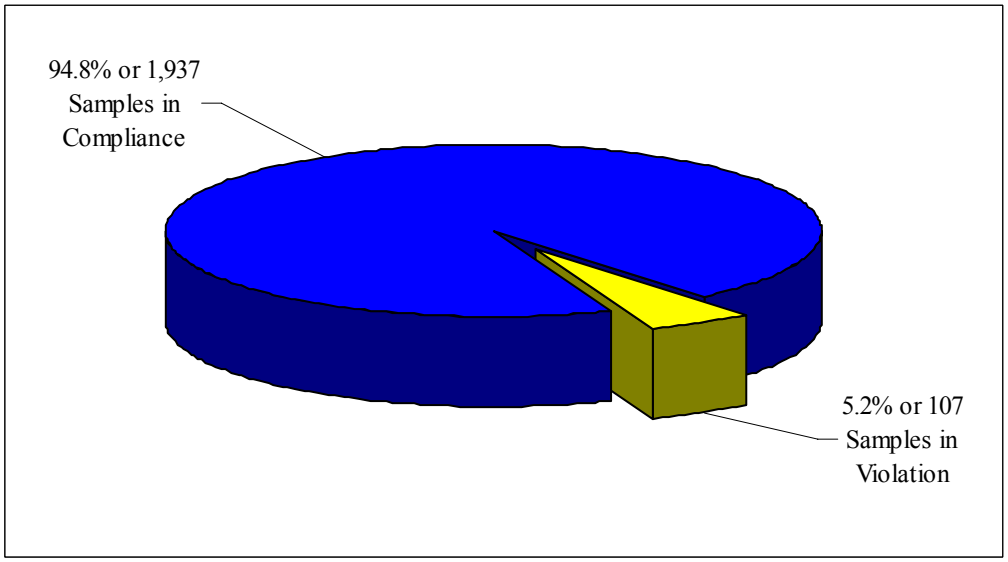
January 1, 2006 - December 31, 2006

User Self-Monitoring Results	Significant Users	Non-Significant Users	Totals
Total Samples Required	**1,358**	**1,262**	**2,620**
Total Samples Submitted	**1,776**	**1,537**	**3,327**
Total Samples In Compliance	**1,709**	**1,464**	**3,187**
Total Samples Not In Compliance	**67**	**73**	**140**
NBC Monitoring Results			
Total Samples Collected	**265**	**22**	**287**
Total Samples In Compliance	**225**	**22**	**247**
Total Samples Not In Compliance	**40**	**0**	**40**
All Results			
Total Samples Reviewed	**2,044**	**1,570**	**3,614**
Total Samples With Violations	**107**	**73**	**180**
Total Samples In Compliance	**1,937**	**1,497**	**3,434**
Total Users Sampled	**110**	**482**	**592**
Total Users With Violations	**47**	**35**	**82**
Total Users Without Violations	**63**	**447**	**510**

FIGURE 9

2006 Rates of Compliance for Significant and Non-Significant Users Field's Point & Bucklin Point Districts

Significant User Analyses
Total Number of Samples = 2,044



Non-Significant User Analyses
Total Number of Samples = 1,570

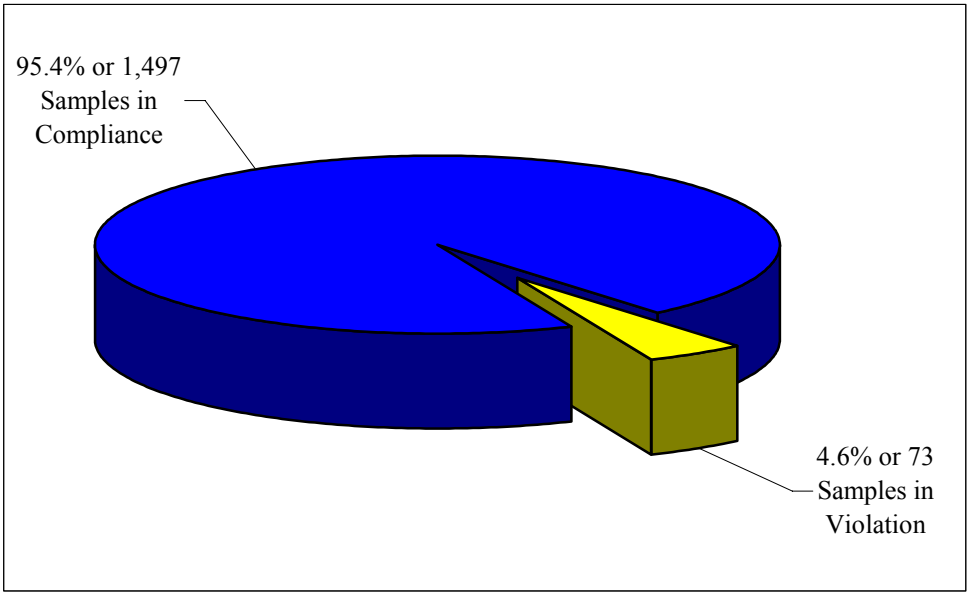


TABLE 12

Narragansett Bay Commission
Field's Point and Bucklin Point Districts

Comparison of Compliance Rates for
Self-Monitoring and NBC Sampling Results

January 1, 2006 - December 31, 2006

	User Self-Monitoring	NBC Monitoring	All Results
Significant Users			
Compliance Rate	**96.2%**	**84.5%**	**94.8%**
Non-Compliance Rate	**3.8%**	**15.5%**	**5.2%**
Non-Significant Users			
Compliance Rate	**95.3%**	**100.0%**	**95.4%**
Non-Compliance Rate	**4.7%**	**0%**	**4.6%**
Categorical Users			
Compliance Rate	**95.7%**	**92.0%**	**95.6%**
Non-Compliance Rate	**4.3%**	**8.0%**	**4.4%**
Non-Categorical Users			
Compliance Rate	**95.7%**	**92.0%**	**95.6%**
Non-Compliance Rate	**4.3%**	**8.0%**	**4.4%**
All Users			
Compliance Rate	**95.8%**	**86.1%**	**95.0%**
Non-Compliance Rate	**4.2%**	**13.9%**	**5.0%**

This data review indicates a decrease in the overall SIU compliance rate based upon user monitoring and NBC results when compared to the previous reporting year, as the overall SIU rate of compliance decreased from 96.2% in 2005 to 94.8% in 2006. There was a 11.9% 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 was even greater at 12.4%.

User self monitoring reports submitted by categorical users indicated full compliance, 95.9% of the time, while NBC monitoring found categorical users to be in compliance for only 83.5% of NBC sampling events. These differences in NBC and user monitoring compliance rates clearly indicate that some users may not be properly collecting samples or reporting results that are 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.

TABLE 13 provides a comparison of the compliance rates for different classes of users located in the Field's Point and Bucklin Point Districts. The compliance rates for each class of users in both districts were very similar. The overall rate of compliance for Field's Point users was 95.5%, while it was 94.3% in the Bucklin Point District.

The Fields Point categorical users were in full compliance for 95.1% of the sampling events at their facilities in 2006. This compliance rate decreased slightly from 96.0% in 2005. Significant Industrial Users in the Bucklin Point District had a rate of compliance of 94.0%, slightly less than the 95.4% SIU compliance rate observed in the Field's Point District.

The overall 2006 rate of SIU compliance in both districts was 94.8%, a decrease from the compliance rate observed in 2005 of 96.2% for this class of user. As can be seen from TABLE 13, non-categorical users in Field's Point had the highest rate of compliance, 95.8%, while the categorical users located in the Bucklin Point District had the highest rate of non-compliance, 6.6%. The rate of user compliance for all users in both districts remained the same in 2006 compared to 2005, at 95.0%.

TABLE 14 provides an analysis of the percentage of firms in each user class with perfect compliance records for effluent monitoring occurring during 2006. This analysis indicates that 52.9% of categorical users and 57.3% of significant users had perfect compliance records for all effluent parameters and sampling events. Non-significant users had the highest percentage of firms with perfect compliance records, 92.7%. During 2006, of the 592 firms that sampled their wastestream, 510 firms or 86.1% 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 1995 is presented in FIGURE 10. The rate of all users with perfect compliance for effluent monitoring has shown marked improvement over the years. In 1995 the overall rate of compliance for all users was 58.7% compared with 86.1% in 2006.

The increase in user compliance rates can be attributed to educational efforts regarding EPA and NBC requirements by Pretreatment and Environmental, Safety & Technical Assistance (ESTA) staff. In addition to educating users, the ESTA 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.

FIGURE 10
Rate of Perfect Compliance with Effluent Parameters for All Users, Significant, and Categorical Users

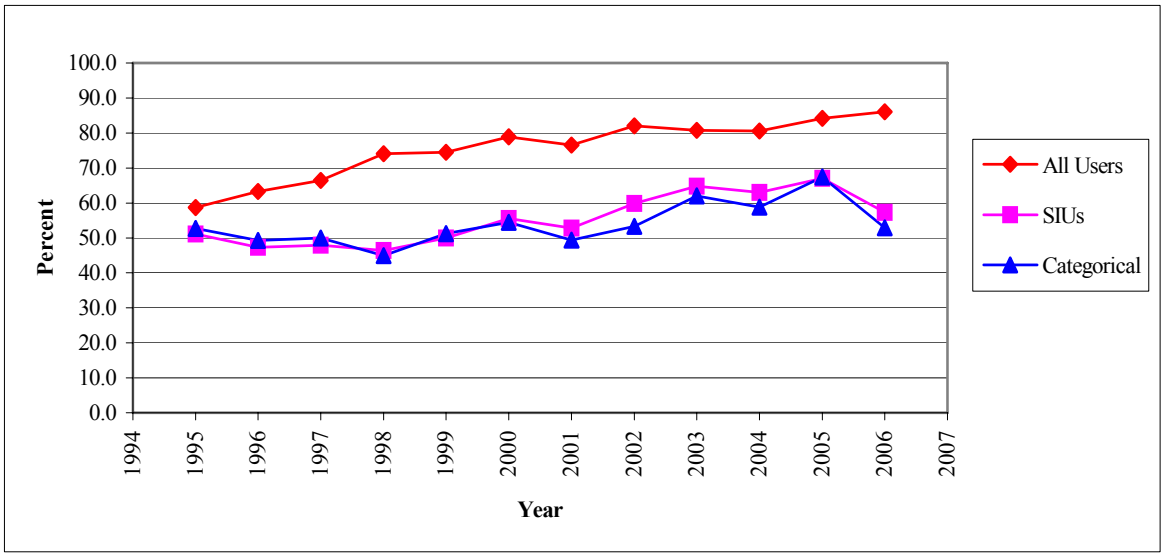


TABLE 13

Narragansett Bay Commission

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

January 1, 2006 - December 31, 2006

	Field's Point District	Bucklin Point District	Both Districts
Significant Users			
Compliance Rate	**95.4%**	**94.0%**	**94.8%**
Non-Compliance Rate	**4.6%**	**6.0%**	**5.2%**
Non-Significant Users			
Compliance Rate	**95.6%**	**94.9%**	**95.4%**
Non-Compliance Rate	**4.4%**	**5.1%**	**4.6%**
Categorical Users			
Compliance Rate	**95.1%**	**93.4%**	**94.4%**
Non-Compliance Rate	**4.9%**	**6.6%**	**5.6%**
Non-Categorical Users			
Compliance Rate	**95.8%**	**95.3%**	**95.6%**
Non-Compliance Rate	**4.2%**	**4.7%**	**4.4%**
All Users			
Compliance Rate	**95.5%**	**94.3%**	**95.0%**
Non-Compliance Rate	**4.5%**	**5.7%**	**5.0%**

TABLE 14

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, 2006 - December 31, 2006

	% Firms Without Effluent Violations*	% Firms With Effluent Violations
Categorical Users	**52.9%**	**47.1%**
Non-Categorical Users	**91.7%**	**8.3%**
Significant Users	**57.3%**	**42.7%**
Non-Significant Users	**92.7%**	**7.3%**
All Users	**86.1%**	**13.9%**

***Excludes pH Parameter Violations.**

Of the 3,614 analytical reports reviewed during 2006, there were 180 reports that indicated non-compliance with one or more of the NBC or EPA effluent parameters (excluding pH). Of these 180 non-compliant sample reports, 107 analyses were of samples collected from 44 significant industrial user facilities and 73 non-compliant samples were collected from 35 non-significant facilities.

Four of the 44 Significant Industrial Users that had effluent violations during 2006 had five or more effluent parameter violations during the report period. In fact, of the 8,942 various pollutant parameters tested for Significant Industrial Users, these four firms were responsible for 38 parameter violations out of a total of 110 parameter violations reported by all significant users during 2006. These four firms accounted for 34.5% of all SIU parameter violations over the past year. The NBC has initiated enforcement actions against all of the following firms, and escalated enforcement actions may be pending against some of these users at this time. A listing of each of these four firms and the current status of each of these users is provided in TABLE 15.

TABLE 15

Narragansett Bay Commission

Status of Significant Users With 5 or More Parameter Violations

January 1, 2006 - December 31, 2006

Company Name	Number of Parameter Violations	User Status
KIK Custom Products, Inc.	22	This Bucklin Point pharmaceutical manufacturing firm has experienced one acetone violation, two zinc violations, five total toxic organics violations, and fourteen total oil and grease violations. The acetone, one total toxic organics, and one total oil and grease violations were from NBC sampling events. The firm attributes the zinc and total oil and grease violations to oil-bearing and zinc-bearing products, and has since sent oil-bearing and zinc-bearing waste off-site for disposal. The firm has given no explanation for the acetone and total toxic organics violations. The firm has completed resampling for acetone, zinc, and total toxic organics parameter violations. Resampling for total oil and grease violations is in progress.
Monarch Metal Finishing Co.	5	This Field's Point electroplating firm experienced five cyanide violations. One cyanide violation was from a NBC sampling event. The firm attributes the violations to upstream contamination in two rinse tanks, and has since routed the rinse tanks to a tank with residual chlorine to ensure adequate treatment. The firm has completed resampling for the cyanide violations.

TABLE 15
(continued)

Narragansett Bay Commission

Status of Significant Users With 5 or More Parameter Violations

January 1, 2006 - December 31, 2006

Company Name	Number of Parameter Violations	User Status
Providence Chain Company	6	This Field's Point metal finishing firm has experienced four cyanide violations, one silver violation, and one copper violation. Two of the cyanide violations and the copper violation occurred during a NBC sampling event. The firm attributes the violations to poor rinsing techniques and increased silver processing operations. The firm completed resampling for the silver violation.
Vitrus, a Division of Evergy, Inc.	5	This Bucklin Point metal finishing firm experienced five nickel violations. The firm attributes the violations to insufficient polymer levels in the floc tank. Resampling for the aforementioned violations has been completed and this firm is currently in compliance with effluent discharge limitations.

2006 Industrial User Compliance Status Summary

During 2006, 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 were issued for all instances of non-compliance. A total of 2,382 Notice of Violation letter were issued in 2006. A table detailing each type of Notice of Violation letter issued to each firm can be found in ATTACHMENT VOLUME II, SECTION 8. A summary of the monthly compliance status for Significant Industrial Users can be found in ATTACHMENT VOLUME II, SECTION 5. A summary of NBC Enforcement Actions including the penalties assessed is also provided in Chapter VI.

Industrial Surveillance Manhole Monitoring Program

In June 1993, a new NBC Section, EMDA, was created to conduct user and manhole sampling as well as analyze data, determine long and short term loading trends and conduct other special studies. This sampling had previously been conducted by Pretreatment staff. This change was facilitated by internal restructuring which allowed for more efficient Pretreatment and Monitoring Programs to be implemented through the specialization of personnel duties.

During 2006, EMDA staff conducted sampling of an average of six industrial manholes each week. The automatic samplers for industrial manholes are typically programmed to take a grab sample every 15 minutes over an approximately 32 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 32 hour sampling period. At the lab, EMDA technicians check 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 non-compliance, the Pretreatment Section attempts to determine the possible source of these non-compliant discharges. Manhole monitoring results continue to indicate declines in the quantities of toxics discharged into the sewer system.

During 2006, the NBC collected a total of 341 industrial manhole samples from manholes located throughout the two NBC sewer districts. In addition to collecting industrial manhole samples, NBC collected 39 samples from residential manholes, and 11 samples from manholes to support sewer line cleaning efforts. There was a total number of 391 samples collected from manholes in 2006. This is an increase from the 356 manhole samples collected in 2005. An additional 22 manholes were sampled in both Field's Point and Bucklin Point, however, due to low flow conditions or mechanical problems, effluent could not be collected by the automatic samplers.

The NBC staff collected 190 samples from industrial surveillance manholes located in the Bucklin Point District. The compliance rate for industrial manhole samples for the Bucklin Point District was 90.0%. NBC staff collected 151 samples from industrial manholes located in the Field's Point District. The rate of compliance for industrial manhole samples in the Field's Point District was 87.4%. These results show that at various times and in several locations, NBC discharge standards may have been violated. A discussion of the results of sanitary monitoring is provided in CHAPTER V of this report and a discussion of the manholes with elevated concentrations of toxics is provided in the following paragraphs. Industrial surveillance and sanitary manhole

monitoring results for the past year are provided in ATTACHMENT VOLUME II, SECTION 7.

INDUSTRIAL SURVEILLANCE MANHOLE VIOLATIONS

FIELD'S POINT DISTRICT

Industrial Surveillance Manhole 07

Industrial Surveillance Manhole 07 is located on Ellenfield Street in Providence which is downstream of numerous facilities, many of which are metal finishers. On January 1, 2006, June 30, 2006, and December 29, 2006 the concentration of copper was in excess of the NBC discharge limitation of 1.20 ppm. In addition, on June 30, 2006 the concentration of silver was in excess of the NBC discharge limitation of 0.43 ppm. All permitted companies in the area were inspected and manholes up and downstream of suspected companies were sampled to determine the potential source. Continued industrial manhole monitoring will be conducted by NBC personnel in 2007 to monitor the compliance status of this area.

Industrial Surveillance Manhole 10A

Industrial Surveillance Manhole 10A is located downstream of Providence Chain Company on Georgia Avenue in Providence, which conducts metal finishing operations. On March 24, 2006 the concentrations of chromium, copper, and lead were in excess of the NBC discharge limitations of 2.77 ppm, 1.20 ppm, and 0.60 ppm respectively. The company as well as other facilities upstream were inspected. Continued industrial manhole monitoring will be conducted by NBC personnel during 2007 to monitor the compliance status of this firm.

Industrial Surveillance Manhole 11A

Industrial Surveillance Manhole 11A is located on Virginia Avenue in Providence downstream of Monarch Metal Finishing Company, which conducts electroplating operations. On March 24, 2006 the concentration of chromium was in excess of the NBC discharge limitation of 2.77 ppm. The firm was inspected and the company investigated the source. Continued industrial manhole monitoring will be conducted by NBC personnel during 2007 to monitor the compliance status of this firm.

Industrial Surveillance Manholes 23A & B

Industrial Surveillance Manhole 23A is located on Public Street in Providence downstream of Ideal Plating and Polishing Inc., which conducts metal finishing operations. On August 18, 2006 the concentrations of cadmium, copper, and lead were in excess of the NBC discharge limitations of 0.11 ppm, 1.20 ppm, and 0.60 ppm respectively. The sample collected from the upstream manhole, Manhole 23B was in full compliance with NBC limitations. A Notice of Violation was issued to the firm and the firm was required to submit a report explaining the results. The company investigated the high metals concentrations but could not find the source. In addition, the firm was

inspected. Continued industrial manhole monitoring will be conducted by NBC personnel during 2007 to monitor the compliance status of this firm.

Industrial Surveillance Manholes 53B

Industrial Surveillance Manhole 53B is located on Plymouth Street in Providence upstream of Cannon & Brown Inc., which conducts electroplating operations. On March 3, 2006 the concentration of zinc was in excess of the NBC discharge limitation of 2.61 ppm. An investigation to determine the potential sources showed the area to be residential in nature. The source could not be determined. Subsequent monitoring of Surveillance Manhole 53B showed full compliance with NBC discharge limitations. Continued monitoring of this manhole will be conducted by NBC personnel during 2007 to monitor the compliance status.

Industrial Surveillance Manholes 70A & B

Industrial Surveillance Manhole 70A is located on River Avenue in Providence downstream of A&F Plating Company, Inc. and Universal Plating Company, Inc. Both facilities conduct metal finishing operations. On September 22, 2006 the concentrations of copper and cyanide were in excess of the NBC discharge limitations of 1.20 ppm and 0.58 ppm respectively. The upstream manhole, Manhole 70B, was in full compliance with NBC limitations. Both facilities were inspected. Continued industrial manhole monitoring will be conducted by NBC personnel during 2007 to monitor the compliance status of these firms.

Industrial Surveillance Manholes 94A & B

Industrial Surveillance Manhole 94A is located on Silver Spring in Providence downstream of JRB Associates Inc., which conducts metal finishing operations. On February 17, 2006, July 8, 2006, August 4, 2006, and December 22, 2006 the concentration cyanide was in excess of the NBC discharge limitation of 0.56 ppm. On July 8, 2006, August 4, 2006, and December 22, 2006 the concentration of copper was in excess of the NBC discharge limitation of 1.20 ppm. Notices of Violation were issued to the firm for each exceedance and the firm was required to submit reports explaining the results. The company attributed each of non-compliant results to operator error and incomplete treatment of a cyanide batch discharge in February 2006. Continued industrial manhole monitoring will be conducted by NBC personnel during 2007 to monitor the compliance status of this firm.

Industrial Surveillance Manhole 111A & B

Industrial Surveillance Manhole 111A is located on Railroad Avenue in Johnston downstream of both G. Tanury Company and of Hillview Auto Body. Industrial Surveillance Manhole 111B is located on Railroad Avenue in Johnston upstream of G. Tanury Plating Company and downstream of Hillview Auto Body. G. Tanury Company conducts electroplating operations and Hillview Auto Body conducts automotive repair operations. On April 14, 2006, the concentrations of chromium, copper and lead were in excess of the NBC discharge limitations of 2.77 ppm, 1.20 ppm, and 0.60 ppm respectively in Industrial Surveillance Manhole 111A. On April 14, 2006 the

concentrations of lead were in excess of the NBC discharge limitation of 0.60 ppm in Industrial Surveillance Manhole 111B. Both facilities were inspected. Subsequent monitoring of both surveillance manholes indicate full compliance with NBC discharge limitations. Continued industrial manhole monitoring will be conducted by NBC personnel during 2007 to monitor the compliance status of this area.

Industrial Surveillance Manhole 125A

Industrial Surveillance Manhole 125A is located on Industrial Lane in Johnston downstream of Tri-Jay Company, which conducts electroplating operations. On December 29, 2006 the concentration of copper was in excess of the NBC discharge limitation of 1.20 ppm. The company and facilities upstream on Industrial Lane were inspected. Continued industrial manhole monitoring will be conducted by NBC personnel during 2007 to monitor the compliance status of this area.

Industrial Surveillance Manhole 193A & B

Industrial Surveillance Manhole 193A is located on DeSoto Street in Providence downstream of J.C. Gorham, which conducts zero process wastewater discharge electroplating operations. Industrial Surveillance Manhole 193B is located on DeSoto Street in Providence upstream of this facility. On January 20, 2006 the concentration of copper was in excess of the NBC discharge limitation of 1.20 ppm in Surveillance Manhole 193A. On February 2, 2006 the line was in the process of being cleaned by the NBC Interceptor Maintenance staff. The material removed from Surveillance Manhole 193B was analyzed. The concentrations of copper, lead, silver, zinc and total oil and grease were in excess of the NBC discharge limitations of 1.20 ppm, 0.60 ppm, 0.43 ppm, 2.61 ppm and 1.25 ppm respectively. Monitoring of these manholes was temporarily suspended in early 2006. A buildup of material over the years may have been giving erroneous results. The line was to be fully cleaned however due to damage to the line, this could not be completed. The NBC is currently working with the City of Providence to get the issue resolved. Once resolved manhole monitoring will resume. J.C. Gorham continues to be inspected on a regular basis to monitor compliance.

BUCKLIN POINT DISTRICT

Industrial Surveillance Manhole 32A & B

Industrial Surveillance Manhole 32B is located on Patterson Avenue in Pawtucket downstream of CHN Anodizing which conducted anodizing operations. On February 10, 2006 and December 15, 2006 the concentration of nickel was in excess of the NBC discharge limitation of 1.62 ppm. The concentrations in the upstream manhole, Manhole 32A were in full compliance with NBC limitations. Notices of Violation were issued to the firm and the firm was required to submit a report for each incident. The firm moved out of the NBC district in December 2006.

Industrial Surveillance Manholes 36B & 37B

Industrial Surveillance Manholes 36B and 37B are located on Mineral Spring Avenue in Pawtucket downstream of Providence Metallizing Company Inc. which conducts electroplating operations. Continuous monitoring of these manholes indicated concentrations of chromium, copper, and nickel in excess of the NBC discharge limitations of 2.77 ppm, 1.20 ppm, and 1.62 ppm respectively. The exceedences occurred on April 4, 2006, April 7, 2006, June 19, 2006, June 20, 2006, October 9, 2006, October 11, 2006, October 27, 2006, and November 3, 2006. Notices of Violation were issues to the firm and the NBC is working closely with the firm to resolve this issue. In addition, the firm is in the process of upgrading its pretreatment system in order to reduce its water usage by a significant amount. Continued surveillance manhole monitoring will be conducted by NBC personnel during 2007 to monitor the compliance status of this firm.

Industrial Surveillance Manholes 41A

Industrial Surveillance Manhole 41B is located on Bacon Street in Pawtucket downstream of Bliss Manufacturing, Inc which conducts metal finishing operations. On July 21, 2006 the concentration of silver was in excess of the NBC discharge limitation of 0.40 ppm. A Notice of Violation was issued to the firm and the firm was required to submit a report explaining the results. The company attributed the non-compliant result to incomplete treatment of a batch discharge. Continued industrial manhole monitoring will be conducted by NBC personnel during 2007 to monitor the compliance status of this firm.

Industrial Surveillance Manhole 74

Industrial Surveillance Manhole 74 is located on Chace's Place in Central Falls downstream of Liberty Plating Company, Inc. which conducts electroplating operations. On June August 11, 2006, the concentration of copper was in excess of the NBC discharge limitation of 1.20 ppm. A Notice of Violation was issued to the firm and the firm was required to submit a report explaining the results. The company attributed the non-compliance to batch discharging a rinse tank that had a higher than normal concentration of copper. Continued industrial manhole monitoring will be conducted by NBC personnel during 2007 to monitor the compliance status of this firm.

V. NBC Impact Of Pretreatment Program On Control Of Toxics And Incompatible Waste

NBC Impact on the Control of Toxics and Incompatible Wastes

NBC's continuing goal is to improve receiving water quality by limiting the impact of Wastewater Treatment Facility effluent on Narragansett Bay. To this end, influent and effluent metals and cyanide loading data are used to provide a measure of the amount of industrial waste being discharged to the sewer system, as well as a means of quantifying the NBC's effectiveness at controlling and reducing the discharge of toxic pollutants into the collection system. The NBC has analyzed and tracked the toxic pollutant loading trends at its treatment facilities since the creation of the agency.

On December 31, 2001, both wastewater treatment facilities were issued updated RIPDES discharge permits. Of significant interest was the removal of several pollutants from the permit due to five years of data that had revealed discharge levels well below the detection limits or aquatic life criteria as it is applied to the NBC's receiving waters.

At Field's Point, the following parameters were removed from the permit:

- Cadmium
- Hexavalent chromium
- Lead
- Tetrachloroethylene
- 1,1,1-trichloroethane
- Trichloroethylene
- 1,2-dichloroethylene
- Methylene chloride
- Bis(2-ethylhexyl) phthalate

At Bucklin Point, pollutants were also removed from frequent monitoring due to historically low concentrations. The following parameters were removed from the Bucklin Point permit:

- Cadmium
- Tetrachloroethylene
- 1,1,1-Trichloroethane
- Trichloroethylene
- Dichloromethane

Monitoring of these pollutants continues through routine sampling and semi-annual priority pollutant scans. Data from these scans indicate that concentrations are either well below saltwater water quality criteria or not detectable in plant effluent.

The removal of a parameter from a RIPDES permit, or a downgrade to monitor only status, can be directly attributed to effective efforts by Environmental, Safety & Technical Assistance (ESTA), Pretreatment, Laboratory, Operations, and Environmental Monitoring and Data Analysis staffs. The timely collection of samples, low-level, trace analysis by NBC's Laboratory Section, effective regulation of industry by Pretreatment, ESTA technical assistance provided to industry, and effective treatment performed by the Operations Section staff are the key components of an efficient wastewater treatment organization.

The studies and results presented in this chapter deal with monitoring of the NBC treatment facilities, the sewer collection system, Significant Industrial Users (SIU) and the receiving waters of Narragansett Bay, conducted by the EMDA Section. Pretreatment works in conjunction with the EMDA, Laboratory, Operations, and Engineering Sections at the NBC to control toxics in the sewer system. To that end, EMDA conducts sampling of wastewater from its sources, throughout its collection and treatment systems, and ultimately to its final fate as either sludge or as treated effluent discharged into Narragansett Bay.

Sample Collection at the Wastewater Treatment Facilities

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

Toxic pollutant monitoring requirements include 24-hour composite sample collections for the analysis of copper, lead, mercury, nickel, silver, chromium, and zinc. Metals and cyanide measurements are required twice-weekly at both plants. During 2006, EMDA personnel collected all permit-required 24-hour composite samples of the waste streams at the two treatment facilities.

At Bucklin Point, composite samples are collected from both interceptors, the Blackstone Valley Interceptor (BVI) and the East Providence Interceptor (EPI), that bring wastewater to the plant. Previously, collections from BVI and EPI were made on a flow-paced schedule and analyzed independently, with the independent analytical results combined based on the flow percentages for the sample collection period after chemical analysis. The EMDA Section conducted a study during 2005 to determine whether combining these separate collections prior to analysis would improve accuracy of the analytical results. A substantial number of metals samples collected from EPI are below the detection limit of the NBC Laboratory's instrumentation. This is due to both low flow and the small number of industrial users in this portion of the Bucklin Point service district. The flow proportioned combination of the samples prior to analysis was investigated to determine whether the resultant sample would provide a more accurate influent concentration. Results from this study indicate that, for samples above the detection limits, there is no significant difference between the two methods. For samples that were routinely below the method detection limits, the combination of the samples improved the accuracy of analytical results. By providing more representative influent data, evaluation of plant performance at the Bucklin Point facility is more accurate, and the improved results can, in turn, be used to more easily fine tune processes within the wastewater treatment facility.

Twice-weekly influent cyanide samples are collected at the two interceptor locations and are composites of nine separate grab samples at each location. These samples are mixed flow proportionally in the same way as the metals and conventional pollutant composite collections. This sampling change took effect on September 26, 2005.

Field's Point influent samples are collected on a flow-paced basis at the single interceptor that feeds the facility, after bar screening and prior to grit removal tanks. Final effluent sample collections are flow-paced at both facilities downstream of all treatment processes. Composite effluent samples are analyzed by the NBC Laboratory for conventional pollutants and metals including copper, lead, mercury, nickel, silver, and zinc, as well as nutrients. The nutrients analyzed are nitrite, nitrate, ammonia, and total phosphorus. Nitrate is determined by difference from a combined nitrite/nitrate measurement and a nitrite measurement. Permit requirements were modified by the Rhode Island Department of Environmental Management (DEM) during 2005 as part of new nutrient permit limits issued to reduce the amount of nitrogen discharged to Narragansett Bay. The updated permit requirements now mandate monitoring of nitrate, nitrite, and Total Kjeldahl Nitrogen (TKN) three times per week. TKN analyses determine both ammonia nitrogen and organic nitrogen in a sample, and the organic nitrogen component is necessary to determine and monitor total nitrogen in treatment plant effluent. Permit monitoring requirements for ammonia remained at twice weekly, but the NBC sampled all nutrient parameters three times per week beginning on August 1, 2005. In 2004 the NBC purchased a "state of the art" nutrient auto-analyzer to process treatment plant samples and a second instrument was acquired in September 2005 to process salt water samples. These instruments show improved analysis efficiency for nutrient measurements, and analytical results from the new equipment continue to produce better precision and accuracy than previous analyses**.**

Other required sample collections for plant monitoring include daily fecal coliform bacteria, the conventional pollutants biochemical oxygen demand (BOD) and total suspended solids (TSS), oil and grease, pH, and total residual chlorine (TRC). Effluent samples are collected and analyzed for dissolved metals at both facilities on a monthly basis. Whole effluent bioassay toxicity tests are also conducted quarterly at both facilities.

Consent agreement RIA-330 between the NBC and DEM was fully executed and took effect on January 1, 2004. This agreement resolved the NBC's appeal of certain conditions within RIPDES permit Nos. RI100072 and RI10100315, which were issued to the Bucklin Point and Field's Point treatment facilities, respectively, on December 31, 2001. As a result of this consent agreement, consent decree permit limits at Bucklin Point for copper, mercury, nickel, silver, and zinc were developed based on historical effluent concentrations rather than water quality criteria. Similarly, Field's Point consent decree permit limits for copper were also developed. At both plants, cyanide permit limits were agreed upon that recognize the EPA quantitation limit of this parameter. As a result of these updated consent decree limits, NBC facilities are better able to meet effluent limits.

Additional changes in the new consent agreement included the addition of a second daily fecal coliform bacteria grab sample at the final effluent to improve the testing of this important water quality indicator. New seasonal limits were also set at Bucklin Point for ammonia in the final effluent based on ammonia toxicity criteria.

As of August 1, 2005, nutrient monitoring was increased to three times per week. A consent agreement was signed on June 16, 2006 which imposed interim seasonal total nitrogen limits of 10 ppm and 18.2 ppm for Bucklin Point and Field's Point respectively. The Biological Nutrient Removal (BNR) facility performance at Bucklin Point will be evaluated until the end of the summer 2007 in order to determine if additional plant upgrades will be necessary to meet the future 5 ppm limits that are anticipated for this facility.

At Field's Point, facility planning is underway to determine the best, most cost-effective means of meeting a 5 ppm total nitrogen discharge limit. Major facility upgrades and renovations would be necessary to implement BNR technology, and space limitations add to the issues that have to be addressed in order to develop a facility upgrade plan that will accommodate BNR.

Clean Sampling Implementation

In 1998, a comparative study was conducted of various sample collection methods at the Field's Point and Bucklin Point effluents. The EPA determined that one of the greatest difficulties in measuring pollutants, particularly trace metals, is avoiding sample contamination during collection, transport, and analysis. In response, the EPA developed the 1600-Series Methods Guidance for "Ultra-Clean" sampling and analysis of trace metals. The NBC comparative study was conducted to determine the level of "cleanliness" necessary for routine effluent sampling and the level of background contamination which may be present with existing sampling methods. The study concluded that improved sampling techniques reduce background sampling contamination and certain trace metal levels in the effluent. As of January 1, 2000, 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, EMDA is constantly evaluating its sample collection and handling procedures to ensure that contamination will not significantly affect the data results. EMDA is continuing its adherence to ultra-clean sampling methodology developed by Hampton Roads Sanitation District of Virginia via participation in a National Association of Clean Water Agencies (NACWA) mercury study begun in 2003. This methodology uses sample bottles, tubing, and pumps that allow sample collection and transfer without opening bottle tops, eliminating many potential sources of contamination. The experience gained in this study will assist EMDA in determining the best ways to improve the performance-based clean sampling methods.

EMDA has implemented a plant sampling quality assurance program to evaluate the success of its current clean sampling program in limiting contamination in its three times weekly nutrient and metals composite sampling of the influent and effluent at the two treatment facilities. The program defines a strict protocol on cleaning the 10 and 15 liter HDPE composite carboys used in the sampling. In short, 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 water (DI) that has been treated with a Barnstead Nano Pure four cartridge filtration system 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 of the suction and pump tubing used in the drawing of the wastestream sample into the composite carboy container. This cleaning follows the same steps as the carboy cleaning. The success of the carboy and tubing cleaning is evaluated with the collection of regular blank samples. For these blank samples, DI 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 performed on the wastewater sample. Tubing cleaning is evaluated by drawing DI through the tubing into pre-cleaned containers. Results from these samples have helped EMDA, in conjunction with the Laboratory, determine the steps needed to continue to improve the clean sampling protocols as analytical detection limits continue to be reduced through improved laboratory procedures and instrumentation.

Field's Point Special Sampling Activities

The following summarizes the special sampling activities conducted at Field's Point during the past year:

- EMDA staff continues to check the agreement between the continuous, in-situ influent and effluent pH probes with discrete pH grab samples analyzed by the laboratory. Two grab samples are collected each day at both sites. Working with the laboratory on this calibration effort has helped improve data quality and comparability. The results of this comparison are documented in a daily log sheet. EMDA staff contact Operations staff to calibrate the continuous, in-situ probes whenever its values are outside of the normal agreement range with the laboratory instrument which is calibrated daily.

- EMDA staff performs daily checks of the influent and effluent waste-stream channels for the presence of total residual chlorine and sulfides which may interfere with cyanide sample analyses. EMDA staff use standard potassium iodide, starch, and lead acetate indicator papers for this testing. In 2006, all tests for these constituents yielded non-detectable results at Field's Point. If either of these constituents is detected, the cyanide sampling, if in progress, will be suspended and re-started the following day to ensure that these chemicals do not interfere with the cyanide analysis.

- NBC is constructing the largest public works project in Rhode Island history. The project will be constructed in three phases. The first phase consists of a three mile tunnel which is approximately 250 feet below ground level in the Providence metropolitan area. There are six drop shafts with diversion structures that will divert storm flow to the tunnel. This tunnel will collect and store untreated combined sewage generated by rain events. After rain events, pumps will be activated to deliver the wastewater collected in the tunnel to the Field's Point treatment plant. This wastewater will then undergo secondary treatment instead of being discharged to the receiving waters via CSO outfalls or wet weather overflow at the treatment facility. As part of the construction mining activities, an outfall pipe from the sedimentation pond discharges ground water into the Field's Point influent channel. EMDA collected samples of the water flowing into the channel throughout the year to monitor the groundwater for potential impacts on plant processes. Effluent quality was not adversely impacted by this input. Mining for the first phase of this project was completed on December 1, 2005. EMDA continued to sample the ground water discharged from this operation on a regular basis in order to quantify the loadings from this source during 2006 while grouting and sealing activities were still ongoing.

- EMDA conducted sample collections to evaluate mercury loading to the Field's Point facility and to better understand the fate of mercury within the treatment facility. NBC's Pretreatment Section has implemented Best Management Practices for the Management of Waste Dental Amalgam to control the impact of mercury on the sewer system. EMDA studies have analyzed sewer grit from the collection system, Field's Point influent wastewater and its grit, sludge, and effluent. Split samples were analyzed monthly by the Hampton Roads Sanitation District in Virginia, a lab that is an international center for trace metal analysis of municipal wastewater. This study will allow NBC to better quantify the source and removal of mercury at Field's Point. Final effluent concentrations for total mercury are well below mandated permit limits which are based on water quality protection.

Bucklin Point Special Sampling Activities

The following activities summarize special sampling activities conducted at Bucklin Point during the past year:

- EMDA staff picked up septage samples weekly at the NBC Lincoln Septage Receiving Station and delivered them to the NBC Laboratory for analysis. Three daily composite samples of septage trucked to the Lincoln station are analyzed by the NBC Laboratory for trace metals and cyanide each week. Interceptor Maintenance staff sample and screen each septage truck's waste delivery for quality by measuring pH during the pump-out at the septage facility.

- EMDA staff performed daily laboratory analyses for both permit and process samples. Daily effluent pH, and temperature measurements were performed. EMDA staff began regular daily checks of the influent for pH; this grab sample is collected in the Vortex and Screening Building, in the channel just prior to the bar screens. Results are communicated to the Laboratory and Operations for permit compliance and process control applications. Abnormal pH measurements will trigger additional grab samples being collected and an investigation by Pretreatment staff. The QA/QC program requires calibration, checks, and documentation that the pH meter and colorimeter used for these tests are operating properly.

- EMDA staff performs daily checks of the influent and effluent wastestream channels for the presence of total residual chlorine and sulfides which may interfere with cyanide sample analyses. EMDA staff use standard potassium iodide, starch, and lead acetate indicator papers for this testing. In 2006, all tests for these constituents were non-detected at Bucklin Point. If either of these constituents is detected, the cyanide sampling, if in progress, will be suspended and re-started the following day to ensure that these chemicals do not interfere with the cyanide analysis.

Throughout 2006, process and operational improvements that were implemented in 2005 were fully operational. These upgrades included: UV disinfection of effluent to replace the chlorination operation of normal secondary effluent, new vortex grit removal machinery, enhanced dry weather capabilities (including an influent pumping station), a new screening and grit building, new dry weather primary clarifiers, a dry weather sludge pumping station, a dry weather primary effluent splitter box, as well as other modifications to the overall operation of plant processes. EMDA continued to coordinate with NBC Construction and Grants staff and Bucklin Point Operations staff to evaluate existing locations. Wet weather influent sampling for Bucklin Point was moved further upstream towards the headworks to eliminate the impact of recycled wastestreams on these results.

In the fall of 2004, flow at the Bucklin Point facility was diverted through the newly constructed phases of the plant process. Other processes continued to be put on-line throughout 2005, and EMDA continued to execute the additional sampling tasks throughout 2006. These included:

- Wet weather treatment at Bucklin Point was initiated on May 25, 2005. The old primary effluent treatment tanks were converted to store untreated waste until the plant can effectively treat and disinfect it, thus increasing the overall treatment capacity of the facility. EMDA stationed and maintained automated samplers for wet weather influent during 2006.

- Wet weather effluent quality monitoring for fecal coliform, pH, TSS, BOD, and TRC were performed by EMDA and Bucklin Point Operations staff after hours. TRC is measured in the contact tank as a measure of disinfection at the time of fecal coliform grab sample collections. TRC is also monitored downstream of de-chlorination by sodium bisulfite as specified in the RIPDES permit.

Analysis of Influent Loading Data

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

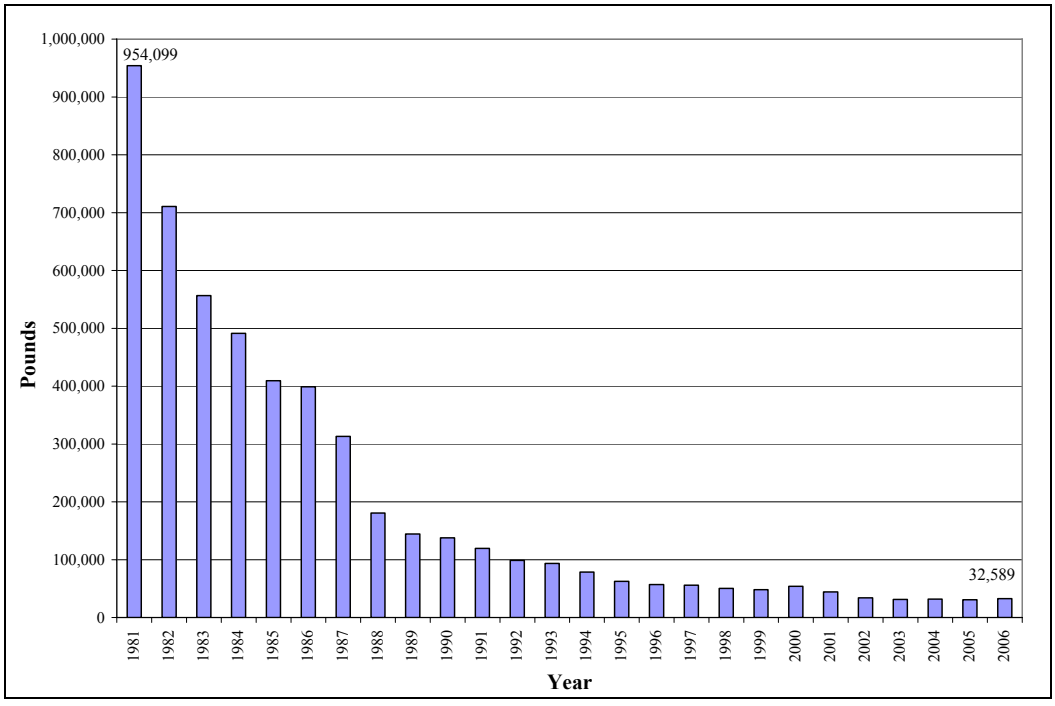
Records of data for metals and cyanide in the Field's Point collection system have been collected and analyzed since 1980. Significantly less historical loading data is available for Bucklin Point, which was acquired by the NBC in 1992. The historical Bucklin Point data presented here covers the period from 1994 to present for metals, and 1991 to present for cyanide.

Field's Point District - Influent Loading Analysis

FIGURES 11 and 12 depict the reduction in metals and cyanide loadings to Field's Point between 1981, the year before the NBC assumed the ownership and operation of the Field's Point Wastewater Treatment Facility and portions of the metropolitan Providence sewer system, to the present.

Over the past 25 years, there has been a significant downward trend in the total loadings of metals as can be seen in FIGURE 11. Total metals loadings is defined as the sum of cadmium, copper, chromium, mercury, nickel, silver, and zinc loadings for a given year. These loadings showed a slight increase of 6.1% between 2005 and 2006, but have decreased 96.6% since 1981.

FIGURE 11
Field's Point Total Metals Influent Loading Trend Analysis



Cyanide loading data for the same time period indicate a similar overall downward trend, as can be seen in FIGURE 12, with a dramatic 29.8% decrease in loadings between 2005 and 2006. The success in reducing the metal and cyanide inputs to the treatment facilities is largely due to the efforts and success of the NBC's Pretreatment and Pollution Prevention programs.

FIGURE 12
Field's Point Cyanide Influent Loading Trend Analysis

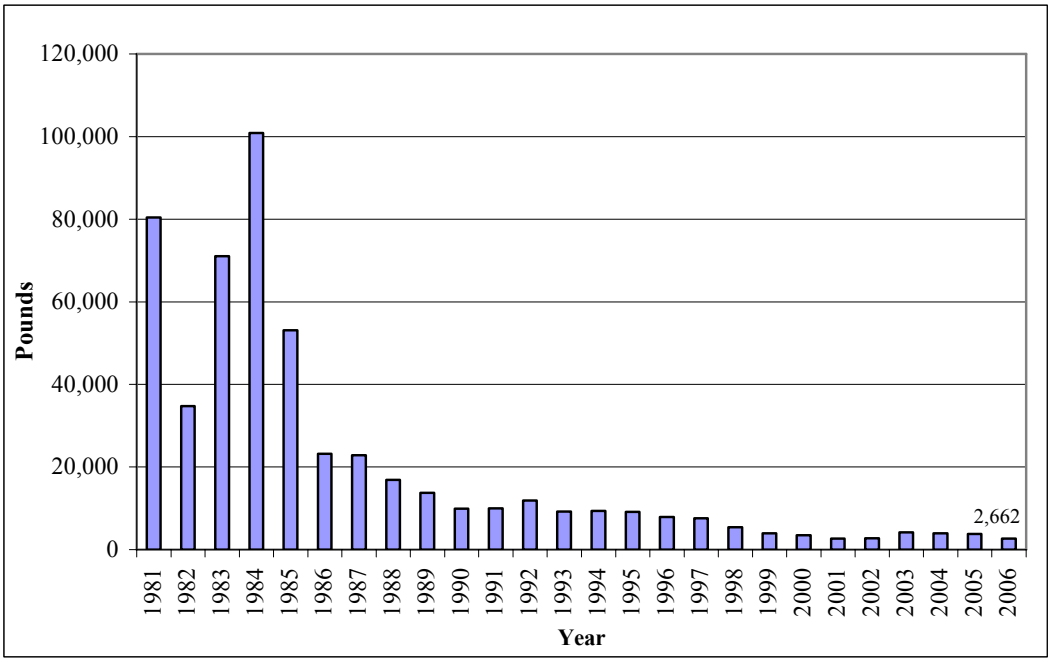


TABLE 16 provides a comparison of the 2005 and 2006 metals and cyanide loadings to Field's Point. Loading figures were calculated based on monthly averages of concentration and flow.

TABLE 16
Comparison of 2005-2006
Annual Loadings to Field's Point

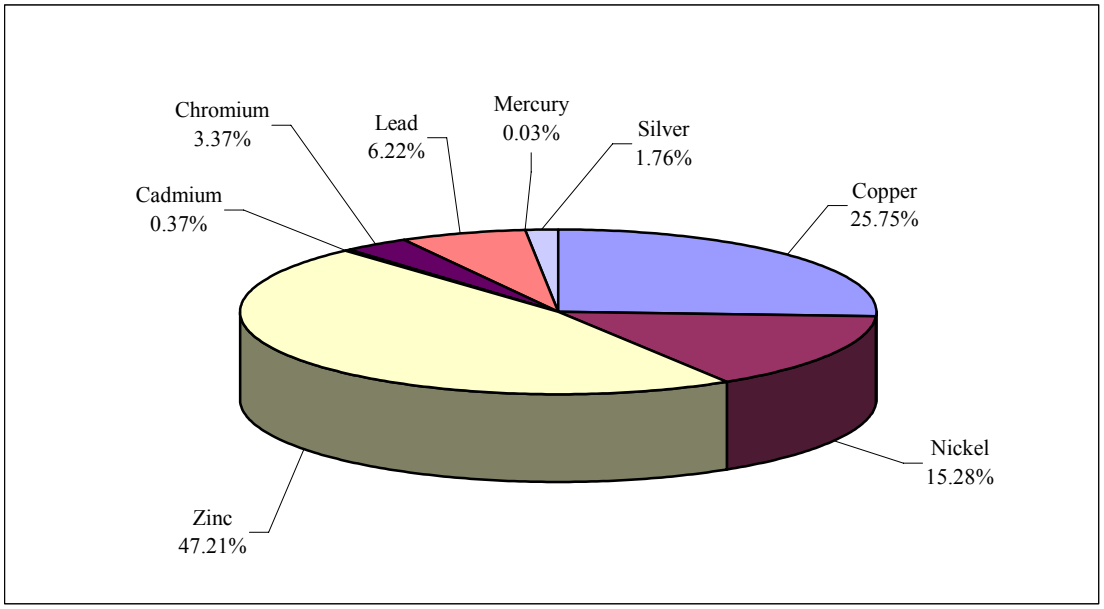
Pollutant	2005 (pounds)	2006 (pounds)	Total Pound Change	% Change
Total Cadmium	130.8	121.3	-9.5	-7.3%
Total Chromium	893.4	1,097.4	204.0	22.8%
Total Copper	7,361.4	8,392.3	1,030.9	14.0%
Total Lead	1,718.6	2,027.7	309.1	18.0%
Total Mercury	13.3	10.8	-2.5	-18.8%
Total Nickel	4,549.7	4,980.7	431.0	9.5%
Total Silver	590.1	573.6	-16.5	-2.8%
Total Zinc	15,449.7	15,385.1	-64.6	-0.4%
Total Metals	30,707.0	32,588.9	1,881.9	6.1%
Total Cyanide	3,792.2	2,662.2	-1,130.0	-29.8%

As illustrated in TABLE 16, the annual influent loading of cyanide and mercury showed dramatic decreases in 2006 compared to 2005. Cyanide influent loadings decreased by nearly 30% from 2005 to 2006, and 96.7% since 1981. The remaining metals showed minimal change in 2006 compared to 2005. These decreases can be attributed to the educational efforts by the Pretreatment and ESTA Sections and the NBC's proactive approach to pollution prevention. The decreases demonstrate NBC's continued commitment to vigilant implementation of pollution prevention measures. The largest percent reduction of annualized loadings to Field's Point was for total cyanide, with a 29.8% reduction observed. In addition to a decrease in total flow to the treatment plant as a result of completion of the drilling for Phase I of the CSO Abatement project there was a 63,361 gallons per day decrease in industrial flow from metal finishing firms.

The large overall reduction in mercury was partly the result of elevated influent results in summer 2005. The NBC Laboratory mercury analyzer was not in service, and samples had to be sent out to another laboratory for permit-related analyses at this time. The current method detection limit for mercury at the NBC is 1.14 ppt, while the samples that were sent out all had results that were non-detected at 200 ppt. Using regression order statistics to determine the 99th percent confidence level value that the non-detected samples are projected to have had results in a loading of 12.6 pounds of mercury during 2005. This would still result in a 14% decrease in mercury loadings for 2006 compared to 2005 at Field's Point. Reductions are continued to be expected into 2007 as a result of implementation of the Best Management Practices for the Management of Waste Amalgam and decreases in residual mercury inputs from grit in the sewer lines. Copper loadings showed the largest absolute increase in 2006, and this was mainly attributable to uncontrollable loadings from background sources. Chromium loadings exhibited the largest overall percent increase in 2006. Unusually high influent chromium loadings were observed at the beginning of 2006, but the Pretreatment Section investigated and located the source of these loadings. The 2006 total metals loadings to the plant increased by 6.1% from 2005, with total metals of 1881.9 pounds more in 2006 than in 2005. The majority of this increase is attributable to uncontrolled copper influent loadings associated with the potable water supply.

A percentage breakdown of the various metals discharged to Field's Point is provided in FIGURE 13. The greatest metal loadings contribution to Field's Point is from zinc, nickel, and copper. These metals account for 88.2% of the total metal loadings to Field's Point; roughly equivalent to the overall relative contribution observed during 2005. The loading of total zinc in 2006 was 15,385.1 pounds, or roughly 47%, the highest of any toxic pollutant discharged into the Field's Point system. As will be shown later in this chapter, the majority of zinc loadings are attributed to residential sources. Copper was the next highest pollutant load to Field's Point at 8,392.3 pounds, followed by nickel at 4,980.7 pounds.

FIGURE 13
Breakdown of Total Metals – Field's Point 2006 Influent Loading



~Oil and Grease Inputs to Field's Point

Monthly sampling of oil and grease inputs to Field's Point reveals low and consistent concentrations. Concentrations ranged from 8.0 ppm to 42.5 ppm during 2006. Effluent concentrations are significantly lower, ranging from 4.5, or not detectable, to 5.1 ppm. Low inputs are the direct result of Pretreatment efforts to permit, inspect, and monitor industrial and commercial establishments, including restaurants. NBC's RIPDES permit requires monthly sampling, with three grab samples collected over the course of a 24-hour period, one grab per shift. The grab samples are analyzed separately and the maximum is reported. The RIPDES permit does not set a discharge limit. This data is listed in ATTACHMENT VOLUME II SECTION 10.

~Field's Point Influent and Effluent Organics

Volatile organic compounds (VOC) are measured monthly for influent and effluent at the Field's Point facility. These samples are collected as composite and grab samples. The analysis of 31 organic compounds using EPA method 624 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 465 analytical results for influent samples obtained during 2006, 2.6% of these were present at detectable concentration levels, this is a slightly larger percentage than the 2005 influent results, but only 316 influent analytical results were

obtained for 2005. Effluent sampling results show 100% of effluent VOCs were not detectable for 2005, while 0.6%, or two parameters, were present at detectable concentrations in Field's Point effluent during 2006. This demonstrates the effectiveness of the Pretreatment and ESTA Sections individual and concerted efforts to reduce the amount of organic pollutants introduced to the NBC facilities, thereby dramatically reducing the potential for adverse impacts on NBC receiving waters.

~pH Variability at Field's Point: Influent and Effluent

The pH of the Field's Point influent is measured twice daily by Laboratory staff on a high-precision Orion pH meter. Grab samples are collected by EMDA staff and immediately transferred to the lab for analysis. EMDA staff collected 730 influent samples for this parameter during 2006. The pH range of the influent sample measurements was between 6.59 and 10.2 standard units (s.u.). The influent wastestream is also monitored with a continuous pH probe. This record shows a clear diurnal pattern of approximately 1 standard unit. The limited pH range demonstrates that highly concentrated batch discharges of highly acidic or basic industrial discharges are limited in intensity and duration. No NBC wastewater treatment facility process has knowingly been negatively impacted by influent pH fluctuations during the year. There were also no persistent excursions in influent pH during 2006 and no negative effect on normal plant operations process control was noted. Effluent grab samples, also collected twice daily over the year, ranged from 6.4 to 7.2 s.u. There were no excursions from the permitted 6.0 to 9.0 s.u. discharge range at Field's Point.

Pretreatment's demonstrated efforts and results in controlling excursions in influent pH from industrial users resulted in a revision of the NBC's Rules and Regulations which standardized pH local limits within the service districts of both facilities to between 5.0 and 11.0 s.u. Previously, industrial users, due to the high pH of potable water in the Providence area, were burdened with additional treatment of non-contaminated water to adjust pH to a range that fell within the previous local limits. Based on the observed pH data, the change in pH local limits has not had an adverse impact on the Field's Point wastewater treatment facility. In fact, the lowest influent pH value for 2006 as mentioned above, was 6.59 s.u. This is higher than the minimum observed value of 5.23 s.u. during 2005, and 5.9 s.u. during 2004.

Bucklin Point District - Influent Loading Analysis

The Bucklin Point influent data demonstrated a downward trend in total metals loading between 1994 and 1997, followed by an upward trend between 1997 and 2000 as can be seen in FIGURE 14. Data from 2001 and 2002 showed reductions in influent metals loadings, while data from 2003 showed another increase, the majority coming from short-lived high chromium inputs that occurred from January 28, 2003 through June 3, 2003. Pretreatment staff conducted an investigation to determine the source of the high chromium concentrations. However, the source could not be conclusively verified since the high concentrations had stopped impacting the plant during the investigation. The

2006 data indicate another increase in metals loading to Bucklin Point, with 2006 levels 12.7 % greater than 2005 loading. Pretreatment staff conducted an investigation to determine the source of high chromium concentrations. Pretreatment staff identified the source and worked with them to mitigate the high chromium concentrations. Sporadic, high influent chromium loadings are responsible for the majority of the observed increase in metals loadings to Bucklin Point. Chromium loadings are well within the Maximum Allowable Headworks Loading (MAHL) for this parameter.

Cyanide loadings at Bucklin Point have similarly been variable but exhibit an overall decrease as can be seen in FIGURE 15. The results from 2006 show, as with Field's Point, a dramatic drop in cyanide influent loadings. 2006 witnessed a 28.7% decrease in cyanide loads to Bucklin Point from the previous year. Loadings have been below 1,000 pounds per year since 1999.

FIGURE 14
Bucklin Point Total Metals Influent Loading Trend

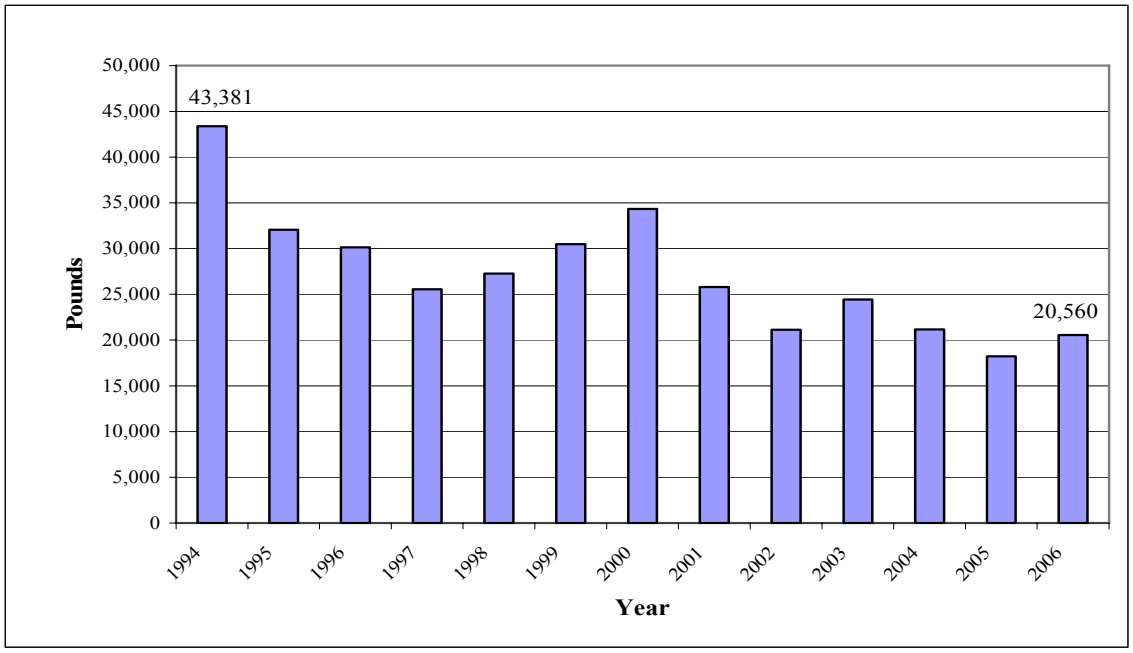


FIGURE 15
Bucklin Point Cyanide Influent Loading Trend

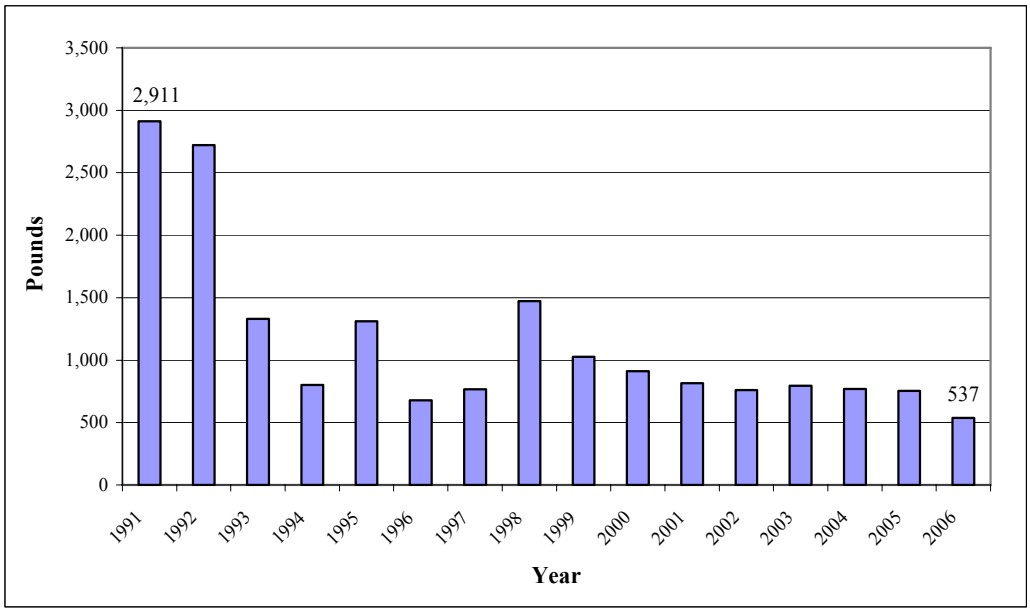


FIGURE 16 provides a breakdown of the various metals discharged to Bucklin Point. Zinc and copper continue to be the largest contributors to total metals loading to Bucklin Point.

FIGURE 16
Breakdown of Total Metals – Bucklin Point 2006 Influent Loadings

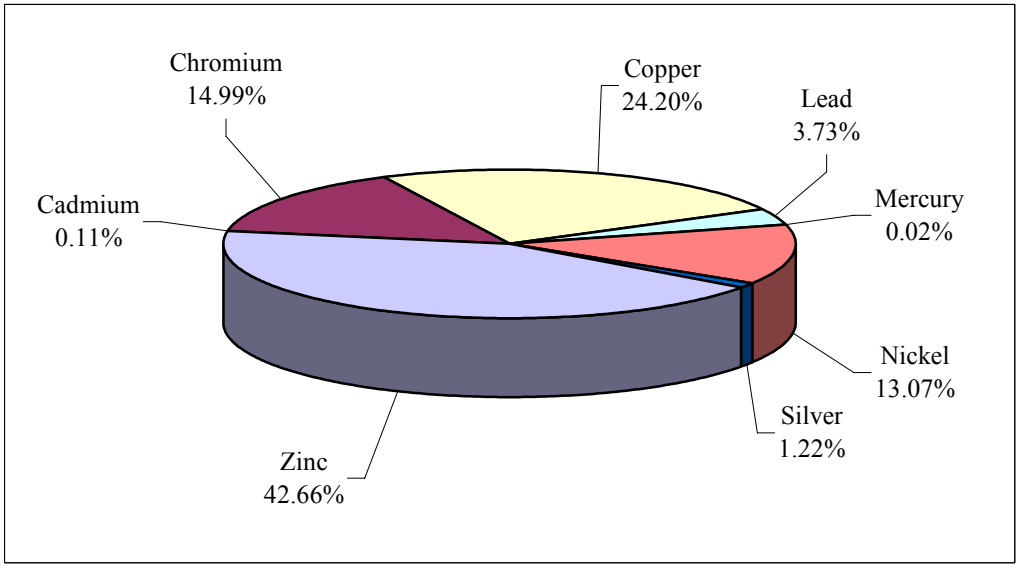


TABLE 17 shows the comparison of Bucklin Point metals and cyanide loadings for 2005 and 2006. Loadings for all metals except chromium and mercury were greater in 2006 than in 2005. Zinc and nickel loadings remained essentially unchanged. The single largest reduction on an absolute pound basis was for cyanide, reduced by 216.6 pounds, or 28.7%, in 2006. The 2005 mercury loadings, as mentioned previously, were artificially elevated as a result of the need to send samples to an outside laboratory with significantly higher detection limits, and high influent values in August 2005. The fact that, despite this problem, the loadings have remained significantly lower than in previous years indicates that Pollution Prevention user education efforts, and the Pretreatment Mercury and Silver Reduction Program continue to be effective in reducing these inputs to the facility. The overall decrease in total loading in pounds to the Bucklin Point facility between 1994 and 2006 is 52.6% for total metals and 81.5% for cyanide between 1991 and 2006.

TABLE 17
Comparison of 2005-2006 Annual Loadings to Bucklin Point

Pollutant	2005 (Pounds)	2006 (Pounds)	Difference In Pounds	Percent Change
Total Cadmium	25.7	23.5	-2.2	-8.6%
Total Chromium	1,099.1	3,081.9	1,982.9	180.4%
Total Copper	4,734.0	4,976.0	242.0	5.1%
Total Lead	706.6	767.1	60.5	8.6%
Total Mercury	5.6	4.5	-1.1	-19.6%
Total Nickel	2,684.8	2,686.3	1.5	0.1%
Total Silver	223.2	249.8	26.6	11.9%
Total Zinc	8,768.4	8,770.9	2.5	0.03%
Total Metals	18,247.4	20,560.1	2,312.7	12.7%
Total Cyanide	754.0	537.4	-216.6	-28.7%

~Oil and Grease Inputs to Bucklin Point

Monthly sampling of oil and grease inputs to Bucklin Point reveals mostly low consistent concentrations. Influent oil and grease concentrations in 2006 ranged from 6.8 ppm to 42.6 ppm. The upper end of the 2006 influent range was significantly lower than during 2005, with the average for 2006 at approximately 12 ppm lower than the 2005 average. All but one effluent sample were below the detection limits of 5.1 ppm and 4.5 ppm, with the highest effluent concentration 6.7 ppm. This data is listed in ATTACHMENT VOLUME II, SECTION 10.

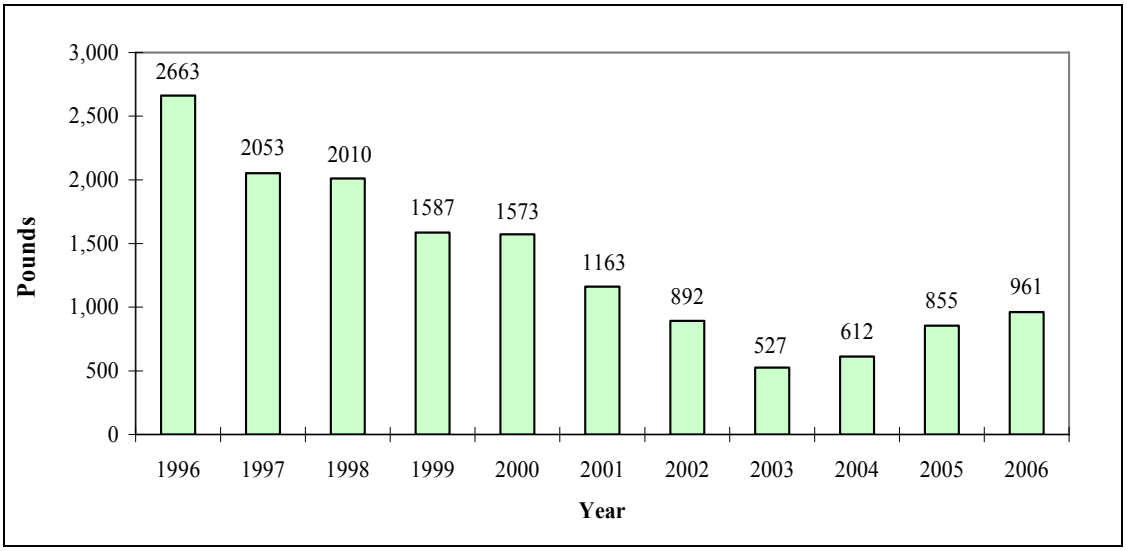
~ Bucklin Point Influent and Effluent Organics

Volatile organic compounds (VOC) are monitored monthly at the Bucklin Point facility. The analysis of 31 organic compounds using EPA method 624 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 406 analytical results obtained from influent samples during 2005, 96% of these were reported as not detectable. This remained fairly constant in 2006, where 94% of the analytical results were reported as not detectable. Only chloroform was consistently found in detectable in influent samples during this time period, though not at significant levels. Effluent analytical results for 2006 show an improvement when compared to 2005, however both years show excellent control of organic pollutant discharge. During 2006, only one parameter was found at a detectable concentration, while in 2005, there were four parameters found at detectable levels. Given the number of samples collected, this demonstrates that the control of organic pollutants both introduced and discharged from Bucklin Point are well regulated and controlled.

~Septage Loading to Bucklin Point

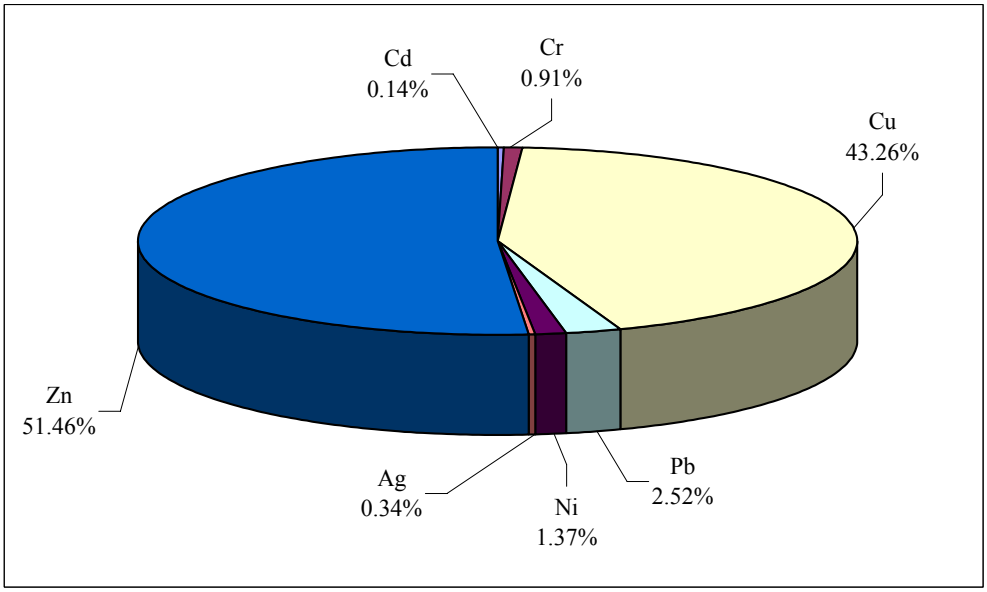
An analysis of recent volume trends indicates an increase of 4.5% from the reported 8.96 million gallons received in 2005 to 9.36 millions gallons received in 2006, continuing the trend in increased loadings since 2003. Overall, the volume reported in 2006 is approximately 37% lower than the volume discharged in 1996. There was also an increase in metal loadings from septage in 2006. From 2005 to 2006 there was a 12.4% increase in total metals from septage, or 106 pounds. An increase of 82% in the metals loadings from septage has been observed since 2003. This is in contrast to the 28% decrease in the volume of septage received during this same time period. Improved sampling technique and better detection limits may be more accurately capturing the septage loading to Bucklin Point and explain the increased metals loadings observed. However, a 64% reduction in total metals from septage since 1996 illustrates the diminishing impact of septage metals on influent loadings as can be seen in FIGURE 17. Overall, septage is not a substantial source of metals loading to Bucklin Point. Despite the fact that discharges to the septage facility increased from 1997 to 2000, total metals loading consistently decreased over the same time period. The relative septage contribution to total influent metals at Bucklin Point remained the same in 2006: 4.7% of total metals originated with septage in 2006 and in 2005. Part of the reason for this relative increase is the continued decrease in total metals to the Bucklin Point facility.

FIGURE 17
Trend Analysis of Total Metals Loadings in Septage



Copper and zinc continue to be the major metal contributors, 416 pounds and 495 pounds, respectively, in septage. These two metals make up 94.7% of the total septage metals loading. However, zinc loading from septage represents only 5.6% of the total influent zinc loading to Bucklin Point during 2006. Copper from septage amounted to 8.4% of the total copper loading to Bucklin Point for 2006. FIGURE 18 illustrates the average relative composition of metals in septage wastewater. The septage monitoring data are provided in ATTACHMENT VOLUME II, SECTION 10.

FIGURE 18
2006 Breakdown of Total Metals in Septage



New septage sample collection techniques and equipment were introduced in June of 2004. The new equipment allows for easier, in-line sampling during septage delivery. A sample from each truck is collected after the sample port is flushed thoroughly, usually after the load has discharged for approximately one minute. The sample from an individual truck is screened for pH, odor, and other unusual characteristics. If any anomaly is observed, the sample is targeted for individual analysis, otherwise is it combined with the day's delivery and sent to the laboratory for analysis. This new sampling protocol has helped to more quickly locate potential toxic inputs to the collection system. These more representative sampling techniques may partially explain the observed increase in septage metal loadings since 2004. 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.

Background Sources of Metals to the Influent Load

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

The NBC has continued to study possible background sources contributing to the total metal influent loadings to the Bucklin Point and Field's Point facilities.

Sample collection from sanitary and combined sewers in residential neighborhoods began in 1993. Sewers in residential neighborhoods have shown significant levels of trace metals and other toxic pollutants. In May 2000, EMDA began sample collections using EPA approved guidance on clean sampling techniques to quantify background, non-industrial metals inputs to the Bucklin Point and Field's Point facilities. During 2005, EMDA staff collected 37 samples in residential sanitary and combined sewers. Samples were collected as 24-hour composites in wet and dry weather conditions.

TABLE 18 summarizes the results for the background, non-industrial sewer collections for 2006 and compares them to influent concentrations at the facilities. Industrial and commercial sources account for only about 7.8% of total flow into Bucklin Point and 5.9% of the total flow at Fields Point. Due to the high proportion of flow from residential and non-industrial sources, this direct comparison of concentrations gives some approximation of the loadings from background sources. Nearly all metals parameters measured were above laboratory detection limits, with the exception of silver. Detection limit values were entered for samples with concentrations at or below the laboratory's detection limits. Average influent concentration values were determined, while geometric means were calculated for the background data in order to reduce the impact of highly variable data on the comparison. Results of samples taken from both collection districts were used to determine the background loading values. All concentrations are expressed as parts per billion (ppb).

TABLE 18
Results from 2006 Background Metals and Cyanide Contribution Study (ppb)

	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Zn	CN	As	Se	Sn	Mo
Background	0.14	4.49	24.8	6.65	0.031	5.76	0.28	90.05	4.81	0.99	0.65	0.95	0.68
FP Influent	0.80	7.32	55.28	13.05	0.072	32.65	3.82	100.76	16.49	3.11	5.51	NM	4.73
% FP Load from Background	17.5%	61.3%	44.9%	51.0%	43.1%	17.6%	7.3%	89.4%	29.2%	31.8%	11.8%	N/A	14.4%
BP Influent	0.31	39.90	66.81	10.28	0.060	35.97	3.30	118.13	7.01	1.87	0.86	6.19	2.77
% BP Load from Background	45.2%	11.3%	37.1%	64.7%	51.6%	16.0%	8.5%	76.2%	68.6%	52.9%	75.2%	15.4%	24.5%

These results can be used to approximate the impact of non-industrial loading to the Bucklin Point and Field's Point facilities. From TABLE 18 it is evident that a large percentage of the influent copper, lead, zinc, and cyanide concentrations observed at the NBC wastewater treatment facilities are from non-industrial background sources. The sources of these background-loading contributions are likely discharges from domestic users, street runoff, leaching from residential plumbing piping, and contaminated urban soils. Much lower contributions from non-industrial sources are observed for nickel; approximately 16 - 18% of total influent loading. All other metals indicate a significant background source component, despite the high variability of the data. From this comparison it is most apparent that zinc, the trace metal with the highest concentration in treatment plant and septage loads, is predominantly coming from non-industrial sources.

EMDA is continuing to improve and update studies of pollutant loads throughout the collection system. Understanding non-industrial sources is important to permit development and planning to reduce loading to the treatment facilities and to Narragansett Bay. EMDA is working to use flow measurements and data to choose study sites that will accurately describe mass loading from domestic, storm runoff, and major drainage basins as well as at metering stations on NBC's interceptors. From this analysis, it is obvious that large percentages of the toxic pollutant loads to the Field's Point and Bucklin Point Wastewater Treatment Facilities are from residential sources that are beyond the control of the NBC regulatory program.

Influent Loading Conclusions

The development of the National Pretreatment Program was a direct result of the Federal Water Pollution Control Act of 1972. The Program was established at that time to monitor and regulate the introduction of pollutants from non-domestic sources into Publicly Owned Treatment Works (POTW). Section 307 of the Act required the Environmental Protection Agency to develop standards designed to:

- Prevent the discharge of pollutants which would interfere with the operation of a POTW;
- Prevent the discharge of pollutants which would pass through the treatment works;

- Prevent the discharge of pollutants which would accumulate in the POTW's sludge thereby reducing the potential for beneficial reuse or reduce the opportunities for safe disposal or which would be otherwise incompatible with the POTW's operations.

In 1977 the Act was amended to include additional pretreatment requirements which made POTWs responsible for the establishment of local pretreatment programs to ensure compliance with the EPA's categorical pretreatment standards. Categorical standards have been developed to achieve a nationally uniform system of water pollution control for selected industries and pollutants. Local limits are intended to protect the wastewater treatment facility, the receiving waters, sludge quality, the health of the public and prevent environmental problems as a result of discharges from any non-domestic user.

The development of local limits is not a one-time event for POTWs. Local limits need 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. The existing local limits for the Bucklin Point facility became effective in the late 1980s. Local limits for Field's Point were first developed in 1982 as part of NBC's original pretreatment program and were subsequently revised by the NBC Pretreatment staff in 1987.

In 2004, NBC reevaluated local limits for both facilities. The reassessment of these limits resulted in revised permit limits for several metals based on new EPA data handling methods and criteria in its updated Local Limits Development Guidance issued in July 2004, as well as a special study of metals in NBC receiving waters. Between July 2001 and May 2002 a study was conducted by NBC, University of Rhode Island/Graduate School of Oceanography (URI/GSO), and MicroInorganics, Inc. to better understand metal partitioning in the Seekonk and Providence Rivers. Multiple transects during seasonal surveys were performed over complete tidal cycles to capture the in-situ metal partitioning between dissolved and particulate phases in these estuarine waters. Dissolved and particulate cadmium, copper, lead, nickel and silver concentrations were analyzed and used to develop site specific metal translator values for each POTW. The metal translator is used to convert dissolved water quality criteria concentrations into total metal concentrations in order to calculate the effective total metals concentration, combined with dilution factors within the receiving waters, that corresponds to a given water quality criteria.

As a result of an extensive review of the data from the metals study and facility data collected between January, 2000 and June, 2004, new maximum allowable headworks loading (MAHL) values were calculated. The MAHL values represent the loadings 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, while also allowing for the safe disposal of solids removed from incoming wastewater. The recommendations from this evaluation were submitted to RIDEM in September, 2004, and NBC is awaiting approval of the revised RIPDES permit limits.

TABLE 19 below provides a comparison of these newly calculated values and total metal loadings for 2006. In the case of cyanide, loading goals for both plants were calculated using the EPA 20 ppb quantitation-based effluent permit limit. For Bucklin Point, copper and nickel loading goals were computed using the RIPDES effluent permit limits found in the consent agreement. From this data, it is clear that NBC is meeting the calculated loading goals with a considerable margin of safety. Meeting these goals attests to the overall effectiveness of both Pretreatment and Operations initiatives and measures to control pollutant input and effectively remove them during plant operations.

TABLE 19
Comparison of 2006 Influent Loadings to Recently Calculated Loading Goals

	Field's Point			Bucklin Point		
Parameter	**Preliminarily Calculated Loading Goal**	**2006 Loading**	**Goal Met?**	**Preliminarily Calculated Loading Goal**	**2006 Loading**	**Goal Met?**
Cadmium	2,227	121.3	Yes	511	23.5	Yes
Chromium	37,303	1,097.4	Yes	10,439	3,081.9	Yes
Copper	16,900	8,392.3	Yes	9,746	4,976.0	Yes
Lead	8,541	2,027.7	Yes	2,738	767.1	Yes
Mercury	182.5	10.8	Yes	11	4.5	Yes
Nickel	21,134	4,980.7	Yes	4,709	2,686.3	Yes
Silver	3,942	573.6	Yes	402	249.8	Yes
Zinc	50,005	15,385.1	Yes	16,498	8,770.9	Yes
Total Metals	140,233	32,588.9	Yes	45,052	20,560.1	Yes
Cyanide	4,453	2,662.2	Yes	2,446	537.4	Yes

The annual loading goals presented in TABLE 19 should only be used as an initial evaluation of a facility's ability to meet discharge compliance. Discharge permits enforce daily maximum and monthly average limits based on acute and chronic water quality criteria. While the annual means used to calculate the 2006 loadings and goals are instructive when evaluating a facility's function over longer time periods, meeting annual mean goals does not always translate to compliance with daily or monthly limits.

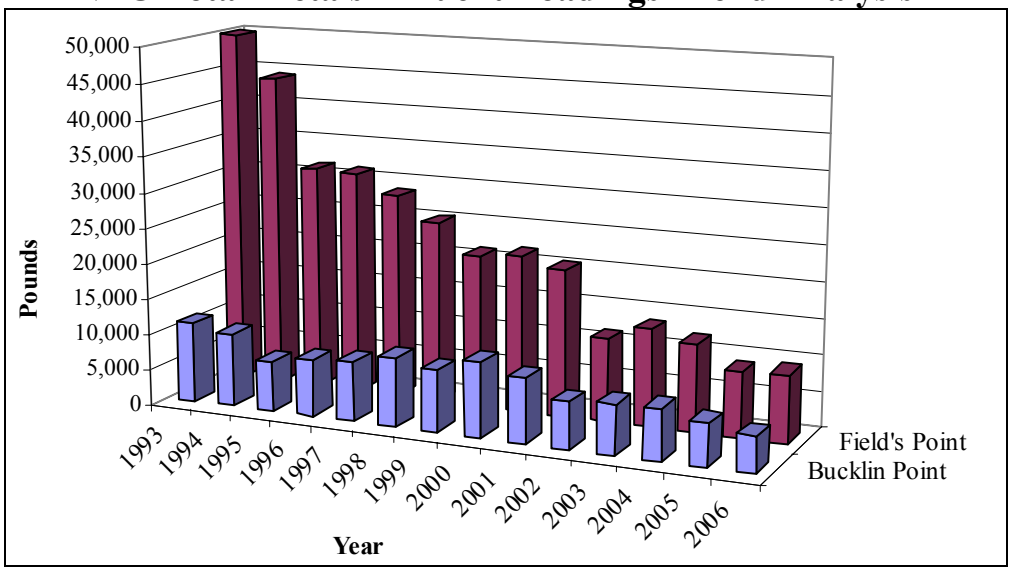
Analysis of Effluent Loading Data

This Pretreatment Annual Report traditionally measures the efforts and results of the work of the Pretreatment and Pollution Prevention Programs by observing the loadings of toxics to the influent of the NBC POTWs. It is also important to consider the discharge loadings into the receiving waters after the 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 the

Field's Point and Bucklin Point facilities for the period from 1993 to 2006 were compiled and analyzed. The overall effluent trends are similar to those for the influent data: concentrations and loadings have been decreasing over time at Field's Point and Bucklin Point has shown recent declines.

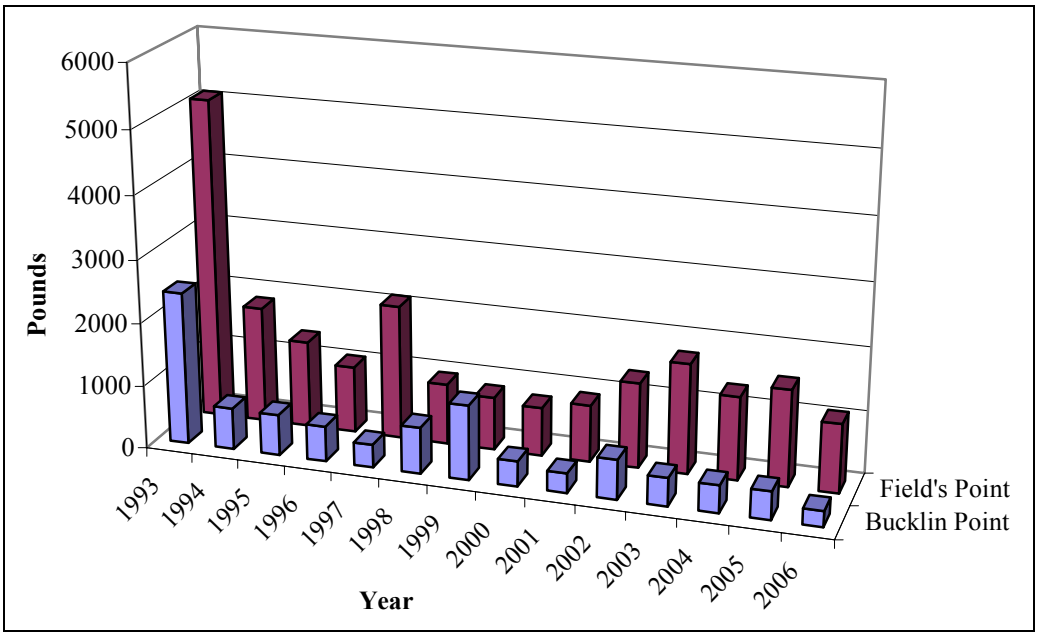
Historical total metals discharges from both NBC facilities are shown in FIGURE 19. The Field's Point facility handles approximately twice the flow volume of Bucklin Point. The percent industrial and commercial flow contribution in the Field's Point service district is 5.9%, and 7.8% for the Bucklin Point service district. Total metals effluent loadings have been steadily decreasing at Field's Point since 1993 through this year. In 2006 total metals in Field's Point effluent increased by 1.9% compared to year 2005 values, while Bucklin Point effluent showed a large 14% decrease, similar to the roughly 17% effluent metals loading decrease observed from 2004 to 2005. As mentioned previously, throughout 2005, new enhanced processes were being brought online at the Bucklin Point facility. Since 2004, effluent metals from Bucklin Point have decreased 29%. Flows to the Field's Point facility in 2006 were slightly greater than in 2005, but a small increase in effluent metals loadings still resulted. The small magnitude of this effluent metals loadings increase demonstrates that pretreatment and pollution prevention efforts continue to be successful in generally reducing the amount of toxics entering and being discharged from the NBC facilities. Maximization of treatment despite increased hydraulic flows by the NBC Operations is another key factor in these impressive values.

FIGURE 19
NBC Total Metals Effluent Loadings Trend Analysis



As illustrated in FIGURE 20, cyanide effluent loadings exhibit similar reductions over time, but with more fluctuation. Annual effluent cyanide loads in 2006, relative to 2005, showed remarkable decreases at both facilities: 29% for Field's Point and 44% for Bucklin Point. EMDA implemented changes in its cyanide sampling techniques during 2004 which have resulted in more representative samples. Simultaneously, the NBC Laboratory has been continuing to improve cyanide detection limits. EMDA also tests for the presence of sulfides and chlorine residual on a daily basis to ensure the integrity and validity of the cyanide collections.

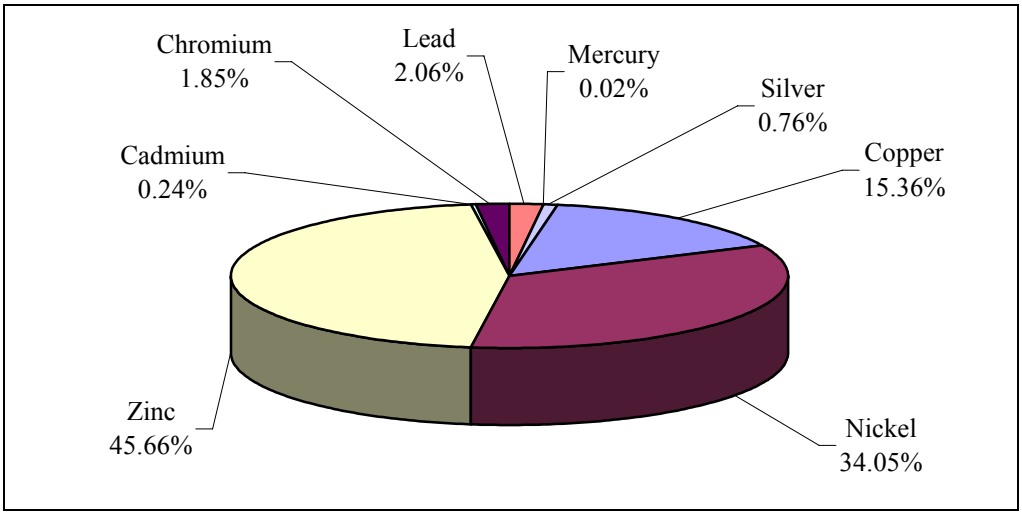
FIGURE 20
NBC Cyanide Effluent Loadings Trend Analysis



Breakdown Analysis of POTW Effluents

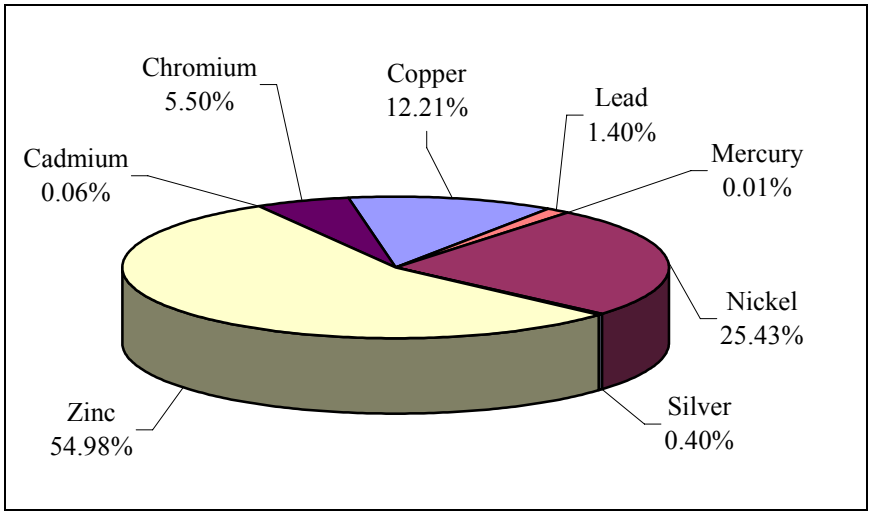
The individual breakdown of total metals (FIGURES 21 and 22) in the effluent from both plants is very similar. The relative proportions of Field's Point effluent can be seen in FIGURE 21. Copper, nickel, and zinc showed slight increases in relative contribution in 2006: about 1% each. Mercury continues to be a smaller and smaller portion of effluent metals from Field's Point. The other trace metals showed minor relative decreases in their contributions to effluent loading.

FIGURE 21
Breakdown of Total Metals – Field's Point 2006 Effluent Loading



The relative proportions of Bucklin Point effluent metals (see FIGURE 22) showed an increase in 2006 for chromium, from 3.0% to 5.5%, due to the intermittent, high influent loads observed in early 2006. The other trace metals showed minor relative changes, and the slight increase in the relative amount of effluent zinc and copper in 2006 compared to 2005 was roughly balanced by a slight decrease in the relative amount of effluent nickel.

FIGURE 22
Breakdown of Total Metals – Bucklin Point 2006 Effluent Loading



Bioassay Data

The two NBC Wastewater Treatment Facilities are required to conduct quarterly bioassay studies to determine effluent toxicity to test organisms. NBC conducts chemical analysis and aquatic toxicity testing, using the response of organisms to detect and measure the presence or effect of one or more substances, wastes, or environmental factors, alone, or in combination. NBC was complete in the species tested and met the quarterly bioassay sampling frequency requirements during 2006 for both facilities. At both facilities *Americamysis bahia* and *Arbacia punctulata* are tested. Samples are collected only in dry weather, defined as 48 hours prior to or during sampling.

Analysis of the acute toxicity data provided determination of the LC_{50} and the NOAEL. The LC_{50} result is defined as the concentration of wastewater that causes mortality to 50% of the test organisms. NOAEL or No Observed Acute Effect Level is defined as the highest concentration of the effluent in which 90% or more of the test animals survive. The permit requirement limit of 100% or greater is defined as a sample which is composed of 100% effluent. The results used in conjunction with the bioassay testing of *A. punctulata* are the NOEC or No Observed Effect Concentration and the LOEC or Lowest Observed Effect Concentration. These tests are used to estimate chronic toxicity. The permit limit for Bucklin Point is 50% or greater for this parameter while at Field's Point the permit requires only monitoring.

At Field's Point all four tests for *A. bahia* gave LC_{50} and NOAEL results of 100%. No Observable Effect Concentration (NOEC) and Lowest Observed Effect Concentration (LOEC) for testing *A. punctulata* was also 100% for all four quarterly tests. This means that undiluted effluent showed no observable effect and there was no significant biological or environmental impact on these species.

At Bucklin Point all four tests for *A. bahia* gave LC_{50} and NOAEL results of 100%. No Observable Effect Concentration (NOEC) and Lowest Observed Effect Concentration (LOEC) for testing *A. punctulata* was 100% for all four quarterly tests. This means that undiluted effluent showed no observable effect or significant biological or environmental impact. Results of the quarterly bioassay data for 2006 are included in ATTACHMENT VOLUME II, SECTION 11. This data is the result of third party analysis by NETCO Laboratories. In conclusion, this data could be interpreted to mean that the effluent from the NBC Wastewater Treatment Facilities is relatively non-toxic to aquatic species and there was no significant biological or environmental impact.

RIPDES Permit Compliance – Field's Point Facility

In September 1992, the RIDEM issued a RIPDES Permit for the Field's Point wastewater treatment facility. The permit contained effluent limitations for priority pollutants for the first time in the history of the facility. In recognition that the Field's Point facility might not be able to immediately comply with all limitations, the RIDEM issued a Consent Agreement (RIA-029) in December 1992 that included adjusted effluent discharge limits. On December 31, 2001, Field's Point was issued a new permit. As mentioned previously, RIDEM and NBC resolved differences over the contested items in January 2004 and agreed to a new Consent Agreement, RIA-330, which went into effect on January 1, 2004. TABLE 21 lists the current permit's limits for metals and cyanide and the new Consent Agreement values for the contested parameters. TABLE 20 presents the limits as well as the measured maximum daily values and maximum monthly averages for parameters of interest.

TABLE 20
Comparison of Field's Point RIPDES & Consent Agreement Limits With 2006 Wastewater Treatment Facility Results

	RIPDES Permit Limits		Consent Agreement Limits		2006 Results	
Parameter	Maximum Daily (ppb)	Average Monthly (ppb)	Maximum Daily (ppb)	Average Monthly (ppb)	Maximum Daily* (ppb)	Average Monthly** (ppb)
Copper	23	23	86.2	35.9	21.2	12.2
Mercury	8.5	0.4	-	-	0.096	0.038
Nickel	332	127	-	-	182	48.3
Silver	10	-	-	-	2.63	0.78
Zinc	380	380	-	-	50.5	32.2
Cyanide	4	4	49.6	20.0	18.9	10.6
BOD Percent Removal	-	85%	-	-	-	>85% in all months
TSS Percent Removal	-	85%	-	-	-	>85% in all months

*In order to compare results to the permit limits, the maximum daily value for the year is reported as the maximum daily.

**The highest average monthly value for 2006 is reported for comparison against the RIPDES permit. Note that the limits for compliance/noncompliance determinations are based on the quantitation limit, which is defined as 0.2 micrograms per liter for mercury and 20.0 micrograms per liter for cyanide.

TABLE 21 details the compliance status of the Field's Point Facility with the limits established by the RIPDES permit and Consent Agreement in effect during year 2006.

TABLE 21
2006 Compliance Status with RIPDES & Consent Agreement Limits For Field's Point Facility

Parameter	2006 Compliance with RIPDES Permit?		2006 Compliance with Consent Agreement?	
	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
Copper	Yes	Yes	Yes	Yes
Mercury	Yes	Yes	N/A	N/A
Nickel	Yes	Yes	N/A	N/A
Silver	Yes	Yes	N/A	N/A
Zinc	Yes	Yes	N/A	N/A
Cyanide	**No**	**No**	Yes	Yes
BOD Percent Removal	N/A	Yes	N/A	N/A
TSS Percent Removal	N/A	Yes	N/A	N/A

TABLE 21 shows that in 2006, Field's Point was in compliance with the daily and monthly discharge limitations specified in the Consent Agreement for all toxic pollutant parameters listed in TABLE 20. Additional work will be necessary to ensure NBC compliance with toxic pollutant discharge limits specified in the RIPDES permit, for cyanide. The monthly average and daily maximum RIPDES limits for cyanide would have been exceeded had they been in effect and not superceded by the Consent Agreement. Cyanide permit limits are enforced down to the method detection limit recognized by EPA, to a value of 20 ppb. The NBC is actively working to ensure full compliance with all the toxic pollutants specified in its RIPDES permit. In 2004, at RIDEM's request, the NBC recalculated permit limits based on the metal translator study conducted by NBC in years 2001 and 2002. In addition to complying with current permit limits, the newly proposed permit limits for copper based on the new metal translator values for Field's Point would also not have be exceeded based on 2006 data. The results of the metal translator studies performed by NBC in 2001 and 2002 found the Providence and Seekonk Rivers met water quality criteria for the trace metals analyzed: cadmium, copper, lead, nickel, and silver. These data have resulted in both rivers being removed from the EPA 303(d) list of impaired waterbodies for metals.

Field's Point had no daily exceedences of the 50 mg/l permit limits for TSS or BOD. The daily fecal coliform bacteria maximum of 400 MPN per 100 ml. was exceeded one time in 2006. The monthly average limit for fecal bacteria was not exceeded.

RIPDES Permit Compliance – Bucklin Point Facility

When the NBC acquired the Bucklin Point facility, the RIPDES permit in effect had been issued to the Blackstone Valley District Commission in December 1990, and was then transferred to the NBC in 1991. This permit listed several discharge limitations for metals, organic compounds and nutrients, but was modified to reflect alternative effluent limitations when the NBC stressed that permitted discharge levels for some pollutants were not attainable. A new permit was issued to the facility on December 31, 2001. NBC contested the new permit limits for copper, mercury, nickel, silver, zinc, cyanide, nutrients and TSS and BOD requirements during rain events when primary effluent must be diverted to the chlorine contact tank. NBC contested the above parameters due to their inability to meet limits that are set as low as saltwater quality criteria in certain cases. The new RI-330 consent agreement limits issued in January 2004 are being used as the measure of compliance. As mentioned in the previous section, NBC has presented to RIDEM new information from water quality monitoring on the Seekonk River, the receiving waters for the Bucklin Point facility, and is awaiting approval of the new permit limits. The study data shows that the Seekonk River meets water quality criteria for metals, outside of the mixing zones assigned to the outfall. TABLE 22 outlines the current permit limits and monitoring requirements for Bucklin Point and the 2006 effluent results.

TABLE 22
Comparison of Bucklin Point RIPDES & Interim Effluent Limits with 2006 Wastewater Treatment Facility Results

	RIPDES Permit Limits		Consent Agreement Limits		2006 Results	
Parameter	Maximum Daily (ppb)	Average Monthly (ppb)	Maximum Daily (ppb)	Average Monthly (ppb)	Maximum Daily* (ppb)	Average Monthly** (ppb)
Hexavalent Chromium	997	60	-	-	18.0	12.8
Copper	5.2	5.2	86.0	29.8	25.6	11.8
Lead	199	10.3	-	-	4.8	1.5
Mercury	1.7	0.04	1.7	0.2	0.065	0.041
Nickel	67	13.7	67	53.3	35.9	28.4
Silver	2.0	-	4.5	-	2.4	0.66
Zinc	76	76	88	76	75.2	48.1
Cyanide	0.8	0.8	69.3	20	38.2	9.3
BOD Percent Removal	-	85%	-	-	-	>85% all months
TSS Percent Removal	-	85%	-	-	-	>85% all months

*In order to compare results to the permit limits, the maximum daily value for the year is reported as the maximum daily. Note that the limit for compliance /noncompliance determinations is based on the quantitation limit, which is defined as 0.2 micrograms per liter for mercury and 20.0 micrograms per liter for cyanide.

**The highest average monthly value for 2006 is reported for comparison against the RIPDES permit; for BOD and TSS the number of months in violation is entered.

TABLE 24 indicates that the facility is unable to meet the originally issued permit limits for certain metals, even with plant upgrades at full operational capacity. However, the compliance rate with the Consent Agreement permit limits was 100%, and the maximum daily nickel and zinc values were in compliance with the original permit limits. Additionally, effluent monthly average concentrations were very close to the permit limit value. This is largely the result of the full implementation of plant upgrades at the end of 2006. The combination of plant upgrades, continued successful implementation of the Pretreatment Program, improvements in Laboratory analytical procedures, and adherence to the EMDA's rigorous clean sampling techniques have all contributed to the improvements in effluent quality seen at Bucklin Point. Toxic influent events did not cause any known upsets to process control at the Bucklin Point facility in 2006. Protection of the facility is a principal objective of the Pretreatment and EMDA Sections.

Removal efficiencies for the conventional pollutants TSS and BOD were excellent during 2006: all months had monthly percent removal efficiencies greater than 91%. Additionally, there were no maximum daily violations of the consent decree value of 100 mg/l limit for final effluent TSS and BOD concentration levels in 2006. One TSS daily samples had a concentration greater than 50 mg/liter and no BOD analytical results were greater than that value. Monthly TSS and BOD average effluent values did not exceed 11 mg/liter in 2006, and the maximum monthly effluent concentrations for both of these parameters were 50% lower than the values observed during 2005.

TABLE 23
2006 Compliance Status with RIPDES & Consent Agreement Limits for Bucklin Point Facility

	2006 Compliance with RIPDES Permit Limits?		**2006 Compliance with Consent Agreement Limits?**	
Parameter	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
Hexavalent Chromium	Yes	Yes	N/A	N/A
Copper	**No**	**No**	Yes	Yes
Lead	Yes	Yes	N/A	N/A
Mercury	Yes	**No**	Yes	Yes
Nickel	Yes	**No**	Yes	Yes
Silver	**No**	**-**	Yes	-
Zinc	Yes	Yes	Yes	Yes
Cyanide	**No**	**No**	Yes	Yes
BOD Percent Removal	N/A	Yes	N/A	N/A
TSS Percent Removal	N/A	Yes	N/A	N/A

~Bucklin Point Final Effluent pH Variability and Permit Compliance

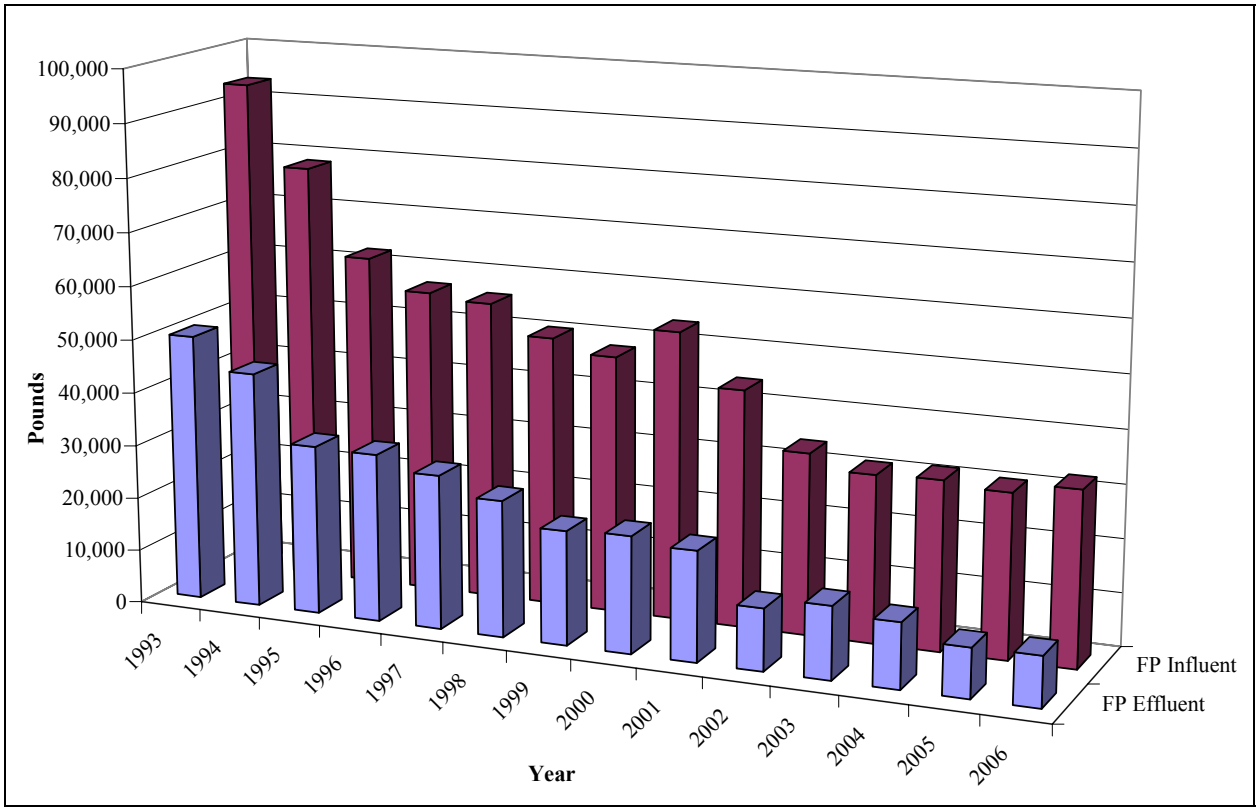
The pH of the Bucklin Point facility is measured daily by EMDA staff with the use of a high precision Orion pH meter. This analytical program is under the supervision of the NBC laboratory. The range of values measured for the year 2006 was between 5.9 and 7.1 s.u. Lower than expected effluent pH values were partly the result of the Biological Nutrient Removal (BNR) processes causing a reduction in alkalinity, or buffering capacity, of the wastewater. The addition of soda ash was necessary to increase effluent pH to within effluent permit limits during 2006. Despite this fact, all but one of the 365 measured values were within the permit range of 6.0 to 9.0 s.u., a testament to Bucklin Point Operations staff. No known low or high pH events caused any process upset during the course of the year.

EMDA began measuring pH on the influent daily beginning in June of 2005. Values ranged from 6.2 to 8.2 standard pH units during 2006. Collections are grab samples obtained at the bar screens utilizing EPA Method 150.1.

~Comparison of Influent and Effluent Loadings

FIGURE 23 contains a comparison of historic Field's Point influent and effluent loadings for total metals. The removal rate of metals entering the facility varied from 33 to 90 percent depending upon the pollutant in question in 2006. As previously mentioned, the NBC Laboratory's current detection limit for mercury is being lowered due to instrumental and sample handling improvements in the NBC Laboratory. Given these improvements more mercury samples are now detectable and can be measured with more accuracy to lower values. These improvements will continue to yield more accurate effluent concentrations and removal rates.

FIGURE 23
Field's Point Influent and Effluent Total Metals Loadings Trend Analysis



The term "removal" 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. Those metals that are strongly associated with the dissolved phase (e.g. nickel) will be discharged to the receiving waters with less removal than those with higher particulate phase partitioning (e.g. copper or lead) which are particle reactive and settle, with particles, into the sludge. TABLE 24 provides removal rates for metals and cyanide at both NBC Wastewater Treatment Facilities. From TABLE 24 it is easy to see that a major portion of all toxic pollutants, with the exception of nickel and cyanide, are removed from the waste stream at the NBC plants prior to effluent discharge to the receiving waters of Narragansett Bay. For Field's Point, the percent removal for all metals except zinc remained the same or increased during 2006 when compared to 2005. Cyanide percent removal also decreased, while copper percent removal at Field's Point remained the same when compared to 2005. Zinc and cyanide removals only decreased by 1% and 2% respectively. Hexavalent chromium is not required to be monitored at Field's Point by permit. The 2006 copper percent removal remained at the same level as in 2005, with all other metals at Bucklin Point except hexavalent chromium showing increased percent removals at Bucklin Point for 2006 compared to 2005. Cyanide percent removal also increased in 2006 at Bucklin Point, indicating that the new processes at Bucklin Point are, indeed resulting in a more efficient plant which produces better effluent quality.

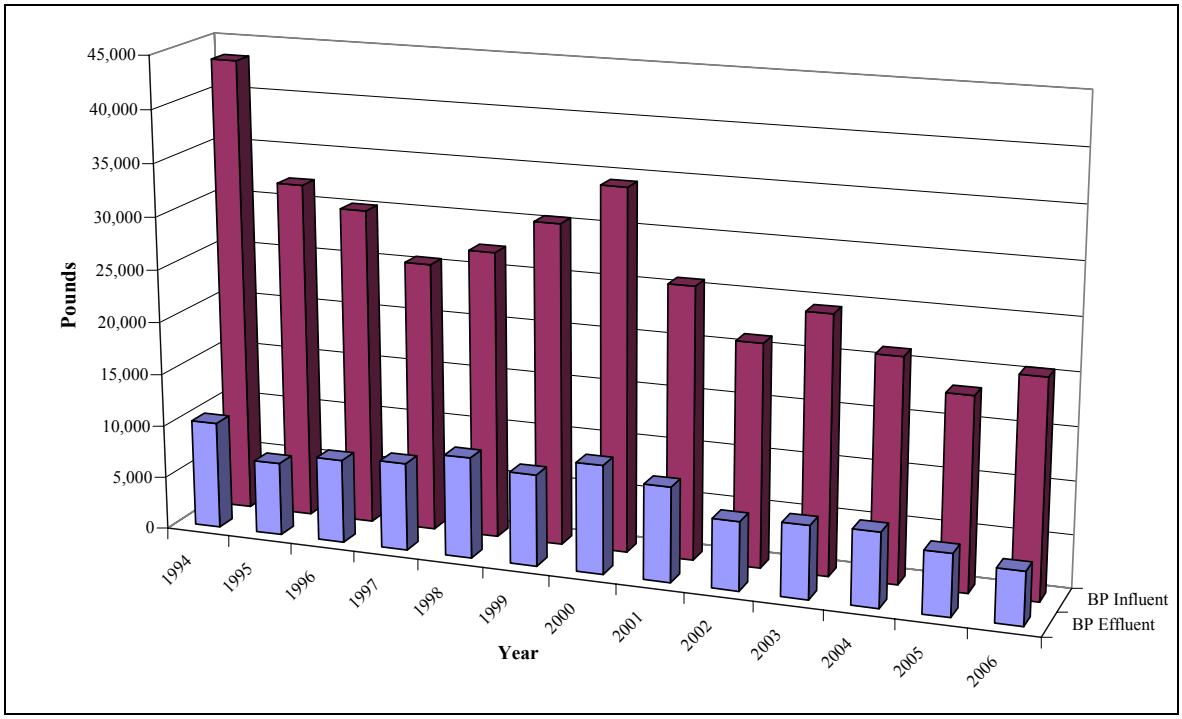
TABLE 24
Percent Removal of Metals and Cyanide for NBC Facilities

	Field's Point Concentrations			Bucklin Point Concentrations		
Parameter	**Influent (ppb)**	**Effluent (ppb)**	**% Removal**	**Influent (ppb)**	**Effluent (ppb)**	**% Removal**
Cadmium	0.80	0.15	81	0.31	0.04	87
Chromium	7.32	1.17	84	39.90	3.65	91
Hex. Chromium	NM	NM	NM	47.14	11.86	75
Copper	55.28	9.77	82	66.81	8.42	87
Lead	13.05	1.29	90	10.28	0.95	91
Mercury	0.072	0.014	81	0.060	0.010	83
Nickel	32.65	21.7	33	35.97	17.58	51
Silver	3.82	0.50	87	3.30	0.27	92
Zinc	100.76	28.7	72	118.13	37.42	68
Cyanide	16.49	7.4	55	7.01	3.40	52

FIGURE 24 provides a comparison between the historic influent and effluent total metal loadings for Bucklin Point. As noted for the Field's Point facility, a major portion of each pollutant observed in the plant influent is removed in grit and sludge during the treatment process. It is also clear that as influent concentrations increase, the effluent concentrations increase. 2006 data, however, show an increase in influent loadings and a decrease in effluent loadings, the result of improved treatment at the Bucklin Point

facility. Because the collection system of both facilities is dominated by combined sewers, metal loading is affected by rain events due to street and land runoff. Rain events also affect plant operations by causing a decrease in detention time in the facilities, thereby disrupting process treatment. Wet weather events must be taken into consideration in evaluating changes to effluent loadings.

FIGURE 24
Bucklin Point Influent and Effluent Total Metals Loadings Trend Analysis



POTW Effluent Dissolved Metals Study

In 2000, the NBC began a study to monitor the dissolved metals fraction of the effluent discharged to the receiving waters of the Providence and Seekonk Rivers. Dissolved metals were typically analyzed once per week at each POTW. Total metals were measured twice weekly. In 2006, Field's Point and Bucklin Point effluent samples were analyzed monthly for dissolved metals. The NBC and DEM use this data to better understand the fate, effect, and physical partitioning of metals discharged from the POTWs. Understanding the dissolved and total fractions for each metal, a measure of its phase partitioning, between dissolved and particulate, is important for the calculations of permit discharge limitations. POTWs are permitted in total metals. Therefore, the RIDEM must use a "metal translator conversion factor" to estimate the POTWs total metal fraction in the receiving waters that will be in the dissolved phase when writing a permit for a wastewater treatment plant.

Metals in the dissolved form are more readily absorbed by marine life than metals associated with particles. Resultantly, the EPA and DEM have established fresh and saltwater water quality criteria in dissolved metals concentrations. By sampling for total and dissolved metals, the NBC will be able to better assess the ratio of dissolved to total metals in POTW effluent and in the receiving waters.

TABLE 25 summarizes the data from 2006. The values are calculated by dividing the dissolved concentration by the total concentration. Dissolved phase is operationally defined as that portion which passes through a 0.45 micron filter. Due to implementation of more sensitive methods for analysis of dissolved metals, cadmium and chromium have been added to the summary table below. Previously, these metals were predominantly found at levels below the method detection limit. The calculated dissolved to total ratios listed below are annual averages of the dissolved concentrations and the total metals concentrations for days sampled.

TABLE 25
Final Effluent Phase Partitioning Study Results, 2006

Bucklin Point dissolved/total as a fraction									
	Cd	**Cr**	**Cu**	**Pb**	**Ni**	**Ag**	**Zn**	**Al**	**Fe**
Mean	0.69	0.98	0.68	0.49	0.95	0.44	0.89	0.27	0.51

Field's Point dissolved/total as a fraction									
	Cd	**Cr**	**Cu**	**Pb**	**Ni**	**Ag**	**Zn**	**Al**	**Fe**
Mean	0.80	1.00	0.72	0.32	0.95	0.44	0.80	0.13	0.46

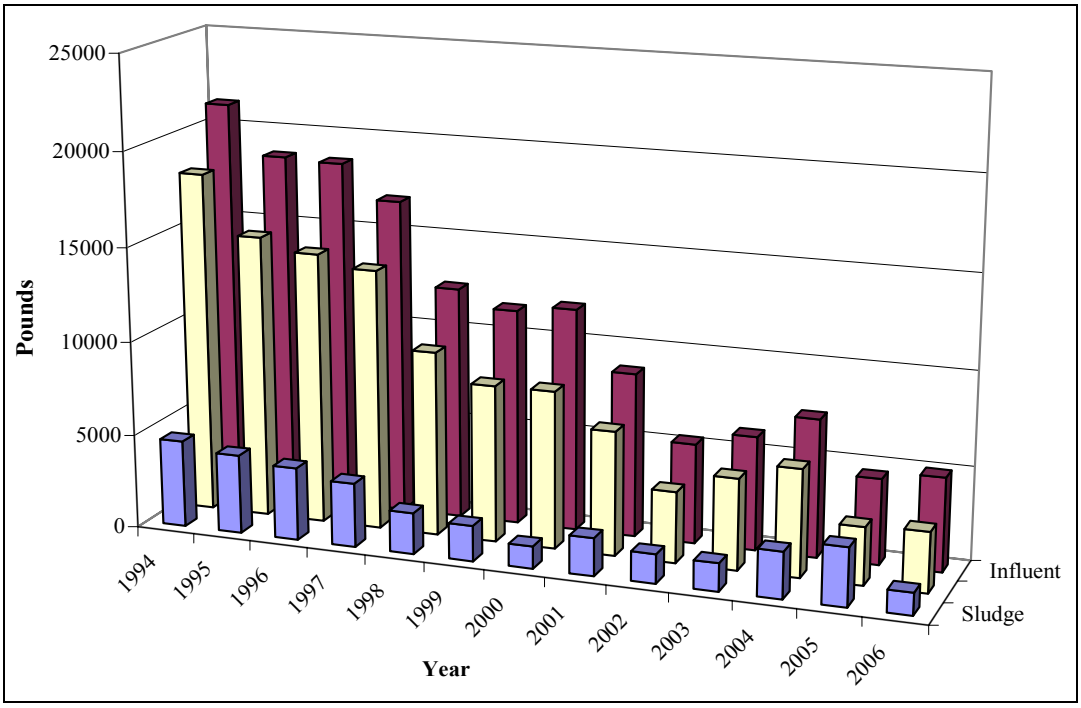
The results of this study show nickel and zinc to be the elements with the highest fraction in the dissolved phase, followed by cadmium and copper in the final effluent. Lead, silver, aluminum and iron are more strongly associated with particles, and thus the fraction of the metal in the dissolved phase is lower. Chromium measurements showed the greatest variability and the highest dissolved total fraction. At both Field's Point and Bucklin Point, the dissolved chromium exceeded the total chromium in some instances, indicating that the method sensitivity needs to be further enhanced. The NBC Laboratory developed methods and brought new instrumentation on-line in 2004 which provided more precise low-level measurements, with lower detection methods, and continually strives to provide the most sensitive and accurate methods for the NBC. Data for 2006 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 have been compared to influent and effluent loads since 1994 for three metals at both facilities. Nickel was included in this comparison due to its high incidence in the dissolved phase; approximately 95% of nickel in the final POTW effluent is in the dissolved form. Nickel is also a metal commonly associated with industrial sources. Zinc was selected because of its relative abundance and significant influent loadings. Copper was chosen due to its relatively high abundance and lower dissolved partitioning, approximately 60-70%. In the following figures, please note that only the final sludge loading is approximated, without consideration of removal of the three metals in the grit removal step of the treatment process. Historical and 2006 sludge data are included in ATTACHMENT VOLUME II, SECTION 11.

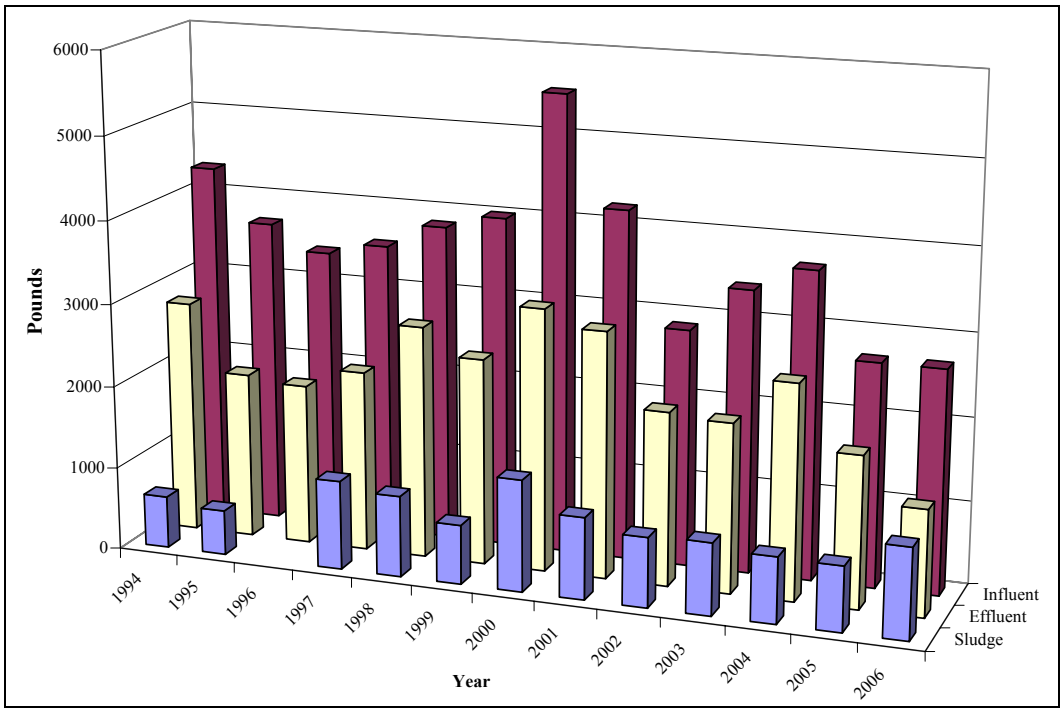
The Field's Point sludge loading results for nickel (FIGURE 25) show general agreement with declining nickel inputs to Field's Point influent. Note that the center row of columns on the figure represents final effluent loading. The agreement between influent loading compared to sludge and effluent loadings was 14% during 2006, indicating an improvement over the 26% discrepancy in the balance between influent and the sum of sludge and effluent calculated loadings. Because Nickel is primarily found in the dissolved phase, it is difficult to appropriately capture a true mass balance for this element. During 2006, sludge metals measurements were conducted biweekly as opposed to weekly for previous years.

FIGURE 25
Nickel Loading Trend Analysis in Field's Point Sludge, Influent and Effluent



Bucklin Point effluent nickel loading (FIGURE 26) follows the same general trends as influent loading. The agreement between 2006 nickel effluent loading in pounds and the value calculated from the influent loading minus the sludge loading is similar to the agreement observed at Field's Point, 13%. Given the number of variables within the wastewater treatment facility, a mass balance on the order of 10% is considered quite good, and this indicates that the sampling frequency and techniques employed are producing accurate and representative results. The change in influent sample handling implemented by the EMDA section may also have contributed to this improved mass balance. It also indicates that there is very little variability in nickel inputs to both facilities.

FIGURE 26
Nickel Loading Trend Analysis in Bucklin Point Sludge, Influent and Effluent



Sludge data for year 1996 is not included due to mid-year changes in sludge handling

Nickel is highly partitioned in the dissolved phase and shows the least removal in the treatment facilities. This agreement seems to indicate the following:

- Comparatively little nickel is being removed in the grit removal stage of treatment;
- Measurements of influent and effluent nickel concentrations are accurate;
- Sludge moisture measurements are valid;
- Little nickel contamination is present in sludge sampling.

FIGURES 27 and 28 show the loading trends for zinc for both facilities.

FIGURE 27
Zinc Loading Trend Analysis in Field's Point Sludge, Influent and Effluent

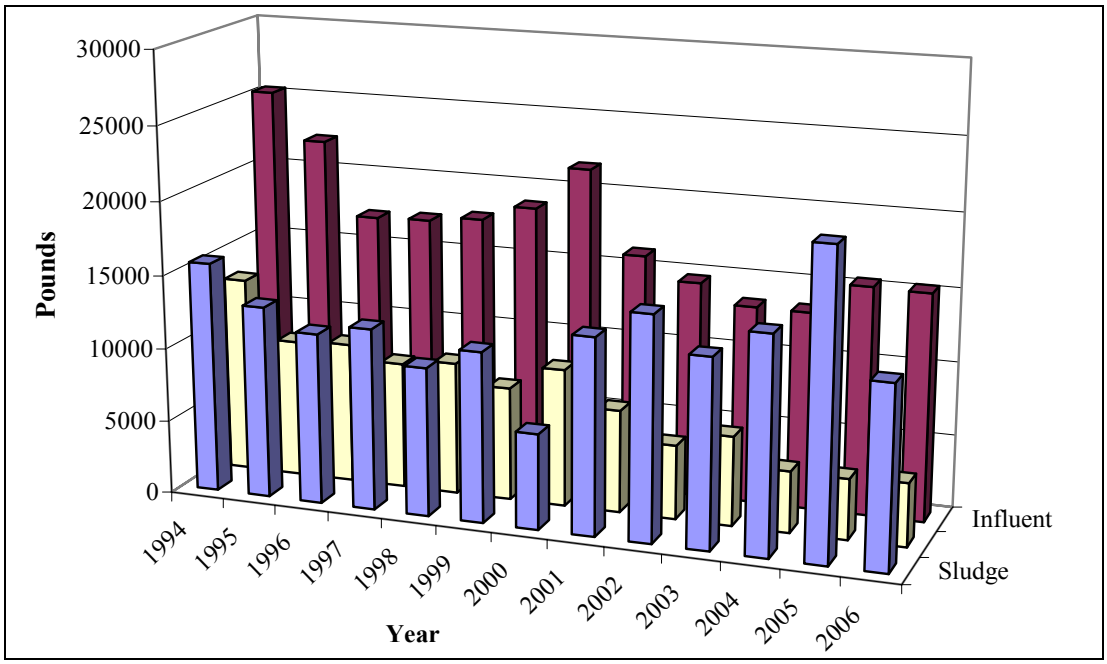
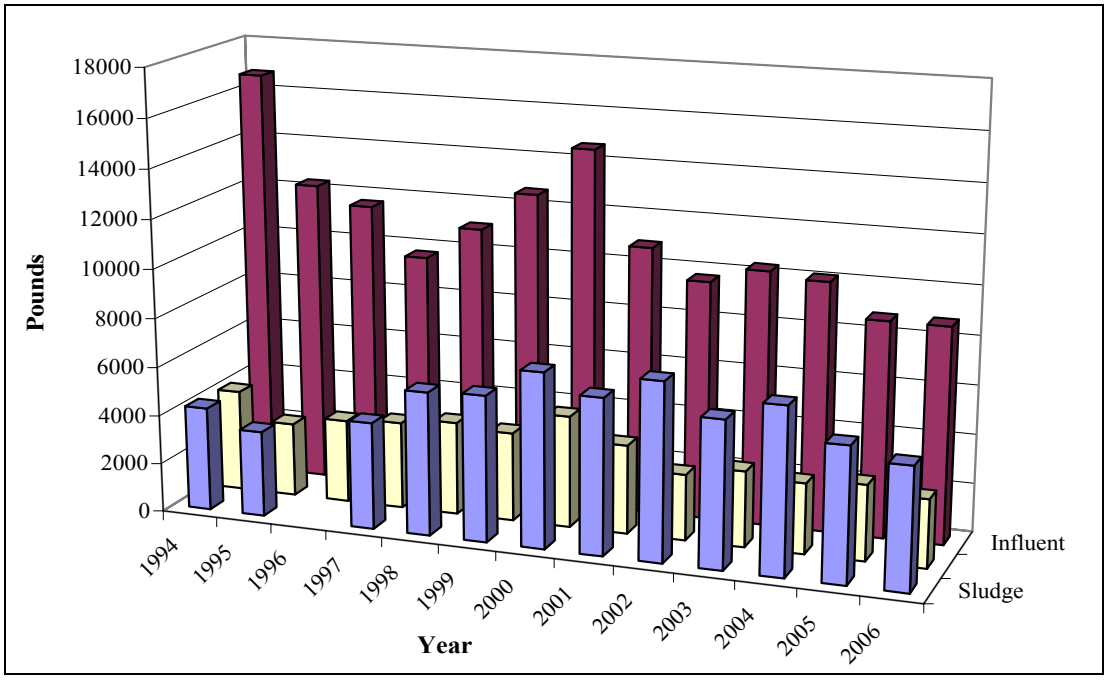


FIGURE 28
Zinc Loading Trend Analysis in Bucklin Point Sludge, Influent and Effluent



Sludge data for year 1996 is not included due to mid-year changes in sludge handling

FIGURES 29 and 30 present the copper loading trend analyses. Copper is more often found in the particulate phase than both nickel and zinc. NBC data show that slightly more than one-half of the copper in the final effluent is in the dissolved phase.

FIGURE 29
Copper Loading Trend Analysis in Field's Point Sludge, Influent and Effluent

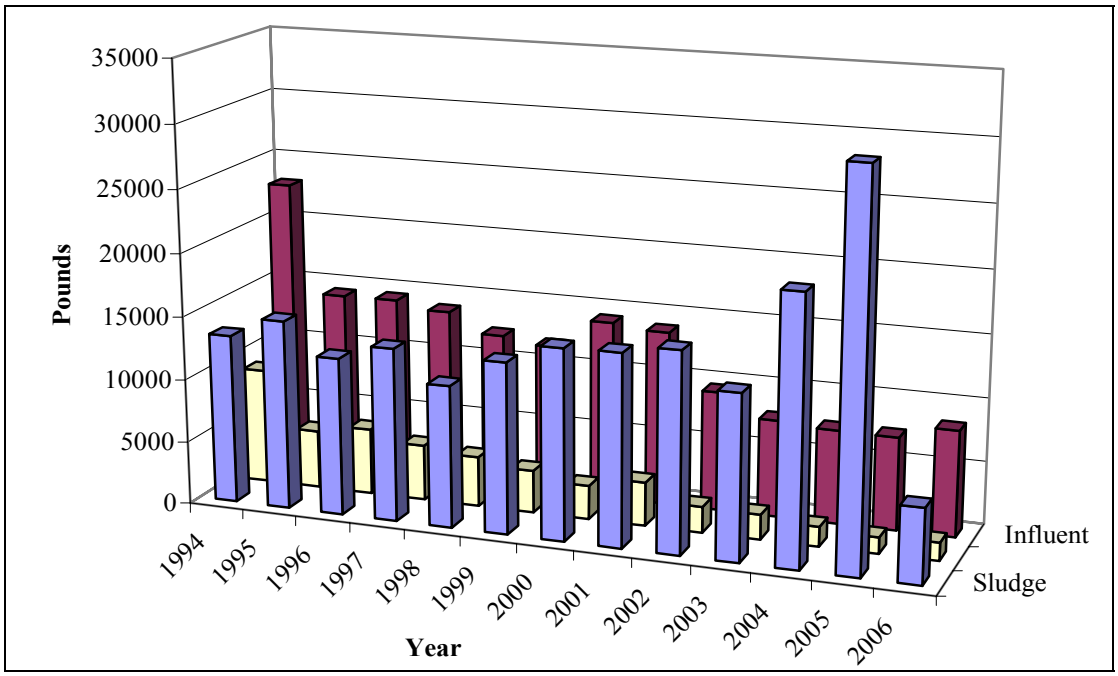
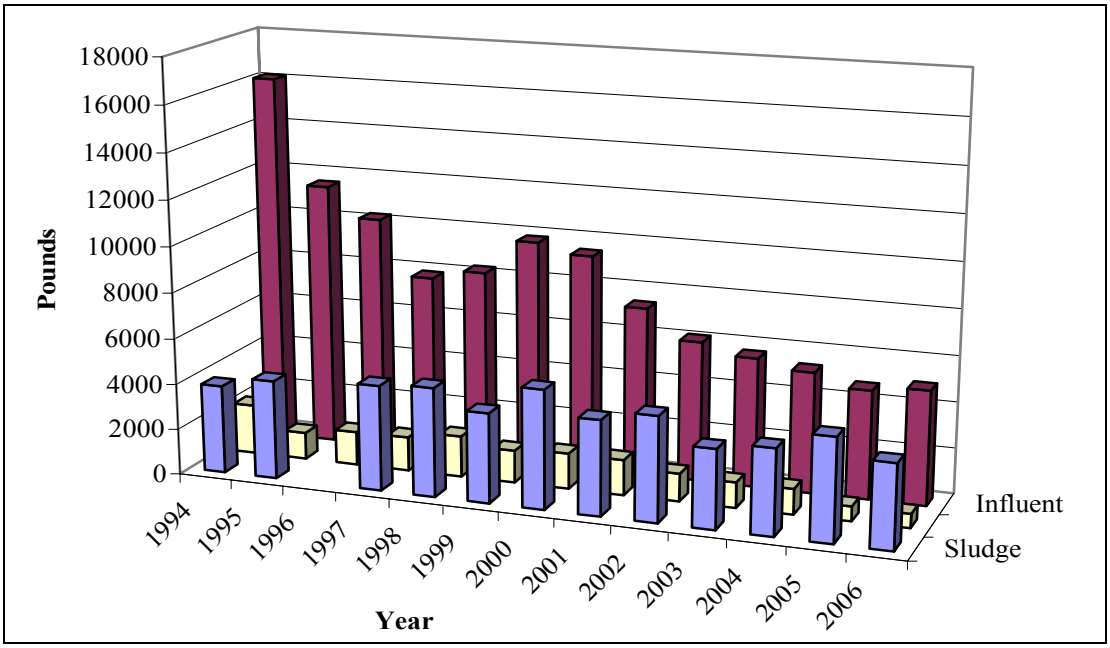


FIGURE 30
Copper Loading Trend Analysis in Bucklin Point Sludge, Influent and Effluent



Sludge data for year 1996 is not included due to mid-year changes in sludge handling

The other metals studied show similar mass loading balances at Field's Point. At Field's Point copper and zinc showed 14% and 7% agreement respectively when using the same mass balance calculation. Bucklin Point also shows reasonable agreement for these two metals: copper and zinc were within 16% and 13%, respectively, for this mass balance comparison.

EMDA investigated the influent sampling location in 2004 to determine if the lack of mass balance for zinc and copper at Field's Point was due to sampling issues. No conclusive evidence was found to suggest that this was the case. Bucklin Point's influent sampling sites are placed in interceptor pipes feeding the plant. The new technique of flow proportioned mixing at Bucklin Point prior to influent metals analysis, based on these results, appears to produce more represent results for loadings to the facility. The Field's Point influent sampling location is in a channel that feeds the grit removal tanks. Field's Point sludge is dewatered using a belt press while the Bucklin Point facility utilizes a centrifuge, a difference between the two facilities in sludge handling methods. The sampling of dewatered sludge or filter cake is performed at Field's Point, while at Bucklin Point the analysis of sludge dewatering by centrifuge began mid-year. Prior to that date, final sludge without dewatering was analyzed for metals.

BOD and TSS Loadings

BOD and TSS loading historical trend analysis provide an interesting means of determining the ability of the individual facility to handle variability in influent loadings without disruption of plant operations. For Bucklin Point, FIGURES 31 and 32 show the 30-day averaged trend for BOD and TSS influent and effluent. Effluent BOD and TSS show a decline beginning in 2005 and throughout 2006 at Bucklin Point which is largely attributable to initiation of improved treatment processes as a result of completion of facility upgrades throughout the year.

FIGURE 31
TSS Loading Trend Analysis for Bucklin Point Influent and Effluent

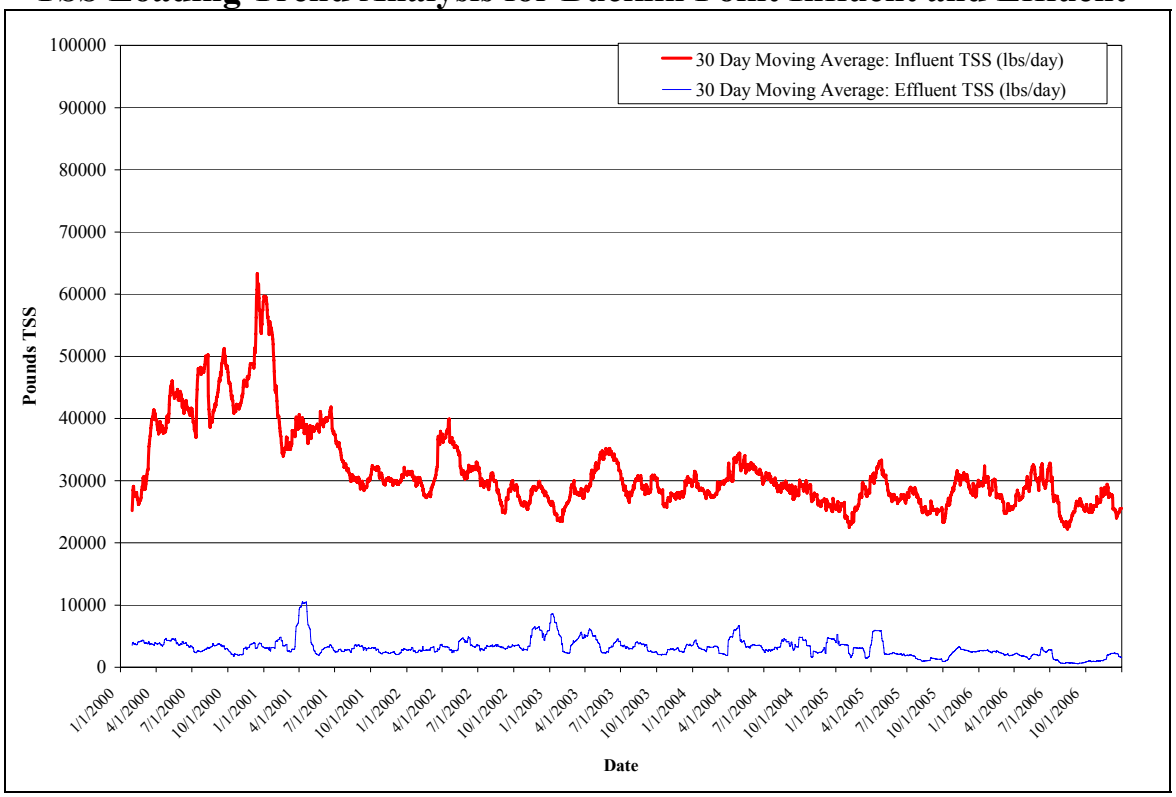
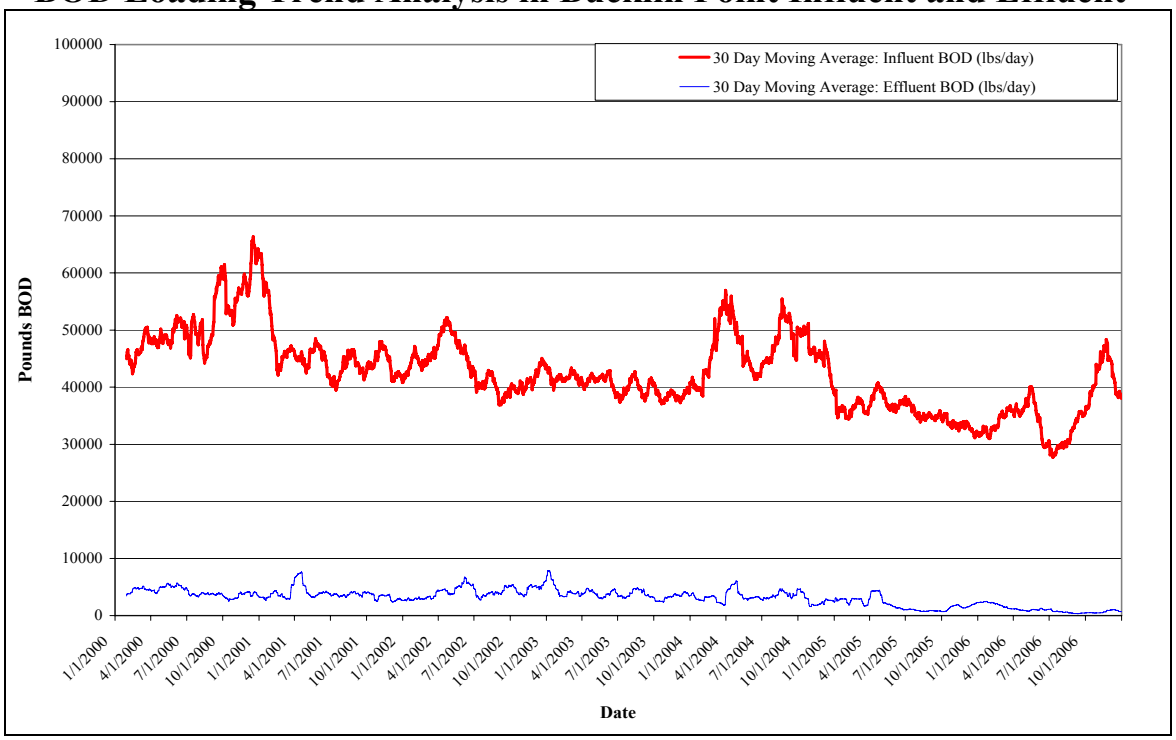


FIGURE 32
BOD Loading Trend Analysis in Bucklin Point Influent and Effluent



FIGURES 33 and 34 show this averaged data for Field's Point. Periods of high loading are possibly attributable to maintenance within the collection system, or wet weather events. For Field's Point, high CSO Abatement Project mining TSS inputs are responsible for the observed increase in influent TSS loading during 2005. The CSO Phase 1 mining was completed on December 1, 2005, clearly shown by the rapid decrease in influent loading of TSS. Changes in the sedimentation pond configuration for solids removal were implemented as a result of the observed increased solids loading. It is interesting to note that, despite these transient increases in the influent loading rates, effluent loadings show very little variability. This demonstrates the buffering capacity of both facilities, the ability of Operations to effectively adjust conditions to treat incoming pollutants, and an overall improvement in the removal of these conventional pollutants.

FIGURE 33
TSS Loading Trend Analysis in Field's Point Influent and Effluent

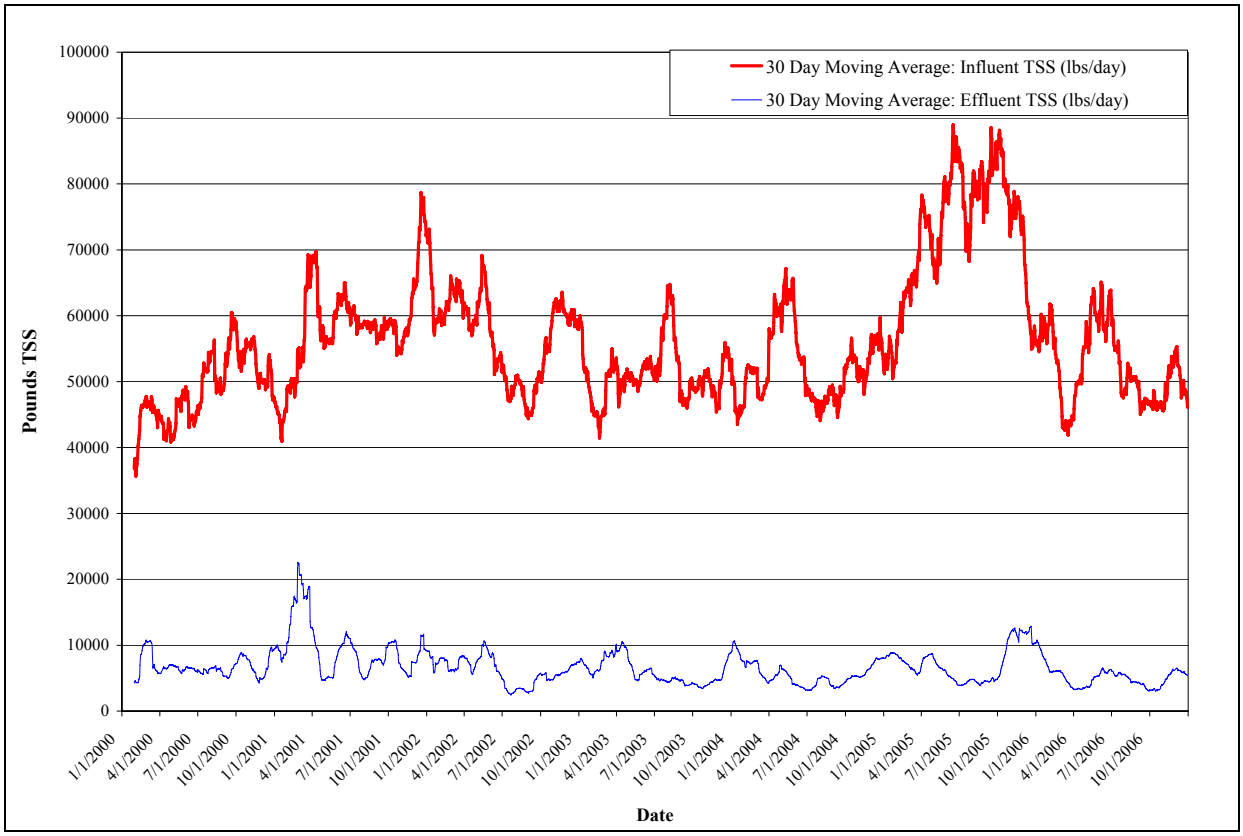
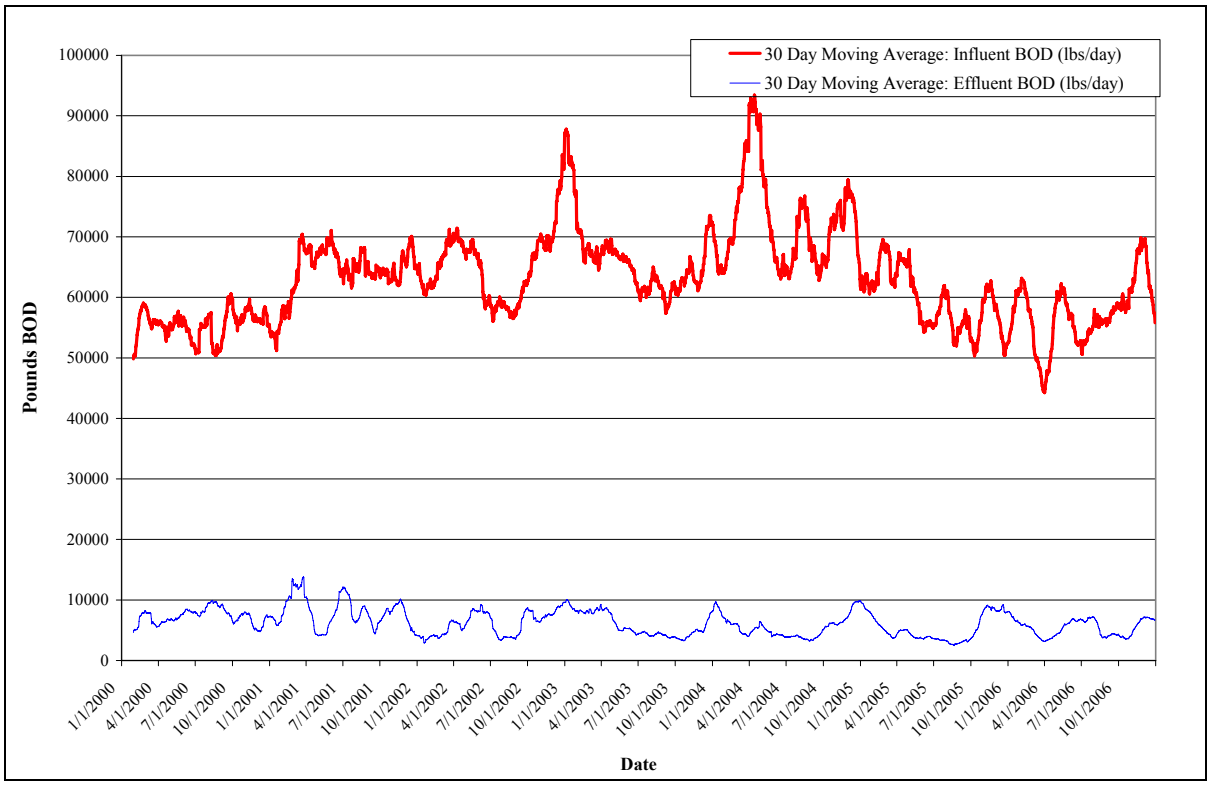


FIGURE 34
BOD Loading Trend Analysis in Field's Point Influent and Effluent



Comparison of Final Effluent Concentrations in 2006 and Saltwater Quality Criteria of Receiving Waters

A comparison of final effluent concentrations of permitted parameters and water quality criteria is useful to evaluate potential impact of the treatment plants on the receiving waters. TABLE 26 below, labeled Comparison of Final Effluent Concentrations and Water Quality Criteria of Receiving Waters, lists measured dissolved and total metal concentrations in the effluent, as well as cyanide, pH, and fecal coliform bacteria compared to saltwater quality criteria determined by DEM. Comparisons are made between annual averages and chronic criteria that protect long-term exposure and annual maximums to acute criteria that are established to protect marine life and waters from short-term exposures to pollutants. The results listed are the result of analyses by the NBC laboratory. The laboratory has implemented many improved clean sampling and clean analysis procedures.

The trace metal study conducted by NBC and URI in 2001 and 2002 found both the Seekonk and Providence River reaches of Narragansett Bay meeting EPA water quality criteria for metals. These findings were presented to DEM, and as a result of this work, the Seekonk and Providence Rivers have been removed from the state's EPA 303(d) list of impaired waterbodies for metals.

TABLE 26

Comparison of Final Effluent Concentrations and Water Quality Criteria of Receiving Waters

Pollutant	Phase and statistical category	Bucklin Point Effluent results in ppb	Field's Point Effluent results in ppb	Chronic WQC in ppb	Acute WQC in ppb
Copper	Dissolved phase effluent annual average	5.38	6.53	3.1	
	Dissolved phase effluent annual maximum	6.97	8.03		4.8
	Total effluent annual average	11.83	9.77		
	Total effluent annual maximum	26.60	21.20		
Lead	Dissolved phase effluent annual average	0.47	0.42	8.1	
	Dissolved phase effluent annual maximum	0.94	0.63		210
	Total effluent annual average	1.53	1.29		
	Total effluent annual maximum	4.79	3.00		
Nickel	Dissolved phase effluent annual average	17.18	18.35	8.2	
	Dissolved phase effluent annual maximum	26.50	27.50		74
	Total effluent annual average	28.43	21.73		
	Total effluent annual maximum	35.90	182.0		
Silver	Dissolved phase effluent annual average	0.21	0.18	NA	
	Dissolved phase effluent annual maximum	1.49	0.32		1.9
	Total effluent annual average	0.66	0.50		
	Total effluent annual maximum	2.40	2.63		
Zinc	Dissolved phase effluent annual average	29.40	21.70	81	
	Dissolved phase effluent annual maximum	39.10	28.70		90
	Total effluent annual average	48.10	28.71		
	Total effluent annual maximum	75.20	50.50		
Mercury	Dissolved effluent annual average			0.94	
	Dissolved effluent annual maximum				1.8
	Total effluent annual average	0.041	0.014		
	Total effluent annual maximum	0.065	0.0958		
Cyanide	Total effluent annual average	7.05	7.36	1.0	
	Total effluent annual maximum	28.99	18.90		1.0
pH		standard units	standard units		
	Total effluent annual minimum	5.9	6.4	> 6 < 8.5	
	Total effluent annual maximum	7.1	7.2		> 6 < 8.5
Fecal Coliform Bacteria		MPN/100 ml.	MPN/100 ml.	MPN/100 ml. geomean	MPN/100 ml.
	Total effluent annual geomean	11	16	50	
	% > 500 MPN/100 ml.	0%	0.27%		< 10%

Dissolved metals are measured monthly at the two plants and total metals are measured twice weekly. TABLE 26 details the annual averages and annual maximums for dissolved and total metals. Saltwater quality criteria are written as dissolved values, based on a metal 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 saltwater 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.

A summary by pollutant parameter follows:

- Lead continues to show annual average and maximum dissolved concentrations significantly lower than the chronic and acute water quality criteria at both facilities. The annual maxima for total lead at both Field's Point and Bucklin Point are nearly two orders of magnitude lower than the acute dissolved lead criteria.
- Silver shows annual maximum dissolved concentrations lower than the acute water quality criteria; there is no chronic saltwater quality criterion established for silver.
- Mercury analyses of the total sample, particulate and dissolved combined, at both facilities, have annual averages roughly ten times lower than the chronic saltwater quality criteria and acute saltwater quality criteria. The mercury chronic saltwater water quality criterion was increased from 0.025 ppb to 0.94 ppb as a result of changes in EPA mercury toxicity methodology.
- Maximum values for total zinc at both facilities are less than the corresponding chronic and acute criteria for the dissolved species.
- Nickel's dissolved annual maximum concentration and average total annual concentration at both facilities are below the acute saltwater quality criteria. The Bucklin Point maximum total annual concentration is lower than the acute water quality criteria. The Field's Point total annual maximum for 2006 exceeds the acute criterion, but the dissolved fraction of this does not.
- Copper concentrations in the effluent of both plants exceed saltwater quality criteria, however the maximum dissolved concentrations were lower at both plants during 2006 than 2005, and are approaching the chronic water quality criterion.
- Cyanide shows effluent concentrations greater than the saltwater quality criteria at both plants, even though loadings significantly have been reduced at both facilities in 2006.
- Hydronium ion concentration, or pH, shows the annual effluent minimums and maximums falling within saltwater quality criteria at Field's Point, with one sample falling outside of this range at Bucklin Point.
- Fecal coliform bacteria weekly geometric mean values were used to determine whether the facilities met chronic water quality criteria for fecal coliform, and a count of the number of samples that exceeded 500 was used to establish whether acute water quality criteria were met. Both facilities meet saltwater quality criteria for chronic and acute comparisons based on these calculations.

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 NBC's Pretreatment and Pollution Prevention Programs. The Pretreatment and Pollution Prevention 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. Facilities upgrades at Bucklin Point are making very clear improvements in effluent quality for conventional pollutants, as well as metals, cyanide, and nutrients. The aim of the EMDA 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 the public interest. The Laboratory Section continues to improve analytical procedures and research new technologies to improve the accuracy of all analytical results of this sampling.

Overall, the toxic pollutant loadings to the two NBC Wastewater Treatment plants continue to decrease over time, a clear reflection of the fine work done by the NBC toxic reduction and control programs. The level of toxics in the effluent discharged from the NBC plants also continues a downward trend.

Recent NBC studies have shown that significant portions of toxic metal pollutants originate from residential sources and the NBC Rivers Study performed in 2002 has shown excellent results. Four seasonal surveys were conducted during 2001 and 2002 that monitored the receiving waters of Bucklin Point and Field's Point. Based upon the results of these seasonal surveys, DEM has removed these receiving waters from the EPA 303(d) List of Impaired Waters. This is a clear testament to the effectiveness of the NBC toxic reduction and control program.

VI. ENFORCEMENT

NBC Enforcement Actions

The Narragansett Bay Commission (NBC) will initiate some type of enforcement action against 100% of those persons and companies who violate the NBC Rules and Regulations. A wide range of enforcement actions is 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 the past year and 2,381 Notices of Violation were issued for various violations of NBC Rules and Regulations. During 2006, the NBC was not required to issue any administrative orders. 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 discussion sheet documenting the conversation is prepared and placed in the user's 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 are computer generated and may be tailored by the relevant engineer or technician as appropriate. A Notice of Violation specifically states that its issuance does not prohibit other enforcement action. It also informs the violator that the non-compliance may result in publication of the firm's name in the state's largest daily newspaper and explains that inclusion on that list will subject the violator to liability for payment of the publication. In addition, the Notice of Violation letters refer the user to free technical and compliance assistance from the NBC Environmental, Safety and Technical Assistance Program. The most typical Notices of Violation are described below. Examples may be viewed in ATTACHMENT VOLUME I, SECTION 4.

    ~ *Letters of Deficiency* are Notice of Violation letters issued to notify the industrial user of deficiencies observed during a facility inspection. The Letter of Deficiency is prepared and issued by the engineer or technician that conducted the inspection or observed the violation, is sent to the user via Certified Mail, and requires the user to correct the noted deficiency within a specific time period. The NBC issued 227 Letters of Deficiency to users during 2006. An example of a Letter of Deficiency is provided in ATTACHMENT VOLUME I, SECTION 4.

~ *Notices for Failure to Meet Standards* are issued by the Pretreatment staff each time NBC or user self-monitoring results indicate a violation of NBC or EPA discharge limitations, including violations of the monthly average limits. The NBC issued 156 notices of this type to industrial and commercial users during the past year.

~ *Notices of pH Violations* are issued by the Pretreatment staff each time a user submits a monthly pH self-monitoring report that reveals violations of NBC pH discharge limitations. The NBC issued 245 notices of this type during 2006.

~ *Notices of Failure to Submit Monitoring Reports* are Notice of Violation letters issued to users for failure to submit a Self-Monitoring Compliance Report, pH Monitoring Report or Zero Discharge Certification on time. A similar letter is issued for failure to properly complete or sign a Self-Monitoring Compliance Report or pH Monitoring Report. The NBC issued 676 Notices of Violation to industrial and commercial users during the past year detailing these various types of violations. A similar Notice of Violation is issued for failure to sample or analyze for all required parameters. During 2006, eleven such letters were issued to users that either failed to sample or analyze for all required parameters.

~ *Notices of Failure to Immediately Report Violations* are issued to users that fail to notify the NBC within twenty-four (24) hours of becoming aware of a violation of NBC effluent limitations in accordance with EPA regulation 40 CFR§403.12(g)(2). During 2006, there were 27 notices of this type issued to violators of this regulation.

~ *Notice of Failure to Satisfy NBC Requirements* are issued by the Pretreatment staff when a user exceeds a specified deadline for submission of any of a number of various types of documents or for exceeding the completion date specified for tasks required by the NBC. Examples of such tasks may include installation of spill control facilities, pretreatment equipment, flow meters, sampling ports, etc. During 2006, the NBC issued a total of 618 notices of this type.

~ *Failure to Pay Permit Fees* is a Notice of Violation issued by the Customer Service Section to firms greater than 90 days late in paying permit fees. During 2006, the Pretreatment staff issued 330 letters of this type to users in the NBC district.

- ~ *Letters requiring an increase in frequency of self-monitoring* are issued to users who violate NBC discharge limitations and require the user to sample their wastewater weekly, or even daily, to demonstrate progress toward meeting effluent limitations. Once the user violates NBC discharge limitations, the Failure to Meet Standards Notice of Violation letter is automatically issued. During 2006, the Pretreatment Section issued 156 Notice of Violation letters that required resampling to be conducted immediately by violating users. This Notice of Violation requires weekly sampling to be conducted and continued until the user demonstrates at least four (4) consecutive monitoring reports indicating full compliance with effluent standards. This enforcement protocol is effective at bringing the user into compliance with effluent standards because the added expense and burden of weekly sampling encourages the quick correction of existing problems.

- *Letters of Wastewater Discharge Permit Suspension* are typically issued to Significant Industrial Users 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 2006, 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's 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 the user's name in the state's largest daily paper will result if a violator meets the criteria for Significant Non-Compliance as defined in 40 CFR 403.8(f)(2)(vii). All Notices of Violation 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 15 firms found to be in Significant Non-Compliance with NBC regulations were listed in an advertisement in the PROVIDENCE JOURNAL on March 1, 2007 for violations occurring between October 1, 2005 and December 31, 2006**.** A copy of this public notice is provided later in this chapter in FIGURE 10.

- *Meetings with the user* are held to discuss problems or violations the firm may be experiencing, often producing 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 their potential financial liability should their non-compliance status continue, often resulting in compliance.

- *Administrative Orders* ("AO") are Orders issued by the NBC to address repeated or serious instances of noncompliance. Administrative Orders are classified into one of four general types (Compliance Orders, Cease and Desist Orders, Consent Orders and Termination/Suspension of Permit/Service Orders). The Administrative Order may or may not assess an administrative penalty. Depending on the type of Administrative Order issued, the user may be required to immediately cease discharging or achieve compliance with NBC rules and regulations within a specified time frame. Administrative Orders are considered the harshest control vehicle for ensuring compliance with NBC regulations. All Orders 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. Administrative Orders are issued by NBC's General 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 2006, no civil suits were filed.

2006 Administrative Orders

During 2006, the NBC was not required to issue any Administrative Orders (AO) for violations of NBC rules and regulations and/or permit requirements.

A sample Administrative Order is provided in ATTACHMENT VOLUME I, SECTION 4. Furthermore, a history of all enforcement actions taken by the NBC as of December 31, 2006 is found at the end of this chapter in TABLE 28. The table provides a history of the penalties assessed, the penalties paid and the present status of each enforcement action. A brief summary to update the status of Administrative Orders is provided later in this chapter.

Permit Suspensions

As stated in Article 8.14 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 2006, no Letters of Wastewater Discharge Permit Suspension were issued.

Update of Past Enforcement Actions

Field's Point District

- AO #FP-01-05 was issued against Wal-Mart Stores, Inc. on or about October 17, 2005. The AO cited Wal-Mart Stores, Inc. for failing to take proper precautions to prevent debris from entering into NBC facilities in violation of Article 4.2 of NBC's Rules and Regulations; failure to take proper precautions to prevent damage to manhole frames, covers, and sewer structures in violation of Article 4.2 of NBC's Rules and Regulations, failure to timely apply for a sewer alteration permit in violation of Article 4.5 of NBC's Rules and Regulations; and failure to post sewer connections in violation of permit requirements. An administrative penalty of $61,000.00 was assessed. Wal-Mart Stores, Inc. was further ordered to immediately submit to the NBC in writing a report stamped by a Rhode Island Professional Engineer certifying that the soil compacting operations could not in any way adversely affect NBC facilities; immediately commence monitoring of soil compaction as directed by NBC, provide NBC with weekly reports, and notice within 24 hours if results exceed allowable limits specified in the report; immediately complete the application process for the sewer alternation permit; reimburse NBC for the cleaning and televising of the sewer lines both immediately and post construction, in order to assess any and all damage to NBC facilities, associated with 51-85 Silver Spring Street in Providence, RI; immediately insert and maintain debris platforms in both manholes and overall NBC facilities forthwith as well as, throughout the duration of construction activity; and to post their sewer alteration permit upon receipt. Wal-Mart Stores, Inc. preserved its right to hearing. Negotiations resulted in the execution of a Settlement Agreement on September 18, 2006 wherein Wal-Mart Stores, Inc. agreed to pay $40,000.00 upon execution of the agreement. Wal-Mart Stores, Inc fulfilled all of their Settlement Agreement requirements.

- AO #FP-01-04 was issued against Elmhurst Extended Care on or about March 5, 2004. The AO cited Elmhurst Extended Care for failing to submit Self-Monitoring Compliance Reports; failing to maintain and operate its required grease removal units; and failing to submit written certification that its grease removal units have been serviced. An administrative penalty of $20,000 was assessed. Elmhurst Extended Care was further ordered to immediately provide NBC with written verification that its grease removal units were operational, and that all past due compliance monitoring reports were submitted. Elmhurst Extended Care preserved its right to hearing. Negotiations resulted in the execution of a Consent Order on October 27, 2004 wherein Elmhurst Extended Care agreed to pay an administrative penalty of $7,500 over a 12 month period. Stipulated penalties of $250 for each occurrence of non-compliance with NBC and/or categorical discharge limitations for a one year period were also imposed. Elmhurst Extended Care fulfilled all of their Consent Order requirements.

- AO #FP-02-04 was issued against Roger Williams Medical Center on or about March 5, 2004. The AO cited Roger Williams Medical Center with failure to comply with the NBC's effluent limitation for silver, failure to submit Self-Monitoring Compliance Reports; failure to submit resampling results and/or reports explaining for reasons for violations and the corrective action(s) taken to prevent future noncompliance, failure to properly maintain a required grease removal unit; and failing to notify the NBC writing certifying that its grease removal unit had been serviced and was operational. An administrative penalty of $30,000 was assessed. The AO further ordered Roger Williams Medical Center to immediately provide NBC with written verification that its grease removal unit was operational, all past due compliance monitoring results, and its resampling results for silver. Roger Williams Medical Center preserved its right to hearing. Negotiations results in the execution of a Consent Order on October 27, 2004 wherein Roger Williams Medical Center agreed to pay an administrative penalty of $12,400 over a 12 month period. Stipulated penalties of $250 for each occurrence of non-compliance with NBC and/or categorical discharge limitations for a one year period were also imposed. Roger Williams Medical Center fulfilled all of their Consent Order requirements.

- AO #FP-01-03 was issued against the Town of Johnston on or about September 10, 2003. The AO cited the Town of Johnston with failing to apply for a Building Sewer Connection Permit prior to commencing construction of a fire station which will be serviced by the NBC owned facilities. An administrative penalty of $10,000 was assessed. Additionally, the Town of Johnston was ordered to immediately remove any illegal connections to the NBC facility, and submit a required Building Sewer Connection Permit application. The Town of Johnston preserved its right to a hearing. Negotiations are ongoing to resolve this AO in conjunction with AO #FP-05-02.

- AO #FP-02-03 was issued against Victory Finishing Technologies (Victory) on or about September 10, 2003 for failing to comply with the NBC's effluent limitations for pH, cyanide, nickel, and silver; failing to operate and maintain its pretreatment system; failing to maintain records of its pretreatment system; failure to submit pH Monitoring Reports and Self-Monitoring Compliance Reports on time; failing to submit pretreatment plans to the NBC for approval; and, failing to follow its Spill and Slug Prevention Control and Countermeasure Plan. Due to the fact that Victory was in bankruptcy, prior to issuance of the AO, a Motion for Relief from Stay was filed with the US Bankruptcy Court and was granted. An administrative penalty of $55,000 was assessed. The AO also required Victory to immediately comply with effluent limitations, file all required reports on time, adhere to terms of its spill and slug prevention control plan, submit a summary report evaluating its waste treatment system's functionality, and notify the NBC for approval prior to making changes to process or pretreatment systems in the facility. Victory preserved its right to hearing and a status conference was held in November 2003 addressing the violations. Due to the fact that Victory declared bankruptcy, prior to issuance of the AO, a Motion for Relief from Stay was filed with the U.S. Bankruptcy Court and was granted. Negotiations in this matter resulted in the execution of a Consent Order on June 8, 2005 wherein Victory agreed to pay an administrative penalty of $5,000, hire a consultant to prepare an NBC approved environmental training session and undergo an audit. Victory has fulfilled all of their Consent Order requirements.

- AO#FP-05-02 was issued against the Town of Johnston on or about October 24, 2002. The AO cited the Town of Johnston with the installation of a sewer connection to the NBC facilities in violation of an issued Sewer Alteration Permit, and direct interference and damage to an NBC owned sewer facility. An administrative penalty of $25,000 was assessed and the Town of Johnston was ordered to immediately cease and desist from any further construction activity near the NBC facility, immediately remove the illegal connection to the NBC facility, and repair and replace the damaged manhole as a result of the illegal connection. Negotiations are ongoing to resolve this AO and AO #FP-01-03.

- AO #FP-01-00 was issued against Crown Plating, Inc. and William D'Agostino on June 20, 2000. An administrative penalty of $6,250 was assessed. Crown Plating failed to preserve its right to hearing. The NBC filed a Superior Court action seeking a mandatory injunction to have Crown Plating's connection to the NBC facilities permanently sealed. This company is now out of business. The Superior Court granted the NBC's injunction, and the facility has been closed and its process drains were sealed. The Court also granted the NBC $19,000 for permit fees, consumption fees, and the penalty amount. The NBC received judgment to collect these amounts through a wage garnishment from William D'Agostino. Mr. D'Agostino is in compliance with the terms of the judgement.

- AO #FP-02-98 was issued against Ad-Tech, Inc. and Gary Sugal, on March 17, 1998. An administrative hearing was held on December 17, 1998 and March 9, 1999. Following conclusion of the hearing, the Hearing Officer issued a decision recommending that the NBC issue a Final Decision and Order assessing a $75,000 penalty against Ad Tech, with Sugal being jointly and severally liable for $55,000 of the $75,000 penalty. Thereafter, the NBC issued a Final Decision and Order requiring Ad Tech to pay a $75,000 penalty and holding Sugal jointing and severally liable for $55,000. Ad Tech and Sugal appealed the matter to Superior Court. This appeal is still pending.

Bucklin Point District

- AO#BV-01-05 was issued against Tanury Industries and Thomas Tanury (collectively hereinafter "Tanury") on or about September 14, 2005. The AO cited Tanury with failure to comply with the NBC effluent pH limitations; failure to maintain records of its pretreatment system; failure to maintain records of its pretreatment system; failure to properly report effluent pH discharges; failure to operate and maintain its pretreatment system; failure to properly store chemical solutions as required; failure to notify the NBC prior to making changes in its process operations or pretreatment; failure to comply with the NBC's effluent discharge limitations for copper, nickel, silver, cyanide, and total residual chlorine; failure to submit required reports and results on time' failure to timely pay its annual discharge permit fee; failure to comply with terms of the Wastewater Discharge Permit i.e. – illegal/unpermitted dumping of untreated wastewater; and failure to accurately report discharges from the groundwater remediation system.

An administrative penalty of $108,500.00 was assessed. The AO further ordered Tanury to immediately comply with all NBC effluent pH limitations; immediately begin to properly maintain the Pretreatment logbook; immediately begin proper recording or effluent pH discharges; immediately commence proper operations of the entire pretreatment system at Tanury Industries; immediately institute all steps necessary to ensure proper storage of all chemical solutions; immediately institute all steps necessary to ensure that the NBC is notified prior to changes being made to Tanury's process operations or pretreatment; immediately comply with all NBC effluent discharge limitations immediately comply with all NBC effluent discharge limitations; immediately institute all steps necessary to ensure that all required reports and results are received on time; immediately institute all steps necessary to ensure timely payment of its annual Wastewater Discharge permit fee; immediately institute all steps necessary to ensure permit compliance and proper storage of all chemicals solutions; and immediately begin proper recording of discharges from groundwater remediation system. Tanury preserved its right to hearing. Negotiations resulted in the execution of a Consent Order on December 31, 2005 wherein Tanury agreed to pay an administrative penalty of $24,000 over a 12 month period. In addition, Tanury agreed to expend $70,000 to upgrade its existing pretreatment operations. Said pretreatment improvements shall include both short term and long term modifications/improvements to be completed by November 30, 2007. Stipulated penalties for violating any of the effluent discharge limitations, sampling and/or reporting requirements set forth in its Wastewater Discharge Permit as follows; beginning with the month of November 2007 and for six months thereafter, Tanury shall pay $100.00 per parameter for each violation of pH effluent values of $\geq$ 0.2 or more standard units and $250.00 for each metal exceedance for copper, nickel, and cyanide by any amount based on user or NBC monitoring. Tanury is currently in compliance with pretreatment requirements.

- AO#BV-01-03 was issued against CHN Anodizing on or about March 27, 2003 for failing to comply with NBC effluent limitations for pH, nickel and chromium; failure to operate and maintain its pretreatment system; failure to maintain records of its pretreatment system; failing to submit Self-Monitoring Compliance and pH Monitoring Reports on time; failure to properly report effluent pH discharges; failing to immediately notify the NBC of a spill at the time of the incident; and, improperly storing chemicals according to an NBC approved spill control plan. An administrative penalty of $50,000 dollars was assessed. The AO ordered CHN to comply with all pH and effluent limitations; maintain and operate its pretreatment system at all times; maintain accurate records of the operation and maintenance of its pretreatment system; submit its pH and Self-Monitoring Compliance reports on time; report pH to the required accuracy; notify NBC of any spills; and, adhere to the approved spill control plan. CHN preserved its right to a hearing. Negotiations resulted in the execution of a Consent Order on August 6, 2004 wherein CHN agreed to pay an administrative penalty of $12,000. The Consent Order further required CHN to install a pH neutralization system upgrade by December 31, 2004. CHN has fulfilled all of their Consent Order requirements.

- AO#BV-04-02 was issued against Instant Septic Environmental Services and Douglas Goss on or about August 8, 2002. The AO cited Instant Septic for falsification of septage originator/customer signatures on NBC required septage discharge manifest forms. An administrative penalty in the amount of $20,000 was assessed and further required Instant Septic to immediately cease and desist all septage discharges to the NBC Lincoln Septage Receiving Station. Instant Septic preserved its right to an administrative hearing. Subsequently, Instant Septic closed its operations. The main corporation, Instant Plumber Plumbing and Heating, Inc., remains open, and the AO was amended to include the proper corporate name. Settlement negotiations were unsuccessful, and as such, an administrative hearing was held on April 20, 2004. Following conclusion of the hearing, the Hearing Officer issued a decision recommending that the NBC issue a Final Decision and Order assessing a $20,000 administrative penalty solely against business and not personally against Mr. Goss. In accordance with the order, Instant Plumber was to immediately cease and desist all septage discharges to the NBC Lincoln Septage Receiving Facility. Thereafter, the NBC issued a Final Decision and Order adopting the Hearing Officer's recommendations. Subsequently, Instant Plumber Plumbing and Heating, Inc., went out of business. This matter is now closed.

- AO#BV-05-02 was issued against Estrela Do Mar and George Rodrigues on or about September 23, 2002. The AO cited Estrela Do Mar with failure to submit pretreatment and process plans, and failure to install a required grease removal unit. An administrative penalty of $5,000 was assessed. The AO further ordered Estrela Do Mar to submit its kitchen facility plans, and to install a grease removal unit. Estrela Do Mar failed to preserve its right to an administrative hearing. A Final Decision and Order was issued in January 2003 requiring Estrela Do Mar to pay the penalty, submit the required plans and install the required equipment. Estrela Do Mar failed to comply with the Final Order and as a result, its wastewater discharge line was sealed. Subsequently Estrela Do Mar complied with its pretreatment requirements and the NBC unsealed its discharge line. A Consent Order was executed wherein Estrela Do Mar agreed to pay the $5,000 penalty over a 10 month period. Estrela Do Mar has failed to adhere to the payment terms. A complaint was filed in District Court action to collect the amounts outstanding. This matter was dismissed as the $5,000 penalty payment was received through proceeds on an intervening sale. This matter is now closed.

Supplemental Environmental Projects

Supplemental Environmental Projects (SEPs) 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 five categories of acceptable supplemental environmental projects. The first four categories: pollution prevention projects, pollution reduction projects, environmental restoration projects, and environmental auditing projects require that the project 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 reporting violations, the purchase and installation of digital or computerized pH monitoring and recording equipment would provide sufficient nexus between the violation and the anticipated benefit to be derived from use of the equipment. The last category, public awareness projects, is not subject to this strict nexus requirement, but must still be related to the type of violation which is the subject of the underlying violations. Pursuant to EPA regulation, general educational and environmental awareness projects are not acceptable as SEPs. In addition, SEPs are less appropriate for repeat offenders.

Environmental Enforcement Fund

During the 1989 Legislative Session, 89-S-786 was passed into law which established the Narragansett Bay Commission Environmental Enforcement Fund. 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's 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).

On September 21, 1990, the Commission developed internal policies and procedures for the use of the Environmental Enforcement Fund. In the spring of each year the NBC solicits ideas for use of the funds from NBC staff, the public and industrial users. NBC's Director of Planning, Policy & Regulation reviews the submittals and makes funding recommendations to the Executive Director and the Board of Commissioners. The Executive Director presents the ideas and recommendations to the Commission's Finance and Long-Range Planning Committees at a joint meeting for their review and approval.

"Environmental Enforcement funds were used to support a river restoration project for the Woonasquatucket River in Providence"

In 2006, the NBC solicited proposals for use of Environmental Funds. As a result, six (6) proposals were submitted to the NBC Board of Commissioners for reviews and were approved. These proposals are listed below in Table 27. The NBC expects to solicit new proposals in the spring of 2007 as Environmental Enforcement Funds become available.

Table 27
2006 Approved Environmental Enforcement Fund Proposals

EEF#	Company	Project	Amount Awarded
06-001	NBC's Woon Watershed Explorers	Bus transportation for students from for field trips	$6,700.00
06-002	RI Rivers Council	2006 Watershed Stewardship Program Tote Bags	$400.00
06-003	Audubon Society of RI	Corporate sponsorship of the International Coastal Cleanup	$2,500.00
06-004	East Coast Greenway Alliance	"Close the Gap" Campaign	$1,000.00
06-005	Johnston Historical Society	Restoration of the Belknap Schoolhouse	$2,500.00
06-006	Leonard Walker Scholarship Fund	Contribution to the scholarship fund	$2,500.00
Total Approved in 2006			**$15,600.00**

Enforcement Response Plan

In accordance with 40 CFR§403.8(f)(5), the Narragansett Bay Commission developed and submitted an Environmental Response Plan to the RI DEM on February 1, 1993. The plan was officially approved by the RI DEM on January 12, 1995. 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 its Pretreatment Program. The proposed plan suggests timetables for the initiation of enforcement actions that would be followed as soon as practicable after the 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 initiating an enforcement action. The NBC has revised the Enforcement Response Plan to comply with DEM requirements imposed during the year 2000 DEM Pretreatment Compliance Inspection and the RIPDES permits issued by the DEM on December 31, 2001. The revised Enforcement Response Plan was submitted to the DEM on August 28, 2002 in accordance with DEM requirements. The plan was approved by the DEM on September 26, 2003.

Publication of Firms in Significant Non-Compliance (SNC)

Federal regulation 40 CFR§403.8(f)(2)(vii) requires the Commission 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 Significant Non-Compliance with pretreatment standards and/or administrative requirements for the period of October 1, 2005 through December 31, 2006 was published in an advertisement in the PROVIDENCE JOURNAL on March 1, 2007. A copy of this advertisement is provided in FIGURE 11, while the Affidavit of Publication is provided in FIGURE 12.

During 2006 the NBC Rules and Regulations were modified to incorporate the revised EPA definitions of Significant Non-Compliance (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 of 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 Commission determines has caused, either alone or in combination with other discharges, pass through or interference (including endangering the health of Commission personnel or the general public);

(d) Any discharges of a pollutant that has caused imminent endangerment to human health, welfare, or the environment, or causes the POTW 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 upon extensive user file reviews, the names of fifteen firms were listed in the March 1, 2007 public notice in the Providence Journal. Of the fifteen firms listed in Significant Non-Compliance, six users are located in the Field's Point district and nine are Bucklin Point users. There were seven firms in SNC subject to EPA categorical standards, six are classified as either electroplaters or metal finishers, one is classified as a pharmaceutical facility.

One violator listed in the SNC public notice was classified as significant non-categorical user and seven firms are classified as non-significant industrial users. These eight firms perform various types of wastewater generating operations including vibratory tubbing, machine shop, printing, groundwater remediation, textile processing, and other manufacturing operations.

The number of firms listed in SNC for 2006 was 15, a decrease from the 2005 number of 28. Of the 15 users listed in the March 1, 2007 SNC Public Notice, 14 users had achieved full compliance with the EPA and NBC Rules and Regulations for which they were published prior to the date of publication. Additional information regarding the firms listed in SNC is provided in CHAPTERS I and IV. The cost of the public notice was billed to the firms listed as being in Significant Non-Compliance.

FIGURE 35
PUBLIC NOTICE OF USERS IN SNC

The Narragansett Bay Commission

PUBLIC NOTICE

Firms in Significant Non-Compliance

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGULATION 40 C.FR. 403.8(f) (2) (vii) and Article 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, 2005 through December 31, 2006. 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) the 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. •

Bucklin Point Service Area

Pawtucket

Company Name	Violations Cited	Present Status
American Insulated Wire Corporation (Grand Ave. Facility)	Copper (1, 2)	Firm is still experiencing compliance problems.
Denison Pharmaceuticals, Inc.	Total Toxic Organics (2) Acetone (2)	Firm is now in compliance. Firm is now in compliance.
Packaging Graphics, LLC	Total Oil and Grease (1,2)	Firm is now in compliance.
RIDCO, Inc.	Zinc(2)	Firm is now in compliance.
R.I. Textile Company (Columbus Avenue)	Failure to submit report on time (6)	Report has been submitted.
Slater Screen Print Corporation	Copper (1,2) Total Oil and Grease (1,2)	Firm is out of business. Firm is out of business.
Vitrus, a division of Evergy, Inc.	Nickel (2)	Firm is now in compliance.

Cumberland

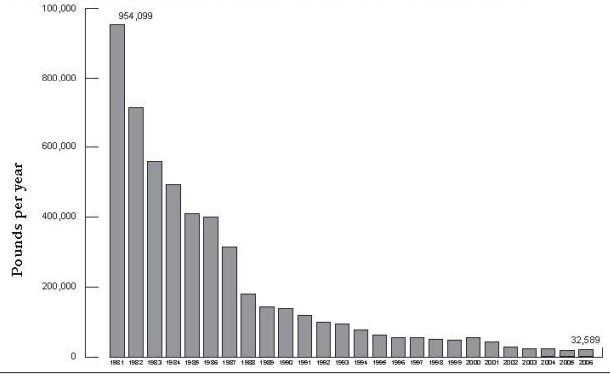
Company Name	Violations Cited	Present Status
KIK Custom Products, Inc.	Total Oil & Grease (2)	Firm is still experiencing compliance problems.
Teknicote, Inc.	Failure to submit report on time (6)	Report has been submitted.

Field's Point Service Area

Providence

Company Name	Violations Cited	Present Status
Apex Plating Company, Inc.	Failure to submit report on time (6)	Report has been submitted.
National Plating, Inc.	Silver (2)	Firm is now out of business.
Northland Environmental, Inc.	Total Oil and Grease (2)	Firm is now in compliance.
Precision Industries, Inc.	Failure to submit report on time (6)	Report has been submitted.
Providence Chain Company	Cyanide (2)	Firm is now in compliance.
Rhode Island Public Transit Authority (Heavy Maintenance Facility)	Lead (1, 2) Zinc (2) Copper (1, 2) Failure to submit report on time (6)	Firm is now in compliance. Firm is now in compliance. Firm is now in compliance. Report has been submitted.

Total Metals Influent to Field's Point WWTF, 1981-2005



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 Office of Environmental, Safety & Technical Assistance. For information on how the NBC Environmental, Safety & Technical Assistance Program can help your firm achieve and maintain compliance, contact the Environmental, Safety & Technical Assistance Program Staff at 461-8848/TDD 461-6549.

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 96.6% and 96.7% respectively. Similar toxic loading reductions have been observed at the NBC's Bucklin Point facility.

The Narragansett Bay Commission will continue to be a leader in the field of wastewater treatment, environmental protection and environmental education to ensure a cleaner Narragansett Bay for all to enjoy.

Vincent J. Mesolella, *Chairman* • Raymond J. Marshall, P.E., *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

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

FIGURE 36
AFFIDAVIT OF PUBLICATION OF SNC PUBLIC NOTICE

AFFIDAVIT OF PUBLICATION
The Providence Journal
The Providence Sunday Journal

Published by The Providence Journal Company
Providence, Rhode Island 02902

State of Rhode Island
City and County of Providence

On this 14th day of March 2007,

before me, a Notary Public, duly qualified for said County and State, personally appeared Cheryl Jacobs, Senior Sales Director, in the office of The Providence Journal Company, publishers of **THE PROVIDENCE JOURNAL**, a newspaper published in the City of Providence by The Providence Journal Company, who, on being duly sworn, states that the advertisement of

See Exhibit A attached hereto and made a part hereof.

The Narragansett Bay Commission PUBLIC NOTICE Firms in Significant Non-Compliance THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY...

a true copy of which is hereunto annexed, was duly inserted in **THE PROVIDENCE JOURNAL** in its issue of March 1st, 2007,

Cheryl Jacobs

Subscribed and sworn to before me this 14th day of March, 2007

Notary Public

My Commission expires: 07/02/09

TABLE 28
SUMMARY OF ENFORCEMENT ACTIONS THROUGH 12/31/06
FIELD'S POINT DISTRICT

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	ENF.COSTS ASSESSED/ AWARDED/ AGREED TO	ENF. COSTS PAID	ENF. COSTS BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
NOV #1 F. RONCI CO.	01/31/1986	HEARING AWARDED $219,950.00 COURT REVERSED AWARD	N/A	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #2 ABATE & URSILLO COMPANY	03/20/1987	CONSENT ORDER 05/01/87 BANKRUPT	N/A	$23,000.00	$2,683.31	$20,316.69	$1,500.00	$1,500.00	$0.00	$750.00	$750.00	$0.00
NOV #3 ASTRO PLATING WORKS	05/13/1987	CONSENT ORDER 08/20/87	N/A	$70,000.00	$70,000.00	$0.00	$4,000.00	$4,000.00	$0.00	$19,500.00	$19,500.00	$0.00
NOV #4 A & J JEWELRY CO.	10/07/1987	CONSENT ORDER 11/13/87	N/A	$7,500.00	$7,500.00	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00
NOV #5 RAU FASTENERS, INC.	10/12/1987	CONSENT ORDER 07/23/90	N/A	$50,000.00	$50,000.00	$0.00	$2,000.00	$2,000.00	$0.00	$117,500.00	$117,500.00	$0.00
NOV #6 H.M. PLATING CO.	12/10/1987	NOV RESCINDED	N/A	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #7 ANTONELLI PLATING CO.	12/07/1987	NOV RESCINDED	N/A	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #8 H.M. PLATING CO.	09/14/1988	CONSENT ORDER 01/13/89 BANKRUPT	N/A	$15,000.00	$3,000.00	$12,000.00	$2,000.00	$2,000.00	$0.00	$1,750.00	$1,750.00	$0.00
NOV #9 BIANCO PLATING CO.	10/04/1988	CONSENT ORDER 03/10/89 BANKRUPT	N/A	$23,000.00	$7,800.00	$15,200.00	$8,400.00	$8,400.00	$0.00	$500.00	$500.00	$0.00
NOV #10 PROCRAFT, INC.	02/16/1989	CONSENT ORDER 04/27/90	N/A	$1,500.00	$1,500.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
NOV #11 CONCORDE BUCKLE CO.	08/04/1989	CONSENT ORDER 03/20/90	N/A	$7,500.00	$7,500.00	$0.00	$1,000.00	$1,000.00	$0.00	$0.00	$0.00	$0.00

TABLE 28
SUMMARY OF ENFORCEMENT ACTIONS THROUGH 12/31/06
FIELD'S POINT DISTRICT

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	ENF.COSTS ASSESSED/ AWARDED/ AGREED TO	ENF. COSTS PAID	ENF. COSTS BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
NOV #12 GALAXY GOLD, INC.	11/01/1989	CONSENT ORDER 04/27/90 PERMIT REVOKED 10/26/89	N/A	$6,300.00	$6,300.00	$0.00	$2,193.00	$2,193.00	$0.00	$0.00	$0.00	$0.00
NOV #13 SCIENTIFIC METAL FINISHING	11/01/1989	NOV RESCINDED	N/A	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #14 EASTLAND/ NU-WAY FOOD PRODUCTS	11/01/1989	CONSENT ORDER 03/29/90	N/A	$3,000.00	$3,000.00	$0.00	$12,254.00	$12,254.00	$0.00	$0.00	$0.00	$0.00
NOV #15 GOLD CROWN, INC.	02/15/1990	CONSENT ORDER 09/11/90	N/A	$10,000.00	$10,000.00	$0.00	$2,270.00	$2,270.00	$0.00	$0.00	$0.00	$0.00
NOV #16 SCIENTIFIC METAL FINISHING/S. MARCOS	12/22/1989	CONSENT ORDER 07/25/90 BANKRUPT	N/A	$12,500.00	$5,200.00	$7,300.00	$7,700.00	$2,500.00	$5,200.00	$1,500.00	$500.00	$1,000.00
NOV #17 SCIENTIFIC METAL FINISHING/ J. ROACH	12/22/1989	TERMS INCORPORATED INTO THE ABOVE CONSENT ORDER		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #18 ELECTRONIC PRECISION	02/15/1990	NOV RESCINDED MERGED W/ NOV #27	N/A	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #19 AMICARELLI & EASTMAN	05/15/1990	NOV RESCINDED	N/A	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #20 ARC ENTERPRISE	05/15/1990	HEARING ORDER 08/29/90 DEBTOR INSOLVENT	N/A	$6,000.00	$0.00	$6,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #21 ELECTROLIZING	06/07/1990	CONSENT ORDER 01/16/91	$68,000.00	$8,000.00	$8,000.00	$0.00	$4,000.00	$4,000.00	$0.00	$0.00	$0.00	$0.00

TABLE 28
SUMMARY OF ENFORCEMENT ACTIONS THROUGH 12/31/06
FIELD'S POINT DISTRICT

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	ENF.COSTS ASSESSED/ AWARDED/ AGREED TO	ENF. COSTS PAID	ENF. COSTS BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
NOV #22 RHODE ISLAND CLEANERS	06/11/1990	HEARING ORDER 10/02/90 CONSENT ORDER 07/14/92	$15,000.00	$15,000.00 w/ $4,000.00 SUSPENDED	$11,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #23 QUALITEX, INC.	07/05/1990	CONSENT ORDER 10/19/90	N/A	$25,000.00	$25,000.00	$0.00	$5,193.92	$5,193.92	$0.00	$5,000.00	$5,000.00	$0.00
NOV #24 PROVIDENCE HOUSING AUTHORITY	08/23/1990	CONSENT ORDER 11/01/90	$4,000.00	$0.00	$0.00	$0.00	$7,614.88	$7,614.88	$0.00	$0.00	$0.00	$0.00
NOV #25 JOHNSTON DRESSED BEEF & VEAL CO.	08/29/1990	HEARING ORDER 11/14/90	N/A	$23,000.00	$23,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #26 J.V. PLATING CO.	09/04/1990	CONSENT ORDER 04/09/91 BANKRUPT	$22,000.00	$3,000.00	$1,750.00	$1,250.00	$2,260.00	$1,130.00	$1,130.00	$750.00	$0.00	$750.00
NOV #27 ELECTRONIC PRECISION CIRCUITRY	09/24/1990	CONSENT ORDER 01/07/91	N/A	$12,300.00	$12,300.00	$0.00	$7,700.00	$7,700.00	$0.00	$0.00	$0.00	$0.00
NOV #28 WALLACE COMPANY	10/26/1990	BANKRUPT	N/A	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #29 APAC TOOL, INC.	10/26/1990	CONSENT ORDER 04/23/91	$8,000.00	$2,498.00	$2,498.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
NOV #30 D'AMBRA CONSTRUCTION	12/19/1990	CONSENT ORDER 06/11/92	N/A	$2,000.00	$2,000.00	$0.00	$7,000.00	$7,000.00	$0.00	$0.00	$0.00	$0.00
NOV #31 NEW ENGLAND TELEPHONE & TELEGRAPH CO.	01/10/1991	CONSENT ORDER 06/13/91	$9,910.00	$8,000.00	$8,000.00	$0.00	$1,910.00	$1,910.00	$0.00	$0.00	$0.00	$0.00
NOV #32 ALLENS MANUFACTURING CO.	01/10/1991	CONSENT ORDER 09/06/91	$54,000.00	$2,870.00	$2,870.00	$0.00	$2,810.00	$2,810.00	$0.00	$0.00	$0.00	$0.00

TABLE 28
SUMMARY OF ENFORCEMENT ACTIONS THROUGH 12/31/06
FIELD'S POINT DISTRICT

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	ENF.COSTS ASSESSED/ AWARDED/ AGREED TO	ENF. COSTS PAID	ENF. COSTS BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
NOV #33 PROVIDENCE COLLEGE	02/07/1991	MERGED WITH NOV #34 CONSENT ORDER 07/15/91	$7,200.00	$12,000.00	$12,000.00	$0.00	$2,320.00	$2,320.00	$0.00	$0.00	$0.00	$0.00
NOV #34 PROVIDENCE COLLEGE	02/15/1991	MERGED WITH NOV #33 SEE ABOVE	N/A	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NOV #35 VANITY JEWELRY	03/13/1991	CONSENT ORDER 05/10/91	$1,250.00	$1,250.00	$1,250.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #1 QUALITY STAMPING	06/25/1991	CONSENT JUDGMENT 04/26/96	$25,000.00	$5,000.00	$5,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #2 JOHN OLSON & SONS	07/03/1991	CONSENT ORDER 06/09/92	$22,000.00	$4,500.00	$4,500.00	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00
AO #3 D & D PLATING	08/26/1991	CONSENT ORDER 02/11/92	$9,250.00	$3,000.00	$3,000.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #4 DON-LIN JEWELRY CO.	08/26/1991	CONSENT ORDER 01/13/92	$4,218.00	$2,500.00	$2,500.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #5 FEDERAL PRODUCTS	08/26/1991	CONSENT ORDER 12/26/91	$4,250.00	$2,500.00	$2,500.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #6 SMITH JEWELRY SERVICE CO.	08/26/1991	IMMEDIATE COMPLIANCE ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #7 F. RONCI (SMITH ST.)	10/10/1991	BANKRUPT	$171,850.00	$170,850.00	$0.00	$170,850.00	$1,000.00	$0.00	$1,000.00	$0.00	$0.00	$0.00
AO #8 F. RONCI (ATLANTIC BLVD.)	10/10/1991	BANKRUPT	$52,200.00	$51,700.00	$0.00	$51,700.00	$500.00	$0.00	$500.00	$0.00	$0.00	$0.00

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AO #9 CH SPRAGUE	10/10/1991	CONSENT ORDER 05/06/92	$15,000.00	$4,000.00	$4,000.00	$0.00	$2,000.00	$2,000.00	$0.00	$0.00	$0.00	$0.00
AO #10 QUALITY PLATING	12/04/1991	DEBTOR INSOLVENT	$40,135.00	$39,650.00	$0.00	$39,650.00	$485.00	$0.00	$485.00	$0.00	$0.00	$0.00
AO #11 GENERAL ELECTRIC	10/28/1991	COMPLIED WITH ORDER	$6,885.00	$6,885.00	$6,885.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #12 ALLENS MFG. CO.	12/04/1991	PERMIT FEES PAID FINE WAIVED	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #13 ELECTROBRITE COATING CO.	12/14/1991	PERMIT FEES PAID FINE WAIVED	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #14 MERCURY POLISHING & PLATING	12/14/1991	PERMIT FEES PAID FINE WAIVED	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #15 GABRIELE'S, IND.	12/14/1991	COMPLIED WITH ORDER	$250.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #16 DUNC'S PLATING	12/14/1991	COMPLIED WITH ORDER	$250.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #17 SAMSON MFG., LTD.	12/14/1991	AO RESCINDED	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #18 STARBRITE PLATING	12/14/1991	COMPLIED WITH ORDER	$250.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #19 ASTRO PLATING WORKS	12/14/1991	COMPLIED WITH ORDER	$250.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

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SUMMARY OF ENFORCEMENT ACTIONS THROUGH 12/31/06
FIELD'S POINT DISTRICT

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AO #20 QUALITY PLATING CO.	12/14/1991	AO RESCINDED	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #21 CLAYTON CO.	01/22/1992	CONSENT ORDER 12/07/92	$9,882.00	$6,000.00	$6,000.00	$0.00	$382.00	$382.00	$0.00	$0.00	$0.00	$0.00
AO #22 JEWELS BY PATRICIA	01/22/1992	CONSENT ORDER 05/18/92	$10,500.00	$2,500.00	$2,500.00	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00
AO #23 J.V. PLATING	01/22/1992	BANKRUPT	$250.00	$250.00	$0.00	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #24 QUAKER PLATING	01/23/1992	CONSENT ORDER 06/19/92	$14,600.00	$5,900.00	$5,900.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #25 GOLD CROWN	01/23/1992	CONSENT ORDER 07/08/93	$19,000.00	$9,000.00	$9,000.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #27 QUEBECOR PRINTING	01/07/1992	CONSENT ORDER 06/29/93	$22,250.00	$10,000.00	$10,000.00	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00
AO # FP-01-92 ANTONELLI PLATING	04/03/1992	MERGED WITH #FP-02-92 CONSENT ORDER 07/23/92	$250.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # FP-02-92 ANTONELLI CASTING	04/03/1992	MERGED WITH #FP-01-92 SEE ABOVE	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # FP-03-92 GOLD CROWN	05/26/1992	IMMEDIATE COMPLIANCE ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # FP-04-92 ALLENS MFG.	06/04/1992	BANKRUPT	$11,250.00	$11,250.00	$0.00	$11,250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

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FIELD'S POINT DISTRICT

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AO # FP-05-92 GENERAL ELECTRIC	09/01/1992	CONSENT ORDER 08/10/93	$9,500.00	$7,500.00	$7,500.00	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00
AO # FP-06-92 DUNC'S PLATING	11/12/1992	PERMIT FEES PAID FINE WAIVED	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # FP-07-92 BROAD STREET CAR WASH	11/12/1992	CONSENT ORDER 01/06/93	$250.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # FP-08-92 CAFFE PAZZO	12/16/1992	CONSENT ORDER 07/07/93 BUSINESS CHANGED OWNERSHIP	$2,500.00	$500.00	$100.00	$400.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # FP-09-92 AIR CLEANING CONCEPTS	12/23/1992	COMPLIANCE ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-01-93 FEDERATED METALS	03/29/1993	CONSENT ORDER 06/17/93	$12,250.00	$1,500.00	$1,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-02-93 EASTERN COLOR & CHEMICAL	03/29/1993	CONSENT ORDER 07/08/93	$23,000.00	$10,000.00	$10,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-03-93 B B GREENBERG	03/29/1993	BANKRUPT	$7,500.00	$7,500.00	$0.00	$7,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-04-93 ROCCHIO & SONS	05/05/1993	CONSENT ORDER 05/19/97	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-05-93 RI DEPT OF TRANS.	05/05/1993	SAME CASE AS ABOVE	SAME CASE AS ABOVE	SAME CASE AS ABOVE	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # FP-06-93 GFB/ADMIRAL NORGETOWN	05/18/1993	OUT OF BUSINESS	$1,000.00	$1,000.00	$0.00	$1,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

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AO # FP-07-93 NEW RIVERS RESTAURANT	07/14/1993	CONSENT ORDER 12/03/93	$1,500.00	$200.00	$200	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-08-93 MERCURY POLISHING & PLATING CO.	07/22/1993	BANKRUPT/ TERMINATION OF PERMIT	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # FP-09-93 RAU FASTENER	07/23/1993	CONSENT ORDER 05/06/94	$25,000.00	$7,500.00	$7,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # FP-10-93 ALLENS MFG. CO.	07/26/1993	BANKRUPT	$11,000.00	$11,000.00	$0.00	$11,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # FP-11-93 MERIT PLATING	08/06/1993	CONSENT ORDER 04/28/94 BUSINESS CLOSED	$25,000.00	$5,000.00	$0.00	$5,000.00	$500.00	$0.00	$500.00	$0.00	$0.00	$0.00
AO #FP-12-93 R.E.STURDY COMPANY	12/08/1993	COMPLIED WITH ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-13-93 PROVIDENCE ELECTRO-PLATING	12/30/1993	CONSENT ORDER 10/17/95	$20,000.00	$1,000.00 $5,000.00 (SEP)	$1,000.00 $5,000.00 (SEP)	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #FP-14-93 FBF, INCORPORATED	12/30/93 AMENDED 09/13/95	CONSENT ORDER 10/31/95 BUSINESS CLOSED	$31,000.00	$5,000.00	$0.00	$5,000.00	$250.00	$0.00	$250.00	$0.00	$0.00	$0.00
AO #FP-15-93 GEMCRAFT	12/30/1993	CONSENT ORDER 07/21/94	$16,000.00	SEP ($11,000)	SEP($11,000)	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00
AO #FP-01-94 JOHNSTON DRESSED BEEF	04/08/1994	COMPLIED WITH ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-02-94 QUAKER PLATING	04/19/1994	CONSENT ORDER 06/06/94	$13,000.00	$3,000.00	$3,000.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00

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AO #FP-03-94 YEA, YEA INC./SGUMBATO & SONS	4/19/94 AMENDED 11/20/95	CONSENT ORDER 09/23/96	$10,000.00	$5,000.00	$5,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-04-94 SHOOTER'S AT INDIA POINT	04/22/1994	CONSENT ORDER 10/12/94	$2,500.00	$2,500.00	$2,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-05-94 EVANS PLATING	06/24/1994	CONSENT ORDER 08/03/95	$29,000.00	$2,500 $6,000.00 (SEP)	$2,500.00 $6,000.00 (SEP)	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00
AO #FP-06-94 RHODE ISLAND PUBLIC TRANSIT AUTHORITY	07/13/1994	COMPLIED WITH ORDER	$11,000.00 CONDITION ON NON-COMPLIANCE	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-07-94 T & J CONTAINER	07/20/1994	CONSENT ORDER 09/27/94	$4,000.00	$1,000.00	$1,000.00	$0.00	$152.94	$152.94	$0.00	$0.00	$0.00	$0.00
AO #FP-08-94 COLORLAB, LTD.	08/25/1994	CONSENT ORDER 11/09/94	$5,000.00	$500.00	$500.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #FP-09-94 PDQ PHOTO	08/25/1994	CONSENT ORDER 11/09/94	$5,000.00	$500.00	$500.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #FP-11-94 IDEAL PLATING	11/02/1994	CONSENT ORDER 08/07/95	$15,000.00	$2,500.00 $2,500.00 (SEP)	$2,500.00 $2,500.00 (SEP)	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #FP-12-94 BLUE GROTTO RESTAURANT	10/07/1994	CONSENT ORDER 05/30/95 BANKRUPT	$5,000.00	$2,000.00	$700.01	$1,299.99	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-13-94 GOLDEN DRAGON RESTAURANT	10/07/1994	CONSENT ORDER 02/02/95	$5,000.00	$1,000.00	$1,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-14-94 T. SARDELLI & SONS	10/07/1994	CONSENT ORDER 01/03/95	$15,000.00	$5,000.00	$5,000.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00

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AO #FP-15-94 LINCOLN PARK	10/27/1994	SETTLEMENT	$5,000.00	$5,000.00	$5,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-16-94 PASTA ETC	11/07/1994	BUSINESS CLOSED	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-17-94 A.A. WRECKING	11/18/1994	SETTLEMENT	$10,000.00	$500.00	$500.00	$0.00	$5,997.44	$5,997.44	$0.00	$0.00	$0.00	$0.00
AO #FP-01-95 EAGLE PLATING CO, INC	05/30/1995	CONSENT ORDER 09/03/96	$50,000.00	$7,500.00	$7,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-02-95 RUMSTICK DINNER	06/08/1995	AO RESCINDED 10/18/95 BUSINESS CLOSED	$5,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-03-95 D'AGOSTINO'S AUTO SALVAGE, INC	07/10/1995	CONSENT ORDER 11/27/95	$11,000.00	$2,750.00	$2,750.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #FP-04-95 CENTURY PLATING INTERNATIONAL INC	07/10/1995	CONSENT ORDER 08/30/95	$33,000.00	$7,500.00	$7,500.00	$0.00	$500.00	$500.00	$0.00	$200.00	$200.00	$0.00
AO #FP-05-95 CARABELLA'S RESTAURANT	09/14/1995	AO RESCINDED	$5,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-06-95 KELLY'S CAR WASH	10/04/1995	CONSENT ORDER 02/29/96	$5,000.00	$2,500.00	$2,500.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #FP-07-95 FINISHING CONCEPTS, INC	10/05/1995	CONSENT ORDER 11/27/95	$20,000.00	$5,000.00	$5,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-08-95 CRC, CORP	11/21/1995	CONSENT ORDER 04/01/96	$1,000.00	PUBLIC AWARENESS AD $519.70	$519.70	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

TABLE 28
SUMMARY OF ENFORCEMENT ACTIONS THROUGH 12/31/06
FIELD'S POINT DISTRICT

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	ENF.COSTS ASSESSED/ AWARDED/ AGREED TO	ENF. COSTS PAID	ENF. COSTS BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
AO #FP-09-95 THAILAND RESTAURANT	10/10/1995	CONSENT ORDER 11/20/96	$5,000.00	$200.00	$200.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-10-95 RAU FASTENERS, LLC	12/28/1995	CONSENT ORDER 02/20/96	$13,000.00	$9,900.00	$9,900.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-01-96 OPTI FINISHING TECHNOLOGIES	4/9/96 AMENDED 6/13/96	PERMIT REVOKED	$18,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-02-96 RIBCO MFG. INC	04/09/1996	CONSENT ORDER 05/31/96	$10,000.00	$10,000.00	$10,000.00	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00
AO #FP-03-96 DUNC'S PLATING CO.	04/25/1996	CONSENT ORDER 06/24/96	$5,000.00	$1,200.00	$1,200.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-04-96 NORTH PROVIDENCE MEDICAL SERVICES, INC.	07/02/1996	CONSENT ORDER 09/18/96	$0.00 COMPLIANCE ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-05-96 PRECISION INDUSTRIES	09/04/1996	CONSENT ORDER 11/20/96	$7,000.00	$1,500.00	$1,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-06-96 A&F PLATING CO., INC.	09/25/1996	MERGED WITH # FP-08-96	$25,000.00	MERGED WITH FP-08-96	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-07-96 REGENCY PLAZA ASSOCIATES	09/25/1996	CONSENT ORDER 01/13/97	$10,000.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-08-96 A&F PLATING CO., INC.	12/19/1996	PROSECTUED CRIMINALLY	$160,000.00	$15,000.00	$15,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-01-97 FOTO FINISH	06/12/1997	PERMIT FEES PAID CONSENT JUDGMENT 10/15/97 BUSINESS CLOSED	$5,000.00	$1,000.00	$751.06	$248.94	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

TABLE 28
SUMMARY OF ENFORCEMENT ACTIONS THROUGH 12/31/06
FIELD'S POINT DISTRICT

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	ENF.COSTS ASSESSED/ AWARDED/ AGREED TO	ENF. COSTS PAID	ENF. COSTS BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
AO #FP-02-97 BEAUCRAFT, INC.	11/20/1997	CONSENT ORDER 01/15/98	$14,000.00	$5,750.00	$5,750.00	$0.00	$250.00	$250.00	$0.00	$400.00	$400.00	$0.00
AO #FP-03-97 QUAKER PLATING COMPANY, INC.	12/30/1997	CONSENT ORDER 10/14/99	$52,000.00	$26,500.00	$26,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-01-98 HAB TOOL, INC.	02/24/1998	CONSENT ORDER 05/21/98	$10,000.00	$2,500.00	$2,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-02-98 AD-TECH, INC.	03/17/1998	HEARING HELD APPEAL PENDING	$40,500.00	$75,000.00 AWARDED AT HEARING	$0.00	$75,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-03-98 ALLENS MFG. CO., INC.	03/25/1998	RESOLUTION THRU BANKRUPTCY	$23,000.00	23,000.00	$23,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-04-98 DIMEO CONTRUCTION	06/18/1998	CONSENT ORDER 12/16/98	$1,500.00	$500.00 PUBLIC NOTICE ($459.60)	$959.60	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-05-98 RAWCLIFF CORPORATION	12/10/1998	CONSENT ORDER 03/30/99	$2,500.00	PUBLIC NOTICE ($597.75)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-06-98 RENCLIF, INC.	12/29/1998	CONSENT ORDER 03/18/99	$5,000.00	$1,000.00	$1,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-01-99 HAMILTON TOOL, INC.	03/02/1999	CONSENT ORDER 04/06/00 PERMIT FEES PAID	$5,000.00	$2,500.00	$2,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-01-00 CROWN PLATING, INC.	06/20/2000	SUPERIOR COURT AWARDED $6,250 PLUS PERMIT FEES FINE WAIVED	$6,250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-02-00 ULTRA METAL FINISHING, INC.	12/28/2000	INCOPORATED INTO AO#FP-02-01 BANKRUPT	$22,000.00	$22,0000	$0.00	$22,000	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

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FIELD'S POINT DISTRICT

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AO #FP-03-00 EASTERN WIRE PRODUCTS CORP.	12/28/2000	CONSENT ORDER 10/30/01	$105,000.00	$10,000.00	$9,150.00 (per accelerated payment plan)	$0.00	$2,000.00	$1,925.00 (per accelerated payment plan)	$0.00	$0.00	$0.00	$0.00
AO#FP-01-01 MICHAEL MARSOCCI	10/31/2001	CONSENT ORDER 05/02/02	$5,000.00	$750.00	$750.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO#FP-02-01 ULTRA METAL FINISHING CO., INC.	12/27/2001	PERMIT REVOKED BUSINESS CLOSED BANKRUPT	$5,000.00	$5,000	$0.00	$5,000	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO#FP-01-02 RICHARD FULLER	02/05/2002	CONSENT ORDER 05/16/02	$5,000.00	$750.00	$750.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO#FP-02-02 D&L SALES	04/11/2002	CONSENT ORDER 02/25/03	$10,000.00	$2,500.00	$2,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO#FP-03-02 RI CESSPOOL CLEANERS, INC.	05/14/2002	CONSENT ORDER 06/17/02	$5,000.00	$1,250.00	$1,250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO#FP-04-02 C&J JEWELRY COMPANY, INC.	10/17/2002	CONSENT ORDER 12/11/02	$10,000.00	$5,000.00	$5,000.00	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00
AO#FP-05-02 TOWN OF JOHNSTON	10/24/2002	PENDING NEGOTIATIONS	$25,000.00	$25,000.00	$0.00	$25,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-01-03 TOWN OF JOHNSTON	09/10/03	PENDING NEGOTIATIONS	$10,000.00	$10,000.00	$0.00	$10,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-02-03 VICTORY FINISHING TECHNOLOGIES	09/10/03	CONSENT ORDER 6/8/05	$55,000.00	$5000.00	$5000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-03-03 NEW ENGLAND INDUSTRIES	09/10/03	CONSENT ORDER 3/9/04	$35,000.00	$1,500.00	$1,500.00	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00

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FIELD'S POINT DISTRICT

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AO #FP-01-04 ELMHURST EXTENDED CARE	3/5/04	CONSE4NT ORDER 10/27/04	$20,000.00	$7,500.00	$7,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-02-04 ROGER WILLIAMS MEDICAL CENTER	3/5/04	CONSENT ORDER 10/27/04	$30,000.00	$12,500.00	$12,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #FP-01-05 WAL-MART STORES, INC.	10/17/05	Settlement Agreement 09/18/06	$61,000.00	$40,000.00	$40,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

TABLE 28
SUMMARY OF ENFORCEMENT ACTIONS THROUGH 12/31/06
BUCKLIN POINT DISTRICT

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	ENF.COSTS ASSESSED/ AWARDED/ AGREED TO	ENF. COSTS PAID	ENF. COSTS BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
BVDC NOV/ORDER LYNCH PAINT	JAN-87	BANKRUPT	$5,000.00	$1,000.00	$0.00	$1,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
BVDC NOV/ORDER LIBERTY PLATING	12/04/1987	CONSENT AGREEMENT 01/29/88	$85,500.00	$18,000.00 ($85,500.00 W/ $67,500.00 SUSPENDED)	$18,000.00	$0.00	$266.35	$266.35	$0.00	$0.00	$0.00	$0.00
BVDC NOV/ORDER #1 COLFAX, INC.	06/10/1988	SETTLEMENT AGREEMENT 09/08/88	$324,000.00	$60,000.00	$60,000.00	$0.00	$57,793.10	$57,793.10	$0.00	$0.00	$0.00	$0.00
BVDC NOV/ORDER TANYA CREATIONS	02/03/1989	CONSENT AGREEMENT 03/07/89	$54,000.00	$24,000.00 ($54,000 W/ $30,000 SUSPENDED)	$24,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
BVDC CHEMART COMPANY	04/17/1989	CONSENT AGREEMENT 09/29/89	$20,000.00	$5,000.00 ($10,000.00 w/ $5,000.00 SUSPENDED)	$5,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
BVDC NOV/ORDER NULCO MFG CORP	08/21/1989	CONSENT ORDER 05/01/90	$126,000.00	$21,000.00 ($42,000.00 W/ $21,000.00 SUSPENDED)	$21,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
BVDC NOV/ORDER #2 COLFAX, INC.	03/16/1990	SETTLEMENT AGREEMENT 07/11/90	$125,000.00	$12,500.00 ($20,000.00 W/ $7,500 SUSPENDED)	$12,500.00	$0.00	$10,117.98	$10,117.98	$0.00	2,000.00	$2,000.00	$0.00
BVDC NOV/ORDER NEWMAN CROSBY	04/10/1990	CONSENT ORDER 08/20/90	$10,500.00	$6,000.00 ($10,500.00 W/ $4,500.00 DEFERRED)	$6,000.00	$0.00	$4,403.26	$4,403.26	$0.00	$0.00	$0.00	$0.00
BVDC NOV/ORDER #3 COLFAX, INC.	07/06/1990	SETTLEMENT AGREEMENT 09/25/90	$25,000.00	$5,000.00	$5,000.00	$0.00	$6,562.15	$6,562.15	$0.00	$0.00	$0.00	$0.00
BVDC NOV/ORDER #4 COLFAX, INC.	08/08/1990	SETTLEMENT AGREEMENT 10/16/90	$380,000.00	$13,000.00	$13,000.00	$0.00	$42,056.29	$42,056.29	$0.00	$0.00	$0.00	$0.00
BVDC NOV/ORDER #5 COLFAX, INC.	12/13/1990	SETTLEMENT AGREEMENT 02/26/91	$20,000.00	$0.00	$0.00	$0.00	$2,867.65	$2,867.65	$0.00	$0.00	$0.00	$0.00

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BVDC NOV/ORDER MICROFIBRES	07/31/1991	COMPLIED WITH CONDITIONAL ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
BVDC NOV VITRUS, INC.	09/17/1991	SETTLEMENT AGREEMENT 10/2/91	$0.00	$0.00	$0.00	$0.00	$1,025.54	$1,025.54	$0.00	$0.00	$0.00	$0.00
A0 #BP-01-92 DORETTE, INC.	04/22/1992	PERMIT FEES PAID FINE WAIVED	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-02-92 CELTIC PUB	04/22/1992	PERMIT FEES PAID FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-03-92 PIZZA PALACE	04/22/1992	BUSINESS CLOSED FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # BP-04-92 BILL'S RESTAURANT	04/22/1992	PERMIT FEES PAID FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-05-92 CHRISTINE'S OF CUMBERLAND	04/22/1992	PERMIT FEES PAID FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-06-92 VISTAWALL, INC.	04/22/1992	COMPLIED WITH ORDER	$250.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # BP-07-92 JACY'S SALAD BAR	04/22/1992	BUSINESS CLOSED FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # BP-08-92 KING'S LAUNDRY	04/22/1992	PERMIT FEES PAID FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-09-92 WASHING WELL LAUNDROMAT	04/22/1992	PERMIT FEES PAID FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

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AO #BP-10-92 BRAXTON'S, INC.	04/22/1992	BUSINESS CLOSED FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-11-92 WOODLAWN FISH & CHIPS	04/22/1992	PERMIT FEES PAID FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-12-92 LITTLE ANTHONY'S RESTAURANT	04/22/1992	CHANGED OWNERSHIP FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO # BP-13-92 SMITHFIELD AVENUE LAUNDROMAT	04/22/1992	CHANGED OWNERSHIP FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-14-92 JEHA'S TEXACO	04/22/1992	PERMIT FEES PAID FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-15-92 ESTRELA DO MAR RESTAURANT	04/22/1992	PERMIT FEES PAID FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-16-92 RICOTTI'S SANDWICH SHOP	04/22/1992	COMPLIED WITH ORDER	$100.00	$100.00	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-17-92 UNCLE TONY'S PIZZA	04/22/1992	PERMIT FEES PAID FINE WAIVED	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-18-92 SERRA DE ESTRELA RESTAURANT	04/22/1992	COMPLIED WITH ORDER	$100.00	$100.00	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-19-92 REGINA MFG.	04/22/1992	COMPLIED WITH ORDER	$100.00	$100.00	$100.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-20-92 WOODLAWN CLEANERS & LAUNDRY	04/30/1992	COMPLIED WITH CEASE AND DESIST ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

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ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	ENF.COSTS ASSESSED/ AWARDED/ AGREED TO	ENF. COSTS PAID	ENF. COSTS BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
AO #BP-21-92 STANDARD UNIFORM SERVICES	06/17/1992	COMPLIED WITH CEASE AND DESIST ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-22-92 METROPOLITAN PLATING	04/22/1992	OUTSTDG FEES RESCINDED SUBJ. TO SHUTDOWN	$5,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BP-23-92 CHN ANODIZING	06/18/1992	CONSENT ORDER 03/30/93	$17,500.00	$7,000.00	$7,000.00	$0.00	$262.50	$262.50	$0.00	$0.00	$0.00	$0.00
AO #BP-24-92 PARAMOUNT CARDS	06/18/1992	CONSENT ORDER 02/09/93	$17,500.00	$2,000.00	$2,000.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #BP-26-92 SLATER SCREEN PRINT	03/10/1992	CONSENT ORDER 01/01/94	$18,000.00	$9,000.00	$9,000.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO # BP-28-92 A.T.CROSS CO.	02/06/1992	CONSENT ORDER 03/31/93	$3,250.00	$1,000.00	$1,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-02-93 SLATER SCREEN PRINT	03/18/1993	CONSENT ORDER 01/01/94	$25,000.00	$5,000.00	$5,000.00	$0.00	$500.00	$500.00	$0.00	$6,500.00	$6,500.00	$0.00
AO #BV-03-93 ELIZABETH WEBBING MILLS	05/04/1993	CONSENT ORDER 10/12/93	$25,000.00	$3,000.00	$3,000.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #BV-04-93 CHN ANODIZING	07/19/1993	CONSENT ORDER 03/08/94	$25,000.00	$5,000.00	$5,000.00	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00
AO #BV-05-93 STANDARD UNIFORM	10/29/1993	CONSENT ORDER 05/03/94	$18,000.00	$11,000.00	$11,000.00	$0.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00
AO #BV-06-93 BILL'S RESTAURANT	10/29/1993	COMPLIED WITH ORDER FINE RESCINDED	$3,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

TABLE 28
SUMMARY OF ENFORCEMENT ACTIONS THROUGH 12/31/06
BUCKLIN POINT DISTRICT

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	ENF.COSTS ASSESSED/ AWARDED/ AGREED TO	ENF. COSTS PAID	ENF. COSTS BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
AO # BV-01-94 AAFCO, INC.	03/17/1994	CONSENT ORDER 09/26/96	$11,000.00	$6000 (SEP)	$6000 (SEP)	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #BV-02-94 UNCLE TONY'S PIZZA & PASTA	07/12/1994	CONSENT ORDER 11/21/94	$12,000.00	PUBLIC AWARENESS PROJECT	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-03-94 MCDONALD'S RESTAURANT	07/19/1994	CONSENT ORDER 11/01/94	$10,000.00	$5,000.00	$5,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-04-94 MCCONNELL & CARPENTER	07/28/1994	COMPLIED WITH ORDER	$0.00 COMPLIANCE ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-05-94 COLFAX	10/13/1994	CONSENT ORDER 01/09/95	$5,000.00	$5,000.00	$5,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-07-94 UNCLE BEAN'S DINER	10/07/1994	CONSENT ORDER 12/06/94 BUSINESS CLOSED	$10,000.00	$1,000.00	$183.34	$816.66	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-01-95 LIBERTY PLATING	01/04/1995	CONSENT ORDER 08/03/95	$75,000.00	$6,000.00	$6,000.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #BV-02-95 JOSEPH'S FAMILY RESTAURANT	02/08/1995	COMPLIED WITH ORDER	$0.00 COMPLIANCE ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-03-95 SCOLA ENTERPRISES, INC.	05/30/1995	CONSENT ORDER 10/04/95	$20,000.00	$4,000.00	$4,000.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #BV-04-95 ELIZABETH WEBBING	10/02/1995	CONSENT ORDER 02/26/97	$50,000.00	$35,000.00 (SEP)	$35,000.00 (SEP)	$0.00	$750.00	$750.00	$0.00	$0.00	$0.00	$0.00
AO #BV-05-95 SLATER SCREEN PRINT	10/31/1995	CONSENT ORDER 11/20/97	$150,000.00	$35,000.00 $5,000. (SEP)	$35,000.00 $5,000. (SEP)	$0.00	$0.00	$0.00	$0.00	$5,500.00	$5,500.00	$0.00

TABLE 28
SUMMARY OF ENFORCEMENT ACTIONS THROUGH 12/31/06
BUCKLIN POINT DISTRICT

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	ENF.COSTS ASSESSED/ AWARDED/ AGREED TO	ENF. COSTS PAID	ENF. COSTS BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
AO #BV-06-95 TEKNOR APEX COMPANY	11/02/1995	CONSENT ORDER 06/19/96	$6,000.00	$3000.00 $3,000.00 (SEP)	$3,000.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #BV-01-96 STI, INC.	05/15/1996	CONSENT ORDER 07/31/96	$7,000.00	$500.00	$500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-02-96 MOBIL OIL CORPORATION	05/15/1996	AO RESCINDED	$10,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-03-96 MICROFIBRES, INC.	06/12/1996	CONSENT ORDER 04/10/97	$0.00 COMPLIANCE ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-01-97 EL PANAL RESTAURANT	06/12/1997	AO RESCINDED	$5,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-02-97 REGEN CORPORATION	11/20/1997	PERMIT FEES PAID CONSENT ORDER	$5,000.00	$500.00	$500.00	$0.00	$250.00	$250.00	$0.00	$0.00	$0.00	$0.00
AO #BV-01-98 BOWCAM CONTAINERS	05/19/1998	COMPLIED WITH ORDER	$2,000.00	$2,000.00	$2,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-02-98 NATIONAL RING TRAVELER	05/27/1998	CONSENT ORDER 07/28/99	$33,000.00	$16,000.00	$16,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-03-98 MICROFIBRES, INC.	12/08/1998	CONSENT ORDER 05/17/01	$112,000.00	$25,000.00	$25,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-04-98 ELIZABETH WEBBING MILLS, INC.	12/10/1998	COMPANY BANKRUPT	$134,000.00	$134,000.00	$0.00	$134,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-05-98 CHN ANODIZING	12/10/1998	CONSENT ORDER 03/18/99	$30,000.00	$12,000.00	$12,000.00	$0.00	$0.00	$0.00	$0.00	$175.00	$175.00	$0.00

TABLE 28
SUMMARY OF ENFORCEMENT ACTIONS THROUGH 12/31/06
BUCKLIN POINT DISTRICT

ENFORCEMENT ACTION# COMPANY NAME	AO ISSUE DATE	RESOLUTION	ORIGINAL ADMIN. PENALTIES ASSESSED	ADMIN. PENALTIES AWARDED OR AGREED TO	ADMIN. PENALTIES PAID	ADMIN. PENALTIES BALANCE	ENF.COSTS ASSESSED/ AWARDED/ AGREED TO	ENF. COSTS PAID	ENF. COSTS BALANCE	STIPULATED PENALTIES ASSESSED	STIPULATED PENALTIES PAID	STIPULATED PENALTIES BALANCE
AO #BV-01-99 TANURY INDUSTRIES	06/08/1999	CONSENT ORDER 08/03/99	$22,000.00	$9,800.00	$9,800.00	$0.00	$0.00	$0.00	$0.00	$900.00 AGREED UPON $600	$600.00	$0.00
AO #BV-02-99 BRISTOL COUNTY SEPTIC, INC.	12/22/1999	CONSENT ORDER 08/09/00	$30,000.00	$1,000.00	$1,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-01-00 ELIZABETH WEBBING MILLS, CO., INC.	06/29/2000	COMPANY IN BANKRUPTCY	$0.00 COMPLIANCE ORDER	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-02-00 WOODLAWN LAUNDRY & CLEANERS	12/28/2000	CONSENT ORDER NOT SIGNED COMPANY CLOSED	$2,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO#BV-01-02 CENTRAL SOYA COMPANY, INC.	02/21/2002	AO RESCINDED	$100,000	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO#BV-02-02 D.C.L. d/b/a SEWERMAN	04/22/2002	CONSENT ORDER 06/11/02	$30,000.00	$5,000.00	$5,000..00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO#BV-03-02 C.H.N. ANODIZING	6/28/2002	CONSENT ORDER 8/20/02	$1,500.00	$500.00	$500.00	$0.00	$250.00	$250.00	$0.00	$50.00	$100.00	$0.00
AO#BV-04-02 INSTANT SEPTIC ENVIRONMENTAL SERVICES	08/08/2002	**HEARING HELD DECISION 8/13/04 COMPLAINT FILED COMPANY OUT OF BUSINESS**	$20,000.00	$20,000.00 (AWARDED AT HEARING)	$0.00	$20,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO#BV-05-02 ESTRELA DO MAR	09/23/2002	**CONSENT JUDGMENT 3/24/03**	$5,000.00	$5,000.00	$5,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-01-03 C.H.N. ANODIZING	03/27/03	CONSENT ORDER 8/6/04	$50,000	$12,000.00	$12,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
AO #BV-01-05 TANURY INDUSTIRES	9/14/05	CONSENT ORDER 12/31/05	$108,500.00	$24,000.00 ($94,000.00 W/$70,000.00 SUSPENDED)	$22,.000.00	$2,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

VII. SPECIAL PROJECTS AND PROGRAMS

Introduction

The Narragansett Bay Commission (NBC) implements many special 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 team effort consisting of many sections of the NBC, including the Pretreatment, Environmental, Safety & Technical Assistance (ESTA), Planning, Laboratory and Environmental Monitoring & Data Analysis EMDA Sections.

The Pretreatment Section implements many special 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 NBC ESTA Program further reduces toxic loadings to the two NBC wastewater treatment facilities by providing free technical assistance and educational programs to local industries. Through this program, the NBC educates firms about pollution prevention measures, such as product substitutions, so that hazardous materials can be eliminated from process operations and toxic byproducts are not generated or discharged.

The EMDA section also routinely conducts water quality studies in the receiving waters of the NBC treatment facilities. EMDA contributes to the statewide effort of many agencies, institutions and organizations to understand the problems and determine the solutions needed to make all of Narragansett Bay open for all recreation and economic activities. The Laboratory operates daily to analyze the samples delivered by EMDA.

In 2006, EMDA's activities continued to evolve beyond its historical role within the NBC. The EMDA Section performs wastewater sampling at the two treatment facilities 365 days a year as well as user and manhole monitoring for the Pretreatment Program. These samples are analyzed by the NBC Laboratory Section. EMDA routinely analyzed data, conducted and completed studies, examined the impact of wastewater treatment facility effluent on receiving waters, improved and expanded existing projects, further developed education and public outreach projects, and volunteered staff time to Bay-wide multi–agency research projects. This Chapter details the special projects, studies, and programs that Pretreatment, ESTA, Permits & Planning, EMDA and Laboratory Sections have worked on in 2006.

Status of Projects, Programs and Studies

Environmental, Safety and Technical Assistance (ESTA) Program

The NBC initiated a pollution prevention technical assistance program in September of 1991 with the assistance of a $300,000 grant from the U.S. Environmental Protection Agency's (EPA) Pollution Prevention Incentives for States (PPIS) Program for the purpose of promoting the use of pollution prevention and source reduction techniques and technologies among the industrial community serviced by the NBC. In 2006 the name of the NBC Pollution Prevention Program was changed to the Environmental, Safety & Technical Assistance (ESTA) Program to recognize the many responsibilities taken on by this section with regards to offering technical assistance both internally and externally in the areas of safety, environmental compliance and energy conservation, as well as pollution prevention. The NBC ESTA Program continues 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. The NBC's ESTA Program pollution prevention services are free of charge, non-regulatory and confidential.

The goals and objectives of the ESTA Program's 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.

The ESTA Program performs technical assistance site visits of NBC industrial users, organizes and conducts workshops and seminars, and produces educational fact-sheets. The NBC ESTA Program conducted more than 60 individual site visits during 2006 on a variety of pollution prevention and environmental regulatory compliance improvement projects.

NBC's ESTA Program Pollution Prevention Activities

Since the creation of the "Pollution Prevention Program" in 1991 NBC has been awarded several additional PPIS grants to initiate a variety of industrial user environmental educational and technical assistance programs. TABLE 29 summarizes the project periods and funding amounts for each of these grant awards.

TABLE 29

Summary of Grant Awards

Program	Grant ID#	Project Period	Original Grant Award
Initial Pollution Prevention	NP818873-01-0	10/01/91 - 09/30/97	$300,000
Training Grant – CCRI Pollution Prevention course	NP991705-01-1	10/01/95 - 09/30/98	$60,000
Clean P2 – Regulatory Relief Program	NP991756-01-0	10/01/96 - 09/30/00	$85,000
NBC Metal Finishing 2000 Program	NP991195-01-0	10/01/97 - 09/30/00	$35,000
NBC Metal Finishing Seminars	NP991402-01-0	07/01/98 - 09/30/00	$25,000
Environmental Management Systems	NP991679-01-0	10/01/99 - 09/30/01	$32,000
Environmental Best Management Practices	NP98121801-0	10/01/00 - 03/31/03	$35,000
MP&M Pollution Prévention Audits	NP98142601	10/01/01 - 09/30/03	$50,000
Pollution Prevention in RI Hospitals	NP98154501-0	10/01/02 - 09/30/04	$25,000
Auto Salve Yard Pollution Prevention	NP98182201-0	10/01/03 – 09/30/05	$25,000
Stormwater Pollution Prevention	NP97107901-0	10/01/04 – 09/30/06	$35,000
Energy Conservation	NP97126001-0	10/01/05 - 09/30/07	$35,000
Total PPIS Grants Awards To NBC			**$742,000**

In addition to grant funded projects, NBC's ESTA Program is involved with numerous 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. Detailed descriptions of both grant funded and NBC funded programs and projects are as follows:

- ***National Metal Finishing Strategic Goals Program -*** The National Strategic Goals Program (SGP) was developed by a group of stakeholders brought together by EPA through the CSI. Stakeholders include representatives from the metal finishing industry, state and local governments, environmental interest groups, labor organizations, and public interest groups, as well as the EPA headquarters and regional offices.

This voluntary program encouraged participants to reach "beyond compliance" by achieving established environmental goals by 2002. These goals included conservation of water, energy, and metals, reduction in hazardous waste generation and air emissions, and improved economic paybacks associated with environmental compliance costs. Participants were provided with incentives such as technical assistance and regulatory flexibility as rewards for committing to and achieving established goals.

In May 2000, the NBC awarded a $15,000 grant to the Rhode Island Council of Electroplaters (RICE) to help NBC's then "Pollution Prevention Program" assist companies to gather and report required data elements. NBC has continued working with RICE on SGP related activities throughout 2001 and as of December 2001 a total of twenty metal finishing companies have been formally signed onto the SGP. The NBC has been involved with SGP and the CSI since the inception of the CSI in 1993 when NBC's then Director of Planning, Policy and Regulation was appointed to the National CSI's Metal Finishing Sector Subcommittee.

The NBC remains an active force behind SGP initiatives and continues to offer pollution prevention technical assistance to many local metal finishing companies. The NBC is also working with the local metal finishing industry through the American Electroplaters and Surface Finishers Society (AESF) with both NBC's ESTA Manager and Pollution Prevention Engineer are appointed board members of the Providence and South Attleboro branch of the AESF.

- ***Environmental Management System Program -*** In October 1999 the NBC was awarded $32,000 in matching grant funds from EPA's PPIS Grant program to develop a program that will train and assist the industrial community to develop site specific Environmental Management Systems (EMS).

  An EMS is a structured, systematic approach for identifying, addressing, and managing all environmental activities within a facility or organization. EMSs developed as part of this program will be company specific and will take into account all operations that affect the environment, including: pollution prevention, waste management, wastewater treatment, employee education, air pollution control, and emergency response and accidental releases. A well-established EMS program that has management support will result in a company wide environmental awareness among employees, contributing to the company's overall environmental performance. The success achieved by each participating company was measured in part through the following:

  - Improved environmental wastewater quality. The NBC tracked all industrial self-monitoring and NBC compliance monitoring information on a computer database.

- Improved housekeeping. The NBC and RIDEM regulatory inspectors should detect noticed improvements in participating companies' environmental program organization and general facility housekeeping practices. This should be evidenced by fewer violations being noted during inspections and positive comments being made on inspection reports;

- More Significant Industrial Users (SIU) achieving 100% full compliance with NBC requirements. The NBC annually recognizes all SIUs that have achieved full compliance with all NBC regulatory requirements during the previous calendar year. Each year NBC awards these companies with a plaque and publishes their names and accomplishments in the Providence Journal and Providence Business News. The success of this program should result in more companies being recognized for achieving this level of compliance.

In early 2001, the NBC contracted with the consulting firm of Camp Dresser and McKee to conduct a series of half-day Environmental Management System (EMS) development workshops which consisted of an introductory session and eight modules. These modules covered all aspects of creating an EMS program from developing an environmental policy, planning, implementation, audits, to managements review and implementation. These workshops were attended by more than 35 representatives from fifteen local businesses, RIDEM and NBC.

NBC continues to work with the local industrial community to develop and utilize various aspects of an EMS and continues to promote the use of EMSs through the ESTA Program technical assistance efforts.

- ***Pollution Prevention for Hospitals and Health Care Facilities*** – In September 2002, NBC was awarded $25,000 from EPA to initiate a Pollution Prevention Technical Assistance Program for Hospitals and Health Care Facilities. Through this program NBC's ESTA and Pretreatment staff with assistance from URI, RIDEM and the Rhode Island Dental Association conducted Environmental Compliance/Pollution Prevention Audits of a select grouping of hospitals, health care and/or dental facilities located within NBC service district. These audits focused on identifying the source of pollutants and quantifying the amounts of individual pollutants being released to the environment. Information gained through these audits helps NBC to direct additional technical assistance and education efforts and identify environmental metrics by which to measure the overall environmental performance of healthcare facilities. Pollutants and operations reviewed as part of these audits included:

  - Replacement of mercury containing equipment such as thermometers and blood pressure instruments;

  - Management, disposal and minimization of laboratory waste including solvent waste, acid and caustic wastewater and toxic and/or infectious waste;

- Proper identification and management of medical waste;
- Proper management and disposal of pharmaceutical wastes;
- Management and disposal of fixer, developer and rinse water from X-ray processing;
- Proper management and disposal of amalgam waste associated with dental procedures.

Using the findings of these audits the NBC did the following:

- Organized and sponsored a pollution prevention/environmental compliance educational workshop for all of Rhode Island's health care industry and to help identify and quantify what should be considered "superior environmental performance" by the health care industry.
- Identify environmental performance metrics to measure the success these education efforts have on the local health care industry and to help identify and quantify what should be considered "superior environmental performance" by the health care industry.
- Identify ways of recognizing healthcare facilities that achieve a superior level of environmental performance.
- Develop a set of Best Management Practices for smaller dental/healthcare facilities to be incorporated in wastewater discharge permits.

NBC continues to work on pollution prevention efforts with Rhode Island's healthcare community through EPA's Hospitals for a Healthy Environment Program.

- ***Pollution Prevention for Auto Salvage Yards*** - In October 2003 NBC received a $25,000 matching funds grant to initiate a pollution prevention and environmental compliance assistance project for Auto-Salvage Yards. As part of this project, NBC's ESTA and Pretreatment staff with assistance from URI and RIDEM conducted Environmental Compliance/Pollution Prevention Assessment of a select grouping of auto salvage yards/facilities located within NBC's servicing district. These assessments focused on identifying the source of pollutants and quantifying the amounts of individual pollutants released to the environment. Information gained through these audits assisted the NBC to direct additional technical assistance and education efforts and will identified environmental metrics to measure the overall environmental performance of auto salvage facilities on a statewide basis. Pollutant and operations assessed as part of these audits included:

  - Recovery and management of mercury containing devices such as mercury switches in automobiles,
  - Management, disposal/recycling of automobile tires,
  - Tracking and minimizing the generation of hazardous waste, and
  - Management and disposal of waste automotive oil and other vehicle fluids.

Using the findings/results of these audits NBC has:

- Organized and sponsor two pollution prevention/environmental compliance educational workshop for all of Rhode Island auto salvage facilities,
- Develop an set of Environmental Best Management Practices for the Management Lead Acid Batteries, and
- Assisted RIDEM with developing and implementing a Environmental Results Program (ERP) for Auto Salvage Yards

NBC continues to work with Rhode Island Auto Salvage Yard community through RIDEM's Auto Salvage ERP.

- ***Stormwater Pollution Prevention –*** In October 2004 NBC was awarded a $35,000 EPA Pollution Prevention Grant to address stormwater management issues. The focus of this project will focus on two stormwater issues – management of stormwater runoff from industrial and commercial sources, and MS4s in urbanized areas and identification, quantification and minimization of industrial and commercial operations on CSO discharges.

  - Stormwater Management

    NBC's Rules and Regulations for the Use of Wastewater Facilities Within the Narragansett Bay Commission prohibits the discharge of stormwater to a public sewer unless the NBC determines that a combined sewer is the only reasonable means available for disposal. In order to help address this issue NBC is developing a set of Best Management Practices for minimizing stormwater discharges. Information contained in these Best Management Practices is based on NBC's experiences working with industrial/commercial users that have developed successful stormwater management programs along with information found in existing stormwater management best management practices.

  - CSO Discharges

    NBC's ESTA and Pretreatment staff with assistance from and in cooperation with URI and RIDEM will identify industrial/commercial facilities within the NBC servicing district that have the potential to impact CSO discharges. NBC ESTA staff members are currently conducting Environmental Compliance/ Pollution Prevention Assessment of a select grouping of these facilities in order to identify the various sources of pollutants and ways of preventing/minimizing pollutant discharges. Information gained through these assessments will help NBC to direct additional technical assistance and educational efforts to the wider universe of industrial/ commercial users and will help to identify environmental performance metrics by which to measure the overall success of project efforts.

NBC's ESTA Program continues to assist the NBC Interceptor Maintenance (IM) Section as they develop and implement a CMOM Program. This NBC IM Section is responsible for maintaining more than 96 miles of NBC owned interceptor sewers, 7 pump stations, 84 regulators, 32 tide gates, 500 catch basins and 66 CSOs. Information collected through this pollution prevention project will help with identifying environmental objectives and targets within the IM CMOM.

- ***Energy Conservation Program –*** In October 2005 NBC was awarded a $35,000 Pollution Prevention Grant from EPA to initiate a program to investigate energy conservation and renewable energy opportunities at the NBC. 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, petroleum derived fuels and nuclear energy, it is imperative that wastewater treatment facilities have an in-depth understanding of available energy conservation techniques and alternative energy sources.

  As part of this project NBC is conducting detailed energy audits of its various facilities and operations in order to identify energy conservation opportunities and is researching the feasibility of utilizing renewable energy on a large scale to reduce its dependency on more conventional non-renewable energy sources.

  Renewable energy sources investigated have included:

  - Low impact hydroelectric energy – captured from wastewater flow
  - Wind derived energy;
  - Fuel Cells utilizing
    - Bio-gas;
    - Hydrogen derived from solar electro-dialyses of treated wastewater effluent;
    - Energy derived from nitrification/de-nitrification chemical reactions;
  - Geothermal energy;
  - Solar energy.

  Information collected as part of these energy audits and studies will be used to develop written energy use and conservation best management practices and fact sheets to help other wastewater treatment plants make informed decisions regarding their energy use and conservation practices. Overall project results will be presented to other Rhode Island and regional wastewater treatment facilities as part of an energy use workshop.

  In March 2006 NBC applied and received $50,000 in grant funds from the Rhode Island Office of Energy to conduct feasibility studies into the use of Wind Energy at the Field's Point WWTF and biogas in a Combined Heat and Energy Process (CHP) at the NBC Bucklin Point WWTF. In October 2006 NBC received approval from the IRS to issues $2.6 M in Clean Renewable Energy Bonds (CREB) to implement these projects.

NBC Environmental Merit Award Program

In June 2006, the NBC held its twelfth annual Environmental Merit Awards ceremony to recognize companies that have demonstrated environmental efforts and commitments that go beyond that of compliance requirements. As part of this awards program, the NBC also recognizes all Significant Industrial Users (SIU) that have achieved full compliance with all NBC requirements during the previous calendar year.

The 12th annual NBC Environmental Merit Awards event was held on June 20, 2006 at the Providence Marriot. At this event, the NBC recognized one company for their extraordinary pollution prevention efforts with the presentation of an Environmental Merit Awards, nine companies with Perfect Compliance Awards for achieving 100% compliance with all NBC regulatory requirements and one company was recognized for their efforts with managing stormwater. The award winning firms are as follows:

Pollution Prevention:

National Grid

Stormwater Management:

Meeting Street School

Perfect Compliance:

Danecraft, Inc.
Induplate, Inc.
Darlene Group, Inc.
IMPCO, Inc.
Providence Journal Company
Dominion Energy Manchester Street, Inc.
Charisma Manufacturing Company, Inc.
Hord Crystal Corporation
Popper Precision Instruments, Inc.

Each award recipient received a plaque and had their company name and environmental accomplishments published in the Providence Journal and Providence Business News. Additionally, each company receives an NBC Pollution Prevention/Perfect Compliance Seal that can be used on each firm's letterhead as a testimonial of their accomplishments. Applications for 2006 NBC Environmental Merit Awards will be sent out in March 2007 and the presentation of these awards will take place in June 2007.

Water Audit and Technical Assistance Program

The NBC Water Audit & Technical Assistance Program was established with the goals of reducing water use and wastewater production of its major water users and to minimize where possible, the NBC's capital expenditures towards sewer facility improvements and/or expansion due to increased wastewater flow. Given these goals, the NBC Water Audit & Technical Assistance Program assists commercial, industrial, and institutional customers to utilize water more efficiently and ultimately reduce wastewater flow into the sewer system.

The NBC Water Audit & Technical Assistance Program is non-regulatory, free of charge and voluntary. It typically consists of the following:

- Reviewing the customer's water sources and water-using systems;
- Developing and recommending methods and procedures to reduce the customer's water usage;
- Evaluating the cost-effectiveness of these recommendations;
- Assisting the customer in implementing these recommendations;
- Tracking the customer's future water use to determine the effectiveness of these new methods and procedures.

As part of a water audit, the NBC supplies our participants with reports containing recommendations and cost/benefit analyses of saving water. Water Audit Reports provide a breakdown of current water usage, recommends water reduction methods, and summarizes the cost savings for their water, sewer, and heating bills. By compiling these reports, the NBC can obtain valuable information about future flows into its sewer system. In 2006, staff solicited firms for water audits. In addition to the NBC Water Audit staff conducting water audits, NBC ESTA staff conducted audits that included a review of water use and investigated the potential for water reduction at several metal finishing companies.

Sewer Connection Permit Program

Since 1982, the NBC has been reviewing all applicants' requests to connect to its sewer system either directly to NBC owned and maintained sewers, or indirectly to City/Town maintained sewer lines. The sewer connection permit process is necessary to regulate all sewer connection activity to ensure that the structural integrity of the sewer line is preserved, to control and monitor wastewater flow capacity, to minimize storm water discharges, to control toxic pollutant discharges, to maintain quality customer service and to ensure accurate billing of new users.

Open communication is an integral part of the sewer connection permit process. Once a permit application is received, the Permits & Planning Section reviews it for accuracy and adequacy, then forwards it for further review and comment to various NBC sections. The sections that may be required to review the permit application include Pretreatment, Interceptor Maintenance, and Engineering.

As the Permit & Planning Section receives comments from various sections, the comments are compiled and addressed. After all comments have been satisfactorily addressed, a permit is prepared for approval by the Executive Director or his designee. In 1994, the Permit Section recognized its need for a database management computer program to efficiently and effectively analyze data (i.e. ever changing wastewater flow per district or by City/Town), generate reports (i.e. new customer listing for the Customer Service Section), and most importantly, to expedite the sewer connection permitting process. The majority of the 583 applications processed in 2006 were for residential connection. The Permit Section depended upon the Pretreatment Section to review approximately 64 of 583 sewer connection permit requests in 2006. A majority of these 64 sewer connection permits, resulted in users required to obtain a Wastewater Discharge Permit.

Permits & Planning staff regularly work with building officials and developers to implement Storm Water Management for new construction projects. Storm Water Management incorporates Storm Water Management Plans and Low Impact Design (LID). By requiring these plans and LID approximately 2,043,000 gallons of storm flow for a 25 year storm and approximately 568,000 gallons for a three month storm were eliminated from Fields Point in 2006.

In 2006 the Permit & Planning Section worked with the NBC's Legal Section to revise Article 4 of the NBC's Rules and Regulations. The revisions incorporate requirements for all parties including residential, connecting to the sewer system either directly or indirectly, to apply for and obtain a Sewer Connection Permit. The revisions became effective on December 20, 2006.

Silver & Mercury Loading Reduction Programs

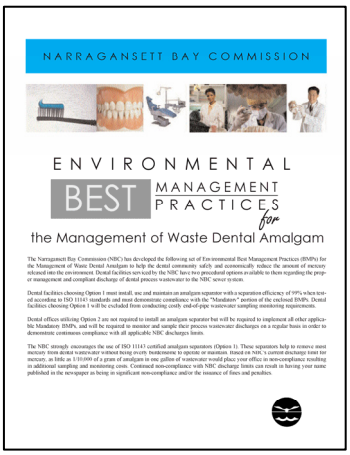
On September 30, 1992 the RIDEM Division of Water Resources issued RIPDES Permit Number RI0100315 to the Narragansett Bay Commission for the Field's Point Treatment Facility. This RIPDES permit established for the first time effluent discharge limitations for heavy metals and various other toxics. The monthly average RIPDES discharge limitation established for Total Silver was very stringent, 1.6 micrograms per liter. In order for the NBC to regularly meet this effluent discharge limitation, the agency immediately took aggressive action in the form of regulation and education of users.

The majority of users discharging silver bearing wastestreams into the NBC sewer system are small non-significant commercial and industrial users, while a small portion of the silver loading is generated from residential users conducting home photo darkroom operations. The Pretreatment Section implemented an aggressive regulatory approach to reduce the silver loading from non-significant commercial and industrial users. This regulatory approach included the permitting of many users, including colleges and technical schools which have photo darkrooms, doctor and dentist offices, and other medical facilities which develop x-rays, previously unpermitted printing firms which perform photo, film, or plate processing operations, and any remaining photo or film processing facilities that were unpermitted.

The discharge permits issued to these facilities require regular compliance monitoring of the process discharges and prohibit the discharge of untreated developer or fixative solutions. The installation of pretreatment equipment is usually necessary for a facility to achieve compliance with the existing NBC total silver discharge limitations. Over the years, the NBC sponsored several educational workshops and seminars regarding silver waste recovery and management. In addition, the NBC has worked closely with the RI Dental Association, the Hospital Association of Rhode Island, and the Rhode Island Silver Coalition to educate their members about common silver concerns.
In 2001, Pretreatment staff began the process of reevaluating the Silver Loading Reduction Program to ensure that all silver dischargers are properly permitted. Telephone books and directories were reviewed and compared to the existing list of NBC permitted users. A listing of users requiring facility inspection and possible permitting was generated.

The NBC is a participant in Rhode Island Mercury Education and Reduction Group. The objective of this group is to identify sources of mercury discharge and pollution in Rhode Island, educate the public regarding mercury issues and eliminate mercury pollution for future generations. Studies indicate that the majority of mercury loadings observed in the sewer system are the result of mercury/silver dental amalgams. As a result, the dental facility inspections were delayed so that the mercury amalgam issue could be addressed and incorporated into all new wastewater discharge permits issued to dentists.

In January 2004, the NBC completed a Best Management Practice (BMP) document for dentists to ensure that mercury mercury is properly handled, treated and disposed. The NBC worked closely with the Rhode Island Dental Association during the BMP development process to ensure that the BMP addressed both environmental concerns and those of the dentists


NARRAGANSETT BAY COMMISSION

ENVIRONMENTAL
BEST MANAGEMENT PRACTICES *for*
the Management of Waste Dental Amalgam

The Narragansett Bay Commission (NBC) has developed the following set of Environmental Best Management Practices (BMPs) for the Management of Waste Dental Amalgam to help the dental community safely and economically reduce the amount of mercury released into the environment. Dental facilities serviced by the NBC have two procedural options available to them regarding the proper management and compliant discharge of dental process wastewater to the NBC sewer system.

Dental facilities choosing Option 1 must install, use and maintain an amalgam separator with a separation efficiency of 99% when tested according to ISO 11143 standards and must demonstrate compliance with the "Mandatory" portion of the enclosed BMPs. Dental facilities choosing Option 1 will be excluded from conducting costly end-of-pipe wastewater sampling monitoring requirements.

Dental offices utilizing Option 2 are not required to install an amalgam separator but will be required to implement all other applicable Mandatory BMPs, and will be required to monitor and sample their process wastewater discharges on a regular basis in order to demonstrate continuous compliance with all applicable NBC discharges limits.

The NBC strongly encourages the use of ISO 11143 certified amalgam separators (Option 1). These separators help to remove more mercury from dental wastewater without having overly burdensome to operate or maintain. Based on NBC's current discharge limit for mercury, as little as 1/10,000 of a gram of amalgam in one gallon of wastewater would place your office in non-compliance resulting in additional sampling and monitoring costs. Continued non-compliance with NBC discharge limits can result in having your name published in the newspaper as being in significant non-compliance and/or the issuance of fines and penalties.

As part of the NBC BMP, dental facilities are given two options to discharge wastewater that may be contaminated with waste dental amalgam. The first option requires the installation of an amalgam separator. The second option does not require the installation of pretreatment equipment but requires the dental facility to sample the waste streams potentially contaminated with mercury. All dental facilities are required to implement other programs regarding training of staff and storage and disposal of amalgam waste. During 2004, the NBC Pretreatment Staff initiated the Dental BMP Program and began issuing permits to dental offices that implemented the BMP standards.

State of Rhode Island and Providence Plantations
OFFICE of the GOVERNOR
The Governor
of the
State of Rhode Island
Extends His
Greetings and Best Wishes to the
Narragansett Bay Commission
In Recognition of
implementing Environmental Best Management Practices in its Management of Waste Dental Amalgam program, which addresses a significant source of mercury emissions in Rhode Island. NBC's achievements in this area demonstrate a commitment to the environment and the health and public safety of all Rhode Island residents.
In recognition whereof, I have hereby set my hand and caused the Executive Seal of the State of Rhode Island and Providence Plantations to be hereunto affixed this 24th day of September 2004.
Donald L. Carcieri
Governor

A half-day workshop to introduce Dental BMP was held on March 31, 2004 another half-day workshop focusing on the installation, operation and maintenance of amalgam separators was held on May 12, 2004. This workshop also addressed concerns regarding the BMP and further explained BMP requirements. Both workshops were well attended by representatives of the dental community.

Throughout 2005 Pretreatment and ESTA staff continued to work with the dental community to ensure compliance with the BMP. As of the end of 2005, all dental facilities elected to implement Option 1 of the BMP.

In November 2004, the NBC was awarded a Citation by the Governor of Rhode Island for the development and implementation of the BMP. The citation acknowledged the cooperative efforts of the Pollution Prevention, Pretreatment and Public Relations Sections of the NBC along with the Rhode Island Dental Association. The NBC Dental Amalgam BMP Program has been recognized on a national level by the National Association of Clean Water Agencies (NACWA), and was awarded on Environmental Achievement Award for developing the BMP. NACWA also requested that the NBC participate in a three year international mercury loading study of treatment plants that have implemented mercury amalgam discharge control programs.

From 2003 through July 2006 EMDA has collected influent, effluent, sludge and grit samples monthly at Field's Point using "Clean Sampling" techniques and the samples were analyzed by both the Hampton Roads Sanitation District in Virginia and NBC laboratories. The comparison of these results will help our laboratory achieve low level mercury "clean analysis" of <1.0 ppt. To date our laboratory's detection limit for mercury is 1.4 ppt. The NBC mercury reduction project has been very successful at reducing mercury loading. In 2006 the loading was reduced by 18.8%. Since the inception of the BMP program mercury loadings were reduced by 16.1%.

Septage Permitting Program

During 2000, it was brought to the NBC Pretreatment Section's attention that the NBC Septage Receiving Facility located in Lincoln, Rhode Island was experiencing operational difficulties. One problem involved the capacity of the facility being exceeded on several occasions causing early shut down of the facility's daily operations. Another problem was occasional sewer blockages occurring downstream from the station. In addition, the Pretreatment Section received reports of instances of septage hauler non-compliance with NBC Rules and Regulations and NBC septage disposal permit requirements. Several examples of such reports described manifests being falsified, truck capacities differing from that specified by permit, trucks hauling grease and/or solids laden wastewater to the facility, and septage being brought to the facility from outside the boundaries of the state of Rhode Island, contributing to facility capacity exceedances.

In order to ensure the continued smooth operation of the facility, which was undergoing construction upgrades, a septage task force was created. The task force consisted of staff members from various NBC sections. The task force worked on issues involving the automation of the check-in/discharge procedure at the facility, septage sampling, user billing protocols, verification of manifest information, accurate hauler truck capacity determination, and development of methods to ensure that residential quality septage only was discharged to the facility.

In response to the reports of haulers violating permit requirements, the Pretreatment Section initiated enhanced regulation of the septage haulers. Inspectors were routinely stationed at the facility to verify that trucks were permitted and complying with NBC regulations and permit requirements.

Measurements of tank dimensions were taken in order to calculate truck volumes as a means to verify permit application information. Septage samples, which are routinely collected for pH and metals analysis, were taken for oil and grease analysis to ensure that only septage of residential quality was being brought to the station. In addition, manifests are reviewed in detail by office staff, and hauler clients are routinely contacted to verify authenticity of the manifests.

Pretreatment staff began inspecting and permitting commercial facilities discharging to septic systems whose septage was being brought to the receiving facility. The purpose of this protocol is to ensure that sanitary waste only is being discharged to the septic system and that commercial waste, such as grease from kitchen operations is not discharged.

The septage facility construction modifications went on-line in the Spring of 2001 and included new grit removal and odor control equipment. Pretreatment staff worked diligently in 2001 with other NBC departments as indicated above to ensure all procedures, protocols and equipment were in place by the date the new septage equipment became operational.

During 2001, Pretreatment staff installed computer chips on every septage truck. These computer chips identify the vehicle, all pertinent hauler information, and automatically debit the haulers customer service billing account when touched to a chip reading wand. Throughout 2006, Pretreatment staff spent one day each month at the septage facility inspecting vehicles and checking hauler's paperwork and manifests. In addition, while at the septage facility the Pretreatment Technicians conducted educational training sessions regarding discharge procedures and paperwork completion.

Septage truck discharging at the Lincoln Septage Station

New permits were issued in early 2002 to all septage haulers to incorporate exact truck capacity volumes and more concise wording prohibiting the discharge of grease and other prohibited materials. In addition, staff stepped up the manifest verification process beginning in August 2002. During 2006, 84 items listed on manifest forms were verified. This is an increase from 2005. Pretreatment staff will continue to inspect and permit commercial establishments that dispose of their septage at NBC facilities to ensure the septage is strictly of residential quality and will not adversely affect NBC facilities. Inspectors shall continue to maintain a presence at the facility to discourage attempts of illegal prohibited discharges.

Grease Discharge Control Program

In 1990, the NBC instituted a Grease Discharge Control Program to control the discharge of grease and animal fats from restaurants and food preparation facilities into the sewer system. At that time, the NBC was experiencing major operational problems within the sewer system and at the wastewater treatment facility, problems directly attributable to grease accumulation. These problems ranged from grease fouling equipment and controls at the wastewater treatment facility to grease completely blocking the flow in sewer lines, resulting in sewage backups into the basements of homes and businesses. The NBC Grease Discharge Control Program has essentially resolved these problems.

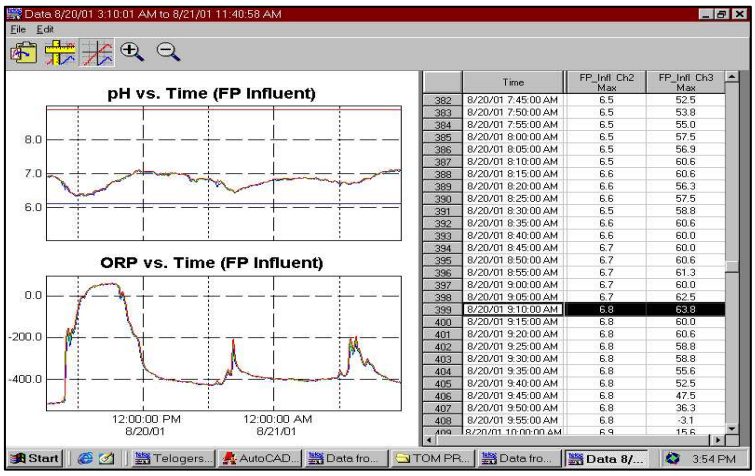
The NBC Grease Discharge Control Program is a permitting program which requires commercial users to install one of two acceptable types of grease removal units (GRU), the automatic electrical type GRU or the large in-ground passive type GRU. The permit requires the user to implement a series of Best Management Practices (BMP) which are incorporated into the permit to ensure the proper operation of the GRU. 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 is currently in the process of developing a Residential Grease Control Program to control the discharge of grease from residential sources to the sewer. A brochure outlining the impacts of grease on the sewer system and ways to eliminate grease from the wastestream is being prepared and will be mailed to all users of the NBC sewer system.

Treatment Plant Influent Computer Monitoring Program

The Providence area was once known as the "jewelry capital of the world." Although the number of metal finishers has decreased in recent years, numerous metal finishing companies still operate in the NBC service area and the potential for wastewater pollution from toxic chemicals is great if on-site pretreatment is not performed properly. Metal finishing companies have the potential to discharge high and low pH wastewater in conjunction with heavy metals; likewise, wastewater with a high or low oxidation / reduction potential (ORP) can be associated with a discharge of cyanide, hexavalent chromium or excessive chlorine.

Several years ago, using Environmental Enforcement Funds obtained from fines levied on polluters, the Pretreatment Section purchased environmental probes and data recording equipment manufactured by Telog Instruments, Inc. to monitor the wastewater influent at the treatment plants. The monitoring stations continuously record and transmit pH and oxidation / reduction potential (ORP) data to the Pretreatment office each night via modem and telephone line. Since pH and ORP data may indicate the presence of a more serious pollutant, influent data is reviewed on a daily basis. A monthly analysis of the data is performed to help determine trends associated with plant operations. Data from the monitoring stations can also be viewed in real time from Pretreatment office computers. Viewing data in real time is useful in the event that an unusual influent impacts the treatment plant. Staff located in the office can immediately observe the influent status and determine the course of action to take. Computerized monitoring of the POTW influents will continue in 2007.



Screenshot of treatment facility influent monitoring software

The remote monitoring program was expanded in 2005 and to include additional parameters at pump stations throughout the two NBC districts. The NBC Pretreatment and Engineering Sections worked installed LEL probes at the Washington Park, Reservoir Avenue and Central Avenue Pump Stations and configured existing telemetry equipment to notify the Pretreatment Office if programmed set points are exceeded. The data can be viewed using the Plant Information system. This equipment will assist Pretreatment with tracking releases of flammable materials such as solvents and fuels and allow the proper response to prevent such materials from impacting the treatment facilities.

Nine Minimum Controls Compliance Program for CSOs

Throughout 2006 the NBC Pretreatment, ESTA and EMDA Sections continued to ensure compliance with the pretreatment, pollution prevention and monitoring elements of the Nine Minimum Controls Program for CSOs detailed in the RIPDES permits. The Pretreatment and ESTA Sections 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 the ESTA staff for help to come back into compliance. These programs ensure that industrial wastewater is getting to the POTWs properly. This is supported by the sampling conducted by EMDA.

EMDA staff collect numerous samples to ensure compliance with the Nine Minimum Controls Program. In addition to the industrial and manhole sampling discussed in CHAPTER IV, EMDA collects twice weekly samples for fecal coliform from the Woonasquatucket, Providence, West, Blackstone, and Moshassuck rivers. 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. EMDA re-samples sites that show high fecal coliform bacteria concentrations during dry weather periods. Samples greater than 1000 MPN/100 ml are re-sampled under dry weather conditions. EMDA 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 ESTA Programs and the effectiveness of the NBC Nine Minimum Controls Program. 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 2006, EMDA staff collected samples at CSOs located in the Field's Point and Bucklin Point districts to measure contaminant levels during wet weather overflow events at the first flush, the height of the storm and near the termination of the event, CSO sites downstream of industrial areas were selected for this sampling. Grab samples were collected for toxics, including total metals, TSS, BOD, VOCs, Oil and Grease, TPH and cyanide. The results were compared to the NBC local discharge limitations for the district. All parameters met the local limits, indicating the NBC pretreatment and pollution prevention elements of the NBC Nine Minimum Controls Program are effective.

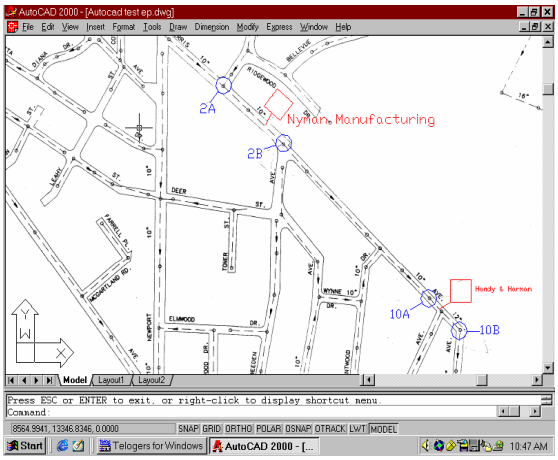
The NBC also works with the community to minimize the impacts of CSOs. A program to stencil and label catch basins in the districts has been implemented. The stencils say "Don't Dump Drains to the Bay". In addition, the NBC works with the City of Providence during river clean up events to ensure the streets in the surrounding area are swept after the event to minimize the impact on the river.

Computerization of Sewer System Maps Project

The NBC Pretreatment Section maintains a set of 33 different maps to identify the location of each significant industrial user and the manholes that are used for surveillance monitoring of each SIU. Paper copies of these maps are stored in each Pretreatment and EMDA vehicle for reference during special investigations and for manhole monitoring activities. The status of the Significant Industrial Users is always changing, since new

facilities open and existing facilities close or relocate. This creates a challenge with the paper map system because each time a new SIU begins operating, the master map must be updated, copied, and distributed to each of the 15 locations where copies of the maps are stored. This is not only time consuming but also expensive. In order to simplify the process and make the maps more useful and accessible, the NBC initiated an ambitious goal of converting all existing maps to a digital format in an AutoCAD platform.

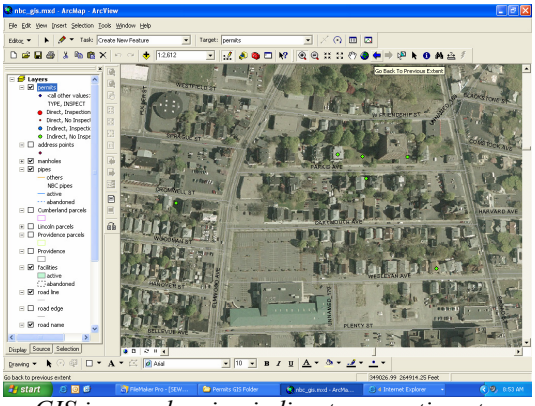
During 2003, the NBC began to identify the locations of each permitted user and the location of the keymanholes associated with SUI's and Zero Discharge companies. This process was completed in early 2004 for existing permitted users. As new companies are permitted the information is entered on the computerized maps. Information regarding each user's location is placed on a layer of the AutoCAD drawing associated with the user's category. By storing information in different layers the NBC is able to filter out information that does not pertain to the current needs of the investigator. Investigating colored wastewater impact to a NBC facility is more effective with the computerized maps since Pretreatment staff is able to show only those users who have the potential to discharge colored wastewater.



Portion of East Providence map showing the location of two SIUs and their surveillance monitoring manholes

These maps are stored on the NBC computer network and are widely available to NBC staff from their computer workstations. In addition, the NBC has purchased two laptop computers that have access to the maps and can be used during special investigations. This tool is more powerful than the paper maps and can be updated easily so they contain the most current information.

During 2006 the Permits & Planning Section began to implement GIS. Sewer connections are located on the NBC GIS system maps. Direct and indirect connections are differentiated. A database which includes the applicant name, address and connection type, has been created for GIS. In late 2006 Pretreatment staff began working Permits Planning and Engineering staff to locate industrial and commercial users on the NBC GIS software.



GIS image showing indirect connections to the NBC sewer system

River Restoration Initiative

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 Commission employees, local business owners and members of the community in reclaiming the Woonasquatucket as a valuable community resource, and guided by the expertise of the Woonasquatucket River Greenway Association, the Chairman appointed the Director of NBC Policy, Planning & Regulation Division to spearhead volunteer clean-up efforts.

In late 2002 the NBC requested to the Governor and General Assembly that Year 2003 be recognized as the "Year of the Woonasquatucket River" and that June, 2003 be declared as "Rivers Month". Both requests have been granted and the NBC took an aggressive role in 2003 to ensure many activities take place aimed to bring about public awareness of the areas polluted rivers.

During 2006, the NBC sponsored an Earth Day Clean-Up event of the Woonasquatucket River on April 20, 2006. The event took place at sites along the river from Park Street to Olneyville in Providence. NBC staff as well as volunteers from the public and private sectors participated in this event. The clean-up was successful, as approximately 72 cubic yards of material was removed from the river and along the banks. The items removed from the river included tires, bottles, cans, auto parts, scrap metal, and trash. The NBC worked with the City of Providence to ensure the streets in the surrounding area were swept after the event to further clean the area and minimized additional impact on the river.

As a result of the hundreds of tires removed from the river, the NBC plans to pursue legislation to discourage tire dumping in Rhode Island's rivers. In addition, the NBC plans to work closely with DEM and city officials to ensure enforcement of existing river dumping and solid waste disposal regulations.

The NBC will also host and/or sponsor clean-up events during 2007 to further enhance the beauty and public safety of the Woonasquatucket River. The NBC has worked to develop the elements of a corporate sponsorship program to restore the Woonasquatucket River. This work will continue in 2007.

Data Analysis and Special Studies

Beginning in January of 2001, EMDA has brought together key staff from multiple departments and sections, on a monthly basis, to discuss the status and trends of wastewater treatment at NBC's two treatment facilities. Representatives from the Pretreatment, Operations, Engineering, EMDA, and Laboratory Sections meet to discuss the current plant performance, ways to improve the performance at the treatment facilities, and address related issues.

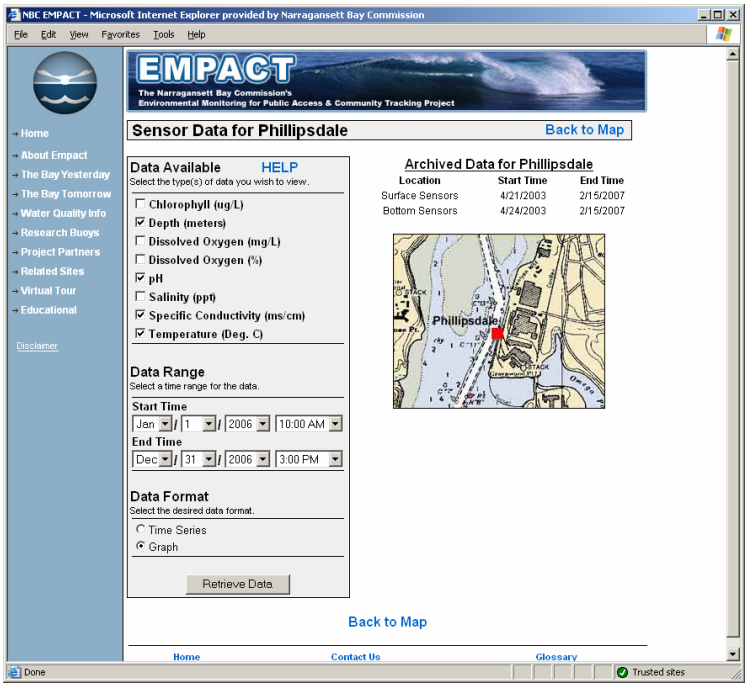
The meetings begin with a presentation of figures developed by EMDA's scientists and managers, summarizing recent plant performance. The agenda is focused on current process data and the process control strategies in use. Through these meetings problem areas are identified and corrective action or additional research is promptly initiated. Permit violations, if any, and plant performance are discussed in detail and solutions to problems are conceptualized. Pretreatment staff present information that pertains to industrial discharges into the collection system. Inter-facility exchange of information between managers of the two treatment facilities has proven particularly valuable in assessing common problems and providing new ideas for investigation or solution.

As new regulations are set, the demands on process control become greater. Better communication between operators, engineers, laboratory analysts and scientists will be needed to design and improve sampling studies, improve the quality of analytical measurements, install and maintain continuous monitoring instruments, and discuss the meaning of the data generated in order to make the correct process control decisions.

Water Quality for Narragansett Bay at Buoy and Dock Sites

In 2006, the EMDA Section continued work on the formerly EPA-funded Environmental Monitoring for Public Access and Community Tracking (EMPACT) Project. The monitoring stations established under the EMPACT project extend water quality monitoring of Narragansett Bay into the upper, urbanized reaches of the estuary and the important data generated by this project is available in real-time on the internet at **www.narrabay.com**. These stations have been established in proximity to the Field's Point and Bucklin Point wastewater treatment plant outfalls. The Bullock's Reach buoy station is located between Gaspee Point and Conimicut Point in the Providence River and the Phillipsdale Landing station is a dock site located on the Seekonk River in East Providence. These monitoring stations directly benefit Narragansett Bay research by allowing for continuous, real-time water quality monitoring in the Providence and Seekonk Rivers. Through radio telemetry and phone connections, Bay researchers can consistently track changes in the rivers from a remote location, saving valuable resources and decreasing the response time to anomalous conditions. This data also provides a baseline of water quality across seasons, as well as prior to major waterway changes such as dredging.

State-of-the-art technology at these sites collects measurements for depth, temperature, salinity, pH, dissolved oxygen, turbidity (at the bottom) and fluorescence, a proxy for chlorophyll and phytoplankton activity (at the surface). Data is collected by the sondes at the Bullock's Reach buoy and Phillipsdale Landing dock site every 15 minutes. Data from the buoy is transmitted via radio signal to a base station at Field's Point every hour and data from the Phillipsdale Landing station is transmitted every hour by phone connection. During 2001 and 2002, EMDA and URI-GSO worked together to service and maintain the Bullock's Reach buoy. In 2003, the buoy maintenance was taken over by EMDA. EMDA staff continued to maintain the buoy as well as the Phillipsdale Landing dock site since that time. The EMDA staff is also continually making improvements to equipment and infrastructure to ensure the reliability of data collected.



EMDA staff continued to participate in the Narragansett Bay Fixed Site Water Quality Monitoring Network by attending meetings with the RIDEM, URI, and the Narragansett Bay National Estuarine Research Reserve (NBNERR) to coordinate efforts and streamline data from all Narragansett Bay fixed monitoring sites.

A new buoy was deployed by the NBC in 2006 to replace the Bullocks Reach buoy which was struck by a vessel and destroyed in late 2004. A new YSI 9600 nutrient monitor was also purchased and deployed with the buoy in 2006. The instrument was only deployed for a short amount of time, due to operational issues that needed to be addressed.

Data from the Bullock's Reach buoy site has become an important component of the RIDEM's monitoring of water quality in the upper reaches of the Bay. In late 2003, uncorrected raw data from both water quality stations also became available for use by the general public via a link on the NBC website, located at **http://www.narrabay.com/empact/**.

Emergency Situation/Extreme Conditions Sampling

The NBC has implemented a program to immediately provide monitoring in the event of an extreme weather condition or an emergency that may adversely affect water quality in our receiving waters. The NBC is prepared to immediately undertake the monitoring necessary to evaluate the impacts from the event. There were two cases in 2006 where the NBC identified events that warranted special monitoring. The first was in May 2006 when, in response to historic amount of rainfall which caused flooding in Massachusetts.

Extensive sampling of NBC's receiving waters as well as sampling of all of the important rivers that discharge into Upper Narragansett Bay from Massachusetts was conducted. This monitoring showed 85% of the total nitrogen discharged into Upper Narragansett Bay users originating in Massachusetts.

The second event that precipitated monitoring was a July 18, 2006 fire and resulting fuel spill that occurred in the port of Providence when a tanker unloading gasoline caught fire. Samples were collected from nine sample locations in the Upper Bay and Providence River, while fire fighters continued to extinguish the smoldering dock and debris. This monitoring data found that Bay Water Quality was not seriously affected by the fire.

Woonasquatucket River Education Program

In June, 2002 EMDA was awarded a grant by the Partnership for Narragansett Bay to design and implement an education project. The approved pilot program, entitled '*What's In Your River: A Woonasquatucket River Education Pilot Project*' educated students in grades 3-5 on the importance of their local watershed.

The pilot project was designed in conjunction with the Woonasquatucket River Watershed Council (WRWC), and gave students within communities along the Woonasquatucket River an interactive learning experience built around a local river system, extending to the diverse ecosystems of the entire watershed. The project involved six schools from five communities along the Woonasquatucket River: Providence, North Providence, Johnston, Glocester, and Smithfield. Participating classes ranged from grades 3-5, with approximately 200 students involved. The project lasted for one full school year (2002-2003).

Additionally, the pilot program provided an internship to one area student enrolled in a college teaching program. An education project intern was hired in 2002, and worked with EMDA staff to design and implement the final stages of the project. In addition to the internship offered through the grant, the NBC funded a summer intern in 2002 to assist in compiling materials for the teacher handbook. EMDA staff began work upon notification of the grant award. Preparation continued throughout the summer months to have the project in place by the opening of the school year. EMDA staff created a Project Handbook containing information on the NBC and the WRWC, the Woonasquatucket River watershed, history and culture of the area, information on collecting and interpreting data, and supplemental activities for students. Concurrently, monitoring kits and supply trunks were created for distribution to participating classrooms, and individual monitoring sites were selected for each school to utilize over the course of the project. Monitoring kits include tests for dissolved oxygen, nitrates, phosphates, turbidity, pH, BOD, temperature, and macroinvertebrate observation and identification. Supply trunks include all equipment necessary for field visits, including nitrile gloves, anti-microbial hand wipes, and waste containers.

The project kicked off on October 18, 2002 - National Water Quality Monitoring Day. Students visited Waterplace Park in downtown Providence for an introduction to the project and heard presentations from representatives of the USEPA, Northern Rhode Island Conservation District (NRICD), and the Providence Office of Cultural Affairs. Additionally, Margherita Pryor of EPA-New England presented each school with a certificate of participation in National Water Quality Monitoring Day by way of the Education Project.

Following the activities at Waterplace Park, students and teachers visited various sites around the Woonasquatucket watershed for an introduction to the monitoring methods and equipment to be used for the duration of the project. Students came together again at Georgiaville Beach in Smithfield, and finished out the day with additional sampling activities on the shores of Georgiaville Pond. Data collected over the course of the day has been posted on the Year of Clean Water website for viewing and use by participating schools.

Students participating in the NBC Woon Watershed Explorers Program

At the end of 2002, EMDA continued to work on the Education Project by conducting in-class visits for each participating school to give more in-depth instruction on the monitoring kit to be used, as well as interpreting the results of testing. The project culminated in May with a Children's Environmental Conference hosted by the NBC. All schools were provided an opportunity to come together to share their results and discoveries about the health of the Woonasquatucket River and its ecosystems.

In the fall of 2003, the program expanded to include over 800 students. The 2003 - 2004 school year program began in October with students meeting at various locations along the banks of the Woonasquatucket and Seekonk Rivers. The students conducted experiments for pH, nutrient, and temperature on sample collected from the rivers.

In 2004, the *What's In Your River* environmental education program continued to flourish. Four schools signed up to participate and in early fall each visited their local watershed with staff from the NBC for a water quality monitoring event. The program continued through the end of the 2005 school year, consisting of two additional water quality monitoring events as well as an environmental symposium where students and teachers from each participating school presented data findings and participated in fun educational activities. A new component was added to the program in 2004, a contest which asked each school to come up with public service announcements supporting clean water in the state of Rhode Island. Three winning announcements will be chosen were be aired on the local Radio Disney station. The entire program including buses, supplies, staff and all educational materials was funded by the NBC.

The Narragansett Bay Commission improves the program each year. In 2005, *What's In Your River* became the *Woon Watershed Explorers Program*. This program included several new components including classroom visits once a month, student achievement badges and journal writing. There are nine schools and more than 400 students involved. The most impressive characteristic of the program is the extreme diversity represented in each school. Some students have never taken a field trip to their local river, while others live adjacent to one. The Narragansett Bay Commission considers this program to be imperative to its success in its relentless pursuit of public outreach and education.

Regional Ocean Modeling System – ROMS

In October of 2004, the NBC entered into a two-year contract to fund joint work with the coastal physical oceanography lab led by Dr. Chris Kincaid of URI - Graduate School of Oceanography to further circulation and hydrodynamic modeling efforts for the Providence and Seekonk Rivers and upper Narragansett Bay. The goal of this work is to develop models of circulation and transport within the Providence and Seekonk Rivers and Upper Narragansett Bay for aiding in the management of the NBC treatment facilities. The development of hydrodynamic modeling will allow the NBC to track the fate of a pollutant through Narragansett Bay once it was discharged from one of the treatment plants. It is the NBC's goal that this modeling project will ultimately lead to the development of a nutrient Total Maximum Daily Load for Narragansett Bay.

During year one of the project, the most comprehensive set of field data to date on Upper Narragansett Bay circulation was acquired using Acoustic Doppler Current Profilers (ADCP) in the Providence River. Three separate bottom mounted ADCPs were deployed in the Providence River from July through October, 2005 by the Kincaid group with assistance from the NBC Environmental Monitoring Section. ADCP data over complete tidal cycles was also acquired at the three transect locations. The data acquisition was performed using an ADCP mounted on the side of the NBC's R/V Monitor, and a Seabird

SB19 CTD was towed behind the R/V Monitor at a depth of approximately 1 meter. In 2006, the Seekonk River was added to the hydrodynamic model using data from additional bottom mounted ADCPs. Per RIDEM's request, the calibration of salinity in the model was also checked and found to have proper conservation within the system. A final report from URI is due in early 2007 to summarize the work that has been done thus far on the project.

Floatables Control Program

The NBC has a long-standing commitment to improving water quality in the urban rivers of Providence. In addition to removing a significant portion of debris within the rivers during hosted clean-up events, these events also remove debris from the river banks. This debris, during rain events, can become floatable pollution in the rivers, as water levels rise and wash away wind-blown items such as food packaging, plastic bags, and other non-sanitary items. Previous work by the NBC during 2004 indicated that the majority of floatable pollution in the rivers does not originate from combined sewer overflows, but rather from improperly discarded litter. The NBC has employed various methods to control floatable debris such as deploying booms across he Woonasquatucket River, netting across a combined sewer outfall, as well as hosting river clean-up events. In 2006 the NBC hosted an Earth Day River Clean-Up which resulted in approximately 72 cubic yards of materials, including tires, trash, bottles, auto parts, and scrap metal, being removed from and around the river. In addition, Pretreatment and EMDA staff deployed a boom across the Woonasquatucket River at Donigian Park. Prior to removing the boom, the quantity of floatables retained by the boom was evaluated and quantified. The NBC will continue its efforts on floatables control in 2007.

VIII. NBC Pretreatment Program Goals

Status of 2006 Goals

The 2005 Pretreatment Program Annual Report was submitted to the Rhode Island Department of Environment Management (DEM) on March 15, 2006 and defined the goals established for 2006 for the NBC toxic reduction and control programs. These goals are often above and beyond those Pretreatment Program requirements mandated by the DEM and the Environmental Protection Agency (EPA). This chapter outlines the progress made during 2006 toward meeting these goals and defines the goals established for 2007.

- **2006 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, the Pretreatment and Environmental Monitoring personnel will attempt to inspect and sample all SIUs at least twice each twelve month period.

  Accomplishment: The Pretreatment and EMDA Sections satisfied the EPA and RIDEM mandates for conducting sampling and non-sampling inspections of each SIU facility 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 try to inspect each SIU twice, as all but one SIU was inspected two or more times. The one firm that was not inspected twice was C&C Rhode Island, LLC. This company purchased RIBCO, Inc. late in 2006. Only one inspection was conducted after the sale. However, RIBCO, Inc. was inspected four times in 2006, once just prior to the sale. The EMDA Section performed well toward satisfying its self-imposed goal to sample each SIU at least twice in 2006 by sampling each SIU multiple times with the exception of one firm. The firm, CHN Andoizing – American Metals, ceased process operations in early 2006. The firm did not give the NBC adequate notification prior to ceasing process operations. The NBC was able to collect one sample prior to the company ceasing discharges. Many significant users were sampled more than twice due to the implementation of a monitoring procedure to immediately resample any user once a violation is observed as a result of a NBC sampling event. Additional information regarding the NBC sampling and inspection programs is provided in CHAPTER III.

- **2006 Goal:** The Pretreatment staff will attempt to conduct an annual inspection of each non-significant industrial user, annual 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: During 2006, the Pretreatment staff continued its routine inspection program of commercial and non-significant industrial users. In 2006, the Pretreatment staff conducted 2,106 inspections and inspected approximately 86.8% of permitted non-significant industrial users. During 2006, Pretreatment Technicians inspected 51.6% of the permitted restaurants and commercial buildings with cafeterias, and 32.9% of all other commercial users, somewhat short of our self imposed goal. Additional information regarding the NBC inspection program is provided in CHAPTER III.

- **2006 Goal:** Perform expeditious 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 Narragansett Bay Commission sewer system. Formal staff plan review meetings are conducted weekly to ensure prompt response to user plan submittals and to expedite the permitting process. Permitting of various classes of non-significant users located in both districts was ongoing in 2006, as 401 wastewater discharge permits were issued in various industrial and commercial categories. During the year, permits were issued to metalfinishers, centralized waste treatment facilities, restaurants, supermarkets, automotive repair shops, printers, photo processors, dental offices, doctor offices, and other medical facilities using x-ray equipment. Permitting of new users was ongoing during 2006, as 191 new permits were issued, the majority to non-significant industrial and commercial users. The Pretreatment and Permitting Sections routinely perform expeditious reviews of discharge and sewer connection permit applications and work closely to ensure that contractors' and users' needs are promptly addressed. During 2006 the Pretreatment Section performed expeditious reviews of 346 process and pretreatment system plan submittals. Of these 346 plan submittals, 213 were promptly approved, 41 approved with conditions to be met, 21 were rejected since NBC requirements were not satisfied and no action was taken initially on 71 plans since additional information was required for approval.

  The Permitting Section continued to meet its goal of responding to incomplete Sewer Connection Permit Applications within two days and issuing permits within ten business days in 2006. During 2006, 583 Sewer Connection Permits were issued. This represents a 19.0% decrease from 2005. Additional information regarding this program is provided in CHAPTER VII.

- **2006 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 50% of the mill complexes/industrial areas situated within the two sewer districts to identify new and previously unknown sewer users.

  Accomplishment: For many years, the NBC has conducted a program of performing unannounced inspections of mill complexes to identify facilities discharging without a permit. This program has been quite successful in the past. During 2005 senior Pretreatment staff continued to conduct surveys of the NBC district to ensure that the existing list of known mill complexes and industrial parks was complete. As a result of these surveys, the number of industrial parks and mill complexes requiring annual inspections was greatly increased from 52 in 2004 to 68 in 2005. The 2006 goal was not met, as 29 of the 68 industrial parks and mill complexes were inspected at least once in 2006, 42.7% of all identified locations. This program of conducting unannounced inspections of industrial parks and mill complexes to locate new and previously operating unpermitted users was quite successful. In addition to performing mill complex inspections, Pretreatment staff routinely reviews newspapers, telephone books and manufacturers directories to locate new and previously unknown sewer users. All of these methods were utilized during 2006.

- **2006 Goal:** Continue the restaurant grease removal study, complete the data collection and develop a report in preparation for a public workshop regarding restaurant grease removal technologies. The NBC also proposes to publish technical papers detailing the results of the grease study once it is completed.

  Accomplishment: In 1990, the NBC began to require restaurants located in problematic drainage areas of the district and all new restaurants to install grease removal equipment. Since that time, the NBC has been assessing the effectiveness of the grease removal equipment available. The grease removal study is an on-going project, which consists of a wastewater sampling program and user survey program to determine the effectiveness of the various types of grease removal equipment. During 2001, Pretreatment staff selected several restaurant and food preparation facilities to work with to determine optimum grease removal unit maintenance requirements. During 2002, Pretreatment staff further defined the restaurants to be sampled and the sampling protocols to be used. Monitoring began in 2003 to evaluate the effectiveness of the optimization methods implemented at the restaurants. The data was reviewed during the early part of 2004. Based on the conclusions, the study was redefined to incorporate better controls. Sampling began for the redefined study in 2004 and continued throughout 2005. This information will be used to develop Best Management Practices for the various types of grease removal systems used by this class of users. During 2006, 525 restaurant inspections were conducted. These inspections represent 55.8% of all permitted restaurants.

The NBC began the process of developing a Residential Grease Control Program to control the discharge of grease from residential connections. During 2006, the NBC continued to develop a brochure to inform residential users of the effects of grease on the sewer system and how to handle grease in their own kitchens. The brochure will be mailed to all residential users.

- **2006 Goal:** Dental Mercury Sources and Control - Identify pollution prevention and control options, assist Dental community with implementing source control and review possible participation in National Association of Clean Water Agencies (NACWA) study regarding Dental Mercury loadings to POTWs.

  Accomplishment: NBC's Pretreatment and Environmental, Safety & Technical Assistance Programs with assistance from the Public Affairs Section, finalized the Best Management Practices for the Management of Waste Dental Amalgam (BMP) in early 2004. The BMP included two options for the management of amalgam bearing wastewater as well as mandatory BMPs for all dental facilities to follow. The first option requires the dental facility to install an amalgam separator that has been certified with a removal efficiency of 99% or greater by ISO 11143 standards. Sampling would not be required at facilities implementing this option. The second option requires dental facilities to sample amalgam bearing wastestreams and be in compliance with the stringent NBC silver and mercury NBC discharge limitations. All dental facilities are required to adhere to the following BMP standards:

  - Thoroughly clean all existing sink traps and drains to remove accumulated mercury.
  - Properly maintain and operate vacuum pump filters.
  - Create and maintain accurate maintenance records.
  - Develop and implement mercury spill control procedures.
  - Install and properly maintain chair side amalgam traps.
  - Develop and implement an employee environmental training program.

  Two informational workshops were held with the dental community. The first workshop introduced the BMP to the dental community and was held on March 31, 2004. The second workshop was held on May 12, 2004 and addressed concerns, further explained requirements of the BMP and NBC staff assisted with required paperwork. Representatives from manufacturers of amalgam separation equipment were present at both workshops. Permits incorporating the BMP began being issued to dental facilities in June, 2004. Throughout 2004, Pretreatment and
  ESTA staff assisted the dental community to comply with the BMP. The NBC was awarded a Governor's Citation on November 23, 2004 for its efforts on the Dental BMP program. In May 2005, the NBC was awarded an Environmental Merit Award by NACWA for the BMP. Dental facilities continued to be permitted throughout 2006. All of the dental facilities opted to install amalgam separators to comply with the BMP. In July 2006, the Rhode Island State Legislature enacted a law requiring all dental facilities in the State of Rhode Island to install amalgam separators. The legislation is based on the NBC BMP.

In July 2003 baseline sampling for the NACWA dental mercury study began at Field's Point. Samples were collected at the influent, effluent, filter cake and grit. The samples were collected using clean sampling techniques. Influent and effluent samples were sent to Hampton Rhodes Sanitary District in Virginia. Solids samples are analyzed by the NBC Laboratory. This sampling continued until July 2006. In addition to sampling the aforementioned solids, EMDA staff collected samples of grit in sewer lines up and downstream of dental facilities to evaluate the impact of amalgam separators.

The NACWA study is evaluating the effectiveness of reducing mercury loadings to the sewer system through the installation of amalgam separators. The data collected as part of this study indicates slight mercury loading reductions at Field's Point over the study period. In addition to the samples collected for the NACWA study the NBC collected influent samples at both POTWs twice per week. This more robust data set indicates a significant reduction in mercury loading at both POTWs. Between 2003 and 2006 there has been an overall reduction in mercury loading to Field's Point of 32%. Similarly, Bucklin Point loading over this same time period has been reduced by 31%. A report detailing the findings of the NACWA study is to be published in 2007.

- **2006 Goal:** Continue regulatory inspections of Septage Haulers as part of the NBC Septage Discharge Control Program.

  Accomplishment: During 2001, new solids removal equipment went on-line at the NBC Lincoln Septage Receiving Station. To ensure the proper operation of this equipment, the Pretreatment Section worked throughout 2001 to completely reevaluate the NBC Septage Discharge Control Program. All septage discharge and billing procedures were reevaluated and revised. Standard operating procedures were developed and implemented regarding discharging septage, billing of septage discharges, completing and maintaining septage manifests, and weighing of septage vehicles. The master septage discharge permit was revised to incorporate these many changes. Revised permits were issued to each permitted septage hauler during 2002. Pretreatment staff also developed and distributed an educational brochure in 2002 that summarizes the NBC septage discharge regulations and procedures. In August 2002, Pretreatment staff expanded its procedure for verification of Septage Manifest forms. Pretreatment staff verified the authenticity of 84 items reported on manifest forms and conducted 31 inspections at the Septage Receiving Station during 2006. Additional information regarding the NBC Septage Discharge Control Program is provided in CHAPTER VII.

- **2006 Goal:** The Pretreatment staff along with EMDA staff will conduct computer monitoring of the influent of the Field's Point and Bucklin Point treatment plants to ensure protection of the POTWs and Narragansett Bay.

  Accomplishment: During 2006, the Field's Point Telog and PI computer monitoring systems were checked daily for unusual influents. All incidents of unusual influent were investigated. Most of these incidents were slightly high pH influents of short duration. The computer monitoring equipment at both wastewater treatment facilities will continue to be monitored routinely during 2007.

- **2006 Goal:** Conduct NBC Intra-Sectional Training to be proactive to Environmental Incidents.

  Accomplishment: During 2006 an intra-sectional training session was conducted with Pretreatment and EMDA staff. The training was on Spill Response, Tracking and Boom Deployment. The training was conducted in two parts. The first part was held in a classroom setting and covered personal protective equipment, work zone safety and procedures used to investigate spills and reports of unusual influent. The second part of the training consisted of a field drill. Staff were required to track an unusual influent back to the source and deploy a boom at the outfall of the Bucklin Point plant to protect the receiving waters. Intra-sectional training will continue to be conducted during 2007.

- **2006 Goal:** Provide training for OSHA and Safety Awareness- provide all new applicable employees with 40-hr HAZWOPER training, conduct continuous in-house hazardous awareness training, and provide Infectious Materials Exposure Control training to pertinent NBC personnel

  Accomplishment: All new employees hired in the Pretreatment, ESTA and EMDA Sections are given 40-hr HAZWOPER training. During 2006 the NBC continued its program of conducting 8-hr HAZWOPER refresher training using in-house trainers and expertise. ESTA, EMDA, and Pretreatment staff certified in 40-hr HAZWOPER training are given at least 8-hrs of refresher training throughout the year on such topics as: Hazard Communication and Hazard Recognition, Chemistry of Hazardous Materials, Confined Space Entry, Scene Spill Response and Traffic Control and Emergency Equipment Use. The NBC continues to conduct in-house employee training on CPR/AED with more than 50 employees certified in 2006. Also, during 2006 NBC made arrangements for 108 employees to receive vaccination for TD, Hepatitis A and Hepatitis B as part of the NBC Infectious Materials Exposure Control Plan.

- **2006 Goal:** Continue work on the development of the Pretreatment, Environmental Monitoring and Laboratory Standard Operating Procedures 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, EMDA and Laboratory staff and will provide a great resource for NBC employees working outside of these sections.

  Accomplishment: During 1996, Pretreatment supervisory personnel began to develop a Pretreatment Program Manual of Standard Operating Procedures and Protocols. Work on this project continued through 2006 and at this time the manual consists of all existing standard operating procedures. As existing procedures are reviewed and revised or new procedures are developed, they are documented in this manual. During 2006, the Pretreatment Sections SOP Manual was updated with all current procedures.

  During 2000, all Environmental Monitoring sampling procedures were documented and provided to all staff conducting these activities. In 2005 EMDA staff developed work aid materials for critical permit required sampling and measurements conducted by Operations staff. Work aids developed or modified during 2006 include sample collection of Field's Point sludge samples collected by Synagro staff as well as updating the Total Residual Chlorine work aid.

  During 2006, 43 Laboratory standard operating procedures were audited. Only six of the 43 SOPs needed revisions. The QA/QC program was updated in accordance Department of Health State Licensing requirements.

- **2006 Goal**: Water Audits – continue soliciting the water audit program to business and industry.

  Accomplishment: Throughout 2006 NBC ESTA staff continued its work with the metal finishing community to help reduce their process water use. Activities included technical assistance with measuring and monitoring water usage, assistance with water conservation projects and collection and reporting of water use data elements.

- **2006 Goal:** Environmental Merit Awards Program - Solicit nominations from companies and staff, evaluate all Significant Industrial User performance data, and hold Awards Ceremony.

  Accomplishment: In June 2006, the NBC recognized eleven companies for environmental achievements during 2005. One company was recognized for its extraordinary pollution prevention efforts, one organization was recognized for its efforts to reduce stormwater impacts, and nine Significant Industrial Users were presented with Perfect Compliance Awards for achieving 100% compliance with all NBC regulatory requirements.

- **2006 Goal:** Environmental Management Systems - continue involvement with Rhode Island ISO 14001 Roundtable and help to promote industrial community involvement with the Rhode Island ISO 14001 Roundtable

  Accomplishment: The Rhode ISO 14001 Roundtable did not meet during 2006. However the NBC, through its pollution prevention technical assistance efforts, continued to promote the use of ISO 14001 Environmental Management Systems among the industrial community within the State of Rhode Island through on-site technical assistance efforts, workshops, written factsheets and presentations.

- **2006 Goal**: Workshops – Conduct environmental compliance/pollution prevention workshop for NBC industrial/commercial users.

  Accomplishment: During 2006 the NBC organized and participated in two environmental compliance/pollution prevention workshops for industrial and commercial users. The first workshop was on Pollution Prevention for Auto Salvage Yards and was held in January 2006. The second workshop on Hazardous Waste Management for Auto Salvage Yards and Autobody Shops was held in June 2006. Further discussions on the workshops can be found in CHAPTER II.

- **2006 Goal:** Auto Salvage Yard Pollution Prevention - Finalize pollution prevention checklist and coordinate assistance efforts with DEM and URI (See program description in CHAPTER VII).

  Accomplishment: All EPA Grant related activities associated with this project were completed in 2006. The overall project focused on identifying and addressing environmental compliance and pollution prevention issues associated with auto salvage operations within the State of Rhode Island through the use of on-site technical assistance and education efforts. 2006 project activities included:

    - Development of an Auto Salvage ERP Baseline Data Collection Checklist
    - Completion of on-site Environmental Performance Assessments of 33 auto salvage yards,
    - Development of five Auto Salvage Environmental Progress Summary Reports including:
        - Environmental Justice background information on each auto salvage yard
        - A description of yard operations, and
        - A description of environmental improvements made by each yard as a result of there pollution prevention efforts.
    - Presentation of environmental compliance and pollution prevention information through two half-day workshops, and the development and implementation of a statewide Auto Salvage Environmental Results Program through the Rhode Island Department of Environmental Management. Additional information regarding this program is provided in CHAPTER VII.

- **2006 Goal:** Expand the weekly manhole monitoring program 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: EMDA staff conducted weekly manhole monitoring throughout both NBC drainage districts. This monitoring program consists of installing ISCO automatic samplers in surveillance manholes located upstream and downstream of users on a weekly basis to verify users' compliance status. The EMDA staff successfully sampled 391 manholes during 2006, 190 in the Bucklin Point district and 151 in Field's Point and 39 sanitary manholes. The balance of the manhole samples, 11, were collected to assist other departments in determining the concentrations of pollutants. The EMDA Section also attempted to collect samples from 22 additional manholes. Samples could not be collected due to no flow in the sewer line at the time manhole sampling was conducted or the sampling equipment malfunctioned. This is an average of approximately 7 manholes per week, meeting the goal of 6 to 10 manholes per week.

- **2006 Goal:** Further define the sewer system sampling program to assess loadings from key drainage areas to locate potential areas of concern and drainage area loadings.

  Accomplishment: In 2004, EMDA utilized ISCO flow monitoring equipment with ultrasonic, level sensing and Doppler velocity probes and data loggers. This equipment attaches to automatic samplers used by the NBC to allow for flow proportioned sampling in the sewer system. This equipment is used to monitor major drainage areas and combined sewers during wet and dry weather. EMDA has also begun sampling in NBC interceptors at metering stations, which provide flow information, allowing the estimation of pollutant mass loadings. EMDA has continued these initiatives to better define the sources of contaminants to the influent at each treatment facility. Flow proportioned sampling of drainage basins as well as analysis of stormwater input, water supply input and sanitary sewers will be used to budget inputs and improve NBC's manhole sampling program. This study was begun in 1999, was expanded in 2000 and continued in 2006. In 2005 Pretreatment and EMDA staff began planning to improve the assessment of toxic loadings from drainage areas. EMDA continued background monitoring of residential areas to better define loadings to the treatment plants.

- **2006 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: In July 1999, the responsibility of sampling the Field's Point and Bucklin Point treatment facilities was transferred to the EMDA Section from the Operations Division. On January 1, 2000 "clean sampling" techniques were implemented for all permit samples. This required the purchase of new all-weather, refrigerated automatic samplers, the changing of sampling line from PVC to Teflon, the use of acid washed and double bagged sample jugs and pre-cleaned certified sample bottles. EMDA staff used "clean sampling" technique for all industrial monitoring and treatment plant sampling for metals and nutrients conducted in 2006.

  During 2006 the NBC complied with all permit required sampling at the two treatment plants and with all mandated reporting. Sampling was conducted 365 days, including weekends and holidays. The sampling included collecting samples from the influent and effluent at both facilities for trace metals analysis twice-weekly, daily TSS and BOD testing, and three-times per week for nutrients. Oil and grease collections are monthly, bioassays are quarterly, and priority pollutant scans are semi-annual. Continued modification of process control sampling provides Operations staff with the data needed to optimize treatment and for new initiatives on nitrogen reduction.

- **2006 Goal:** To review, evaluate and log all analytical data obtained from EMDA's 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: Analytical data from industrial and manhole sampling is provided to the Pretreatment staff after review. The Laboratory Information Management (LIMS) System is programmed to automatically send email alerts to managers and key staff when industrial, collection system, and treatment plant sample analytical results exceed thresholds. This allows quicker response by the organization to abnormal levels of pollutants. The results of the tributary river monitoring for fecal coliforms is provided to Interceptor Maintenance staff twice-weekly and is used to locate possible CSO maintenance problems. Trend analyses are conducted and reported to NBC staff on a monthly basis through monthly reports and periodic meetings.

- **2006 Goal**: Monitor the receiving waters of both the Field's Point and Bucklin Point treatment facilities to continue the EMPACT Program previously funded by a USEPA grant.

  Accomplishment: In 2006 the NBC met this goal through continuation of water quality monitoring at two fixed sites within the Providence and Seekonk Rivers for dissolved oxygen, temperature, salinity, pH, chlorophyll, and tidal amplitude. A new buoy was deployed in 2006 to replace the Bullocks Reach buoy which was struck by a vessel and destroyed in late 2004. EMDA staff maintained the sites at Bullocks Reach, a buoy site, and Phillipsdale Landing, a dock site. Quality assurance practices continued to be coordinated with the Narragansett Bay Fixed Site Water Quality Monitoring Network that have adopted common methods for this baseline assessment.

- **2006 Goal:** Monitor the receiving waters of both the Field's Point and Bucklin Point treatment facilities for bacteria and nutrients levels.

  Accomplishment: EMDA created a new monitoring plan in 2006 and initiated a water quality study of the receiving waters of the Bucklin Point and Field's Point wastewater treatment facilities. The overall purpose of the monitoring study is to determine the distribution and concentration of contaminants of concern to the health of the environment in both the Seekonk and Providence Rivers. EMDA also continued fecal coliform 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. In 2005 EMDA began initial tests for Enterococci bacteria. This testing was expanded in 2006 in river, bay and treatment plant effluent samples in order to assess water quality with the new primary contact standard for fresh and saltwater. EMDA began nutrient sampling in the Providence and Seekonk River sections of the bay and of major tributary river input in the fall of the year. This nutrient work will be continued in 2007. More detailed information about these projects is provided in CHAPTER VII.

Major Program Goals for 2007

Goal Category	Goal Outline	Goal Description
Inspections	Inspect industries to ensure compliance with regulations.	▪ Inspections of SIUs twice (EPA/RIDEM requires one inspection) ▪ One inspection of each non-significant industrial user ▪ Inspect 75% 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 spot inspections of 50% of the mill complexes/industrial areas
	Continue regulatory inspections of septage haulers.	▪ Each technician will spend one half day monthly inspecting septage vehicles at the receiving station ▪ Staff will verify at least 25 septage manifest forms per year
Emergency Response Actions	Ensure protection of the two POTWs and Narragansett Bay to minimize incidents of pass through and interference	▪ Respond of 100% of unusual influent reports ▪ Respond to 100% of reports of illegal dumping, spills and blockages ▪ Respond to automatic notifications from LIMS of incidents of non-compliance ▪ Conduct annual Spill Response and Tracking training
Pollution Prevention and Technical Assistance Initiatives	Stormwater Pollution Prevention (See program description in Chapter VII)	▪ Develop two Storm Water Best Management/Fact Sheets documents ▪ Conduct two Storm Water Pollution Prevention Assessments
	Environmental Management Systems (See program description in Chapter VII)	▪ Help to promote industrial community involvement with the Rhode Island ISO 14001 Roundtable
	Water Conservation and Reuse (See program description in Chapter VII)	▪ Continue to assess water conservation efforts among industrial users
Monitoring Initiatives	Sample industrial discharges to sewer system to ensure compliance with regulations.	▪ Sampling of SIUs twice (EPA/DEM requires one sampling) ▪ Immediately resample any SIU found out of compliance
	Sewer system sampling program to assess loadings from key drainage areas to locate potential areas of concern and drainage area loadings.	▪ Update maps of areas and manholes ▪ Define schedule for key manhole monitoring ▪ Continue flow monitoring as part of sample collection efforts to define total loading ▪ Continue background monitoring of residential sources of pollutants to facilities to better define this loading
	Conduct surveillance monitoring in sewer system to ensure compliance with regulations.	▪ As needed and dependent on specific needs defined by staff observations and reports ▪ Sample 6-10 manholes per week (including surveillance and routine monitoring) ▪ Sample up and down stream of every SIU and Zero Discharge Company at least once.
	Conduct computer monitoring of influent of Fields Point and Bucklin Point to ensure protection of the POTWs and Narragansett Bay.	▪ Review the Telog and PI computer monitoring systems daily to check for unusual influents

Goal Category	Goal Outline	Goal Description
Monitoring Initiatives (continued)	Monitor Field's Point and Bucklin Point to evaluate and improve compliance with all RIPDES permitted parameters**.**	▪ Sample both facilities ▪ Collect process control samples to provide critical plant operational data to allow Operations staff to optimize plant performance ▪ Research and test new sampling equipment and procedures to continually improve monitoring activities ▪ Analyze data and report trends to NBC staff at monthly meetings
	Tributary river sampling for fecal coliform analysis	▪ Conduct weekly sampling at multiple sites on the West, Woonasquatucket, Moshassuck and Blackstone Rivers and one site on the Providence River ▪ Provide data to IM staff to allow for timely maintenance activities of the CSOs ▪ Provide trend analysis to NBC and Stakeholders
	Maintain the two NBC fixed site monitoring systems to continue EMPACT Program previously funded by a USEPA grants.	▪ Maintain the 2 fixed site stations to continue monitoring off each plant ▪ Monitor for temperature, salinity, dissolved oxygen, conductivity, pH, chlorophyll and pressure (depth) ▪ Collect bi-weekly samples at these monitoring stations for fecal coliform analysis ▪ Provide data and data interpretation to the scientific and general community on a real time basis and continue participation in the bay wide monitoring collaborative using approved QA/QC protocols
	Continue to evaluate the effect of the NBC effluent on water quality of the receiving waters	▪ Continue routine monitoring program of the Providence and Seekonk Rivers for nutrients and fecal coliform bacteria ▪ Perform additional monitoring in response to extreme situations or weather conditions that could adversely affect plant operations and receiving water quality
	Toxics Compliance Monitoring of two CSO wet weather event discharges as well as the North Diversion Structure at Bucklin Point, discharges annually as part of the NBC's CSO Nine Minimum Controls Program	▪ Conduct monitoring of CSO events by collecting samples of the first flush, maximum flow and late flow to characterize the CSO discharge impact and efficiency of CSO controls in place
	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 mouths of the Ten Mile, Runnins, Palmer, Warren Reservoir, Cole, Lee and Taunton rivers as well as from the Blackstone River where it crosses the State line ▪ Provide trend analyses to NBC and Stakeholders
	Evaluation of water quality inside the Providence Hurricane Barrier to generate a long term data set to measure the success of the CSO abatement project	▪ During times of high recreational use conduct monitoring two times a month for water quality parameters upstream of the Hurricane Barrier
	Expand NBC analytical capabilities through implementation of clean sampling and analytical techniques	▪ Review plans of the new EMDA laboratory and make recommendations necessary to ensure facilities for clean samplings are incorporated into these plans. ▪ Hire expert professional services to train staff on clean sampling techniques

Goal Category	Goal Outline	Goal Description
Permitting	Expeditious review and issuance of permits	▪ Respond to all discharge permit applications and renewals within two weeks ▪ Review of submitted engineering plans on a weekly basis in group staff meetings ▪ Response to all incomplete sewer connection permit applications within two days with issuance of permit within two weeks
Data Logging and Analysis	Design and implement a centralized database in which all analytical and meta data from all monitoring initiatives shall be deposited for use by NBC staff.	▪ Review existing databases used to store environmental data to identify improvements. In order to ease interpretation of the data develop and implement a log which will be update with any information which could affect analytical results. Create LIMS reports to ease data migration ▪ Provide groundwork for uploading selected data to internet for stakeholder review and use ▪ Provide internet access to selected data for stakeholder viewing
	Log, review, and evaluate industrial, manhole, septage, wastewater treatment facility and other related data to provide short and long term trends and alerts.	▪ Routine data logging and evaluation ▪ Formal monthly reporting of projected short and long term trends and alert levels regarding data ▪ Timely response on data excursions and alerts to Laboratory, Operations and Pretreatment staff, allowing opportunity for prompt corrective action (regulatory, administrative or operational) ▪ Begin work on LIMS – Pretreatment software to download data directly from LIMS to Pretreatment software
	Track storm water abatement technology use in new construction projects to minimize the impact of storm flow on the NBC sewer system.	▪ Provide monthly reports detailing construction projects using on-site storm water disposal systems that reduced storm flow to the NBC sewer system
Special Studies and Projects	Streamline Operations by Computerization	▪ Locate sewer connections, industrial and commercial users on the NBC's GIS system ▪ Continue to locate users and surveillance manholes on the computerized maps ▪ Update the Customer Service software with Sewer Connection Permit information
	Energy Conservation	▪ Develop report on renewable energy use options for NBC ▪ Install Met tower at Field's Point ▪ Complete Bio-gas feasibility study for Bucklin Point
	River Restoration Initiative	▪ Participate in the "What's in Your River" Program for elementary schools ▪ Investigate the development of a corporate Sponsorship Program for the restoration of the Woonasquatucket River
	Research methods to assist Operations	▪ Purchase instrumentation and develop methods to perform Toxicity Characteristics Leaching Procedures (TCLP) testing in-house.
	Research sources of fecal coliform bacteria in urban rivers	▪ Continue project to identify human vs. non-human source of fecal coliform bacteria in urban rivers ▪ Seek funding to continue above research/pilot project ▪ Develop methods for Enterroccus determination for the bacterial indicator to be used to determine the extent of fecal contamination
Internal Procedures	Document all Pretreatment Program and Environmental Monitoring Manuals of Standard Operating Procedures and Protocols.	▪ Continue to detail all standard procedures and procedural changes for the two sections

Goal Category	Goal Outline	▪ Goal Description
Education, Training and Public Awareness	Publish Annual Pretreatment Report	▪ Prepare and submit the Annual Pretreatment Report to DEM by March 15th. ▪ Upload the Annual Report to the internet by April 15th ▪ Present the finding of the report to the CAC
	Environmental Merit Awards Program	▪ Solicit nominations from companies and staff ▪ Evaluate all nominations and issue Pollution Prevention Awards ▪ Evaluate all SIU performance data for perfect compliance ▪ Evaluate sewer connection projects using Low Impact Design storm water mitigation technologies and issue an award for Excellence in Storm Water Management ▪ Hold Awards Ceremony
	Workshops	▪ Conduct one environmental compliance/pollution prevention workshop for NBC industrial/commercial users
	Provide training for OSHA and Safety Awareness.	▪ Provide all new applicable employees with 40-hr HAZWOPER training ▪ Provide 8 hr HAZWOPER Refresher training annually for all applicable employees ▪ Conduct continuous in-house hazardous awareness training ▪ Provide Infectious Materials Exposure Control training to pertinent NBC personnel
	Residential Grease Brochure	▪ Develop a brochure to be mailed to customers of the NBC detailing the effects of grease on the sewer system and measures to prevent the grease from discharging to the sewer.
	Publication of the Annual Monitoring Plan and Annual Monitoring Report	▪ Prepare a document summarizing monitoring projects and present it at a workshop ▪ Develop a monitoring plan by December 15 for approval by the Directors