



Narragansett Bay Commission

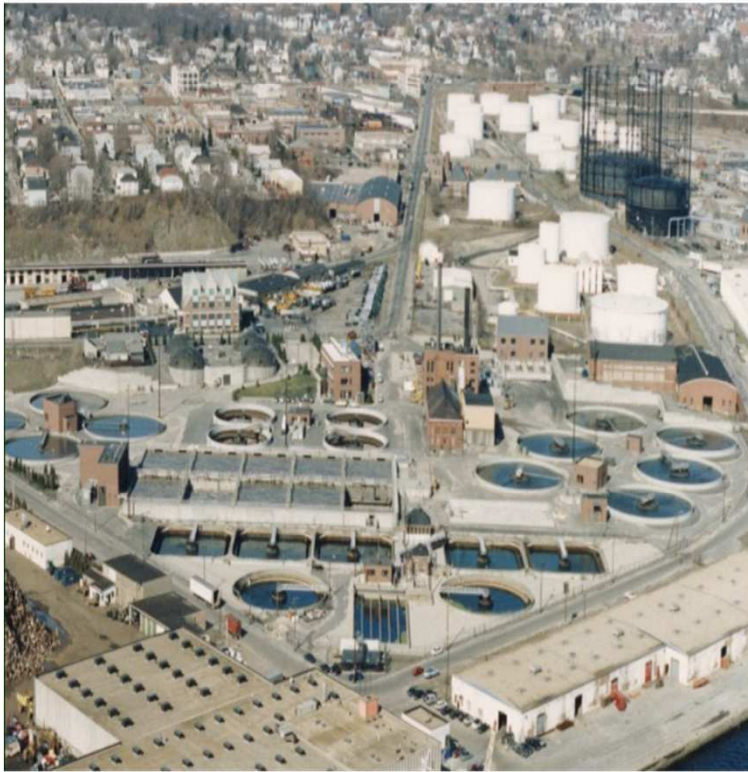
Environmental Best Management Practices for the Management of Waste Dental Amalgam

*Kerry M. Britt
Pretreatment Manager*

May 18, 2011



NBC's Wastewater Treatment Facilities



Field's Point, Providence



Bucklin Point, East Providence



Background

- The Field's Point plant incinerated sludge until 2005
- RI Department of Environmental Management was concerned with the Hg that was being discharged to the atmosphere from the incinerator
- NBC investigated potential sources of Hg
- It was determined that the major source was the dental community
- Developed Best Management Practices to manage waste dental amalgam
- Worked with the RI Dental Association
- Held three informational meetings with dentists on the BMP
- In July 2004 the first permits including the BMP were issued to dental facilities
- Presently have 90 permitted dental facilities with 144 dentists





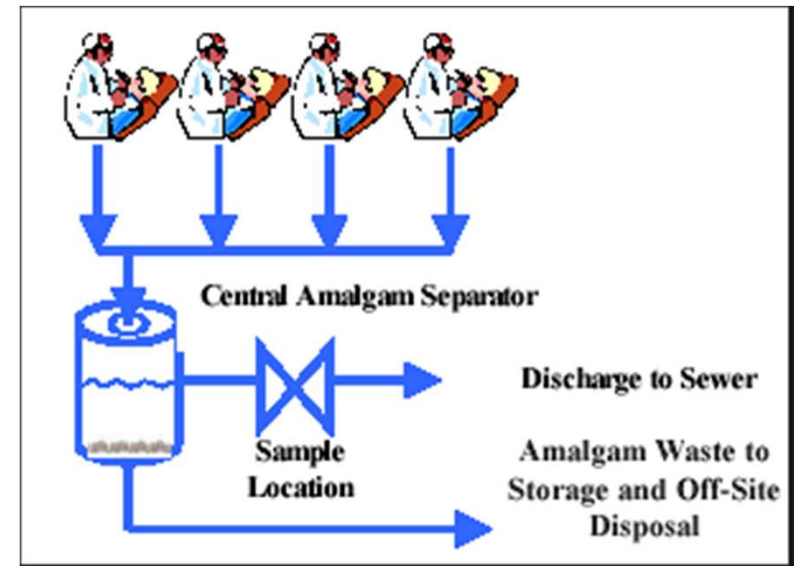
BMP for the Management of Waste Dental Amalgam

- ◆ Two options available to dental facilities
- ◆ Mandatory BMPs
- ◆ Wastewater Discharge Permit Requirements
- ◆ Additional Useful Information
- ◆ Pollution Prevention
- ◆ Hazardous Waste Management



Option 1 – Installation of an Amalgam Separator

- ◆ Amalgam Separator
 - ◆ ISO 11143 Certified
 - ◆ Handle flow from vacuum pumps and cuspidors
 - ◆ 99% removal
- ◆ Record Keeping
- ◆ Maintenance Activities
- ◆ Person Conducting Inspection
- ◆ Sample Port

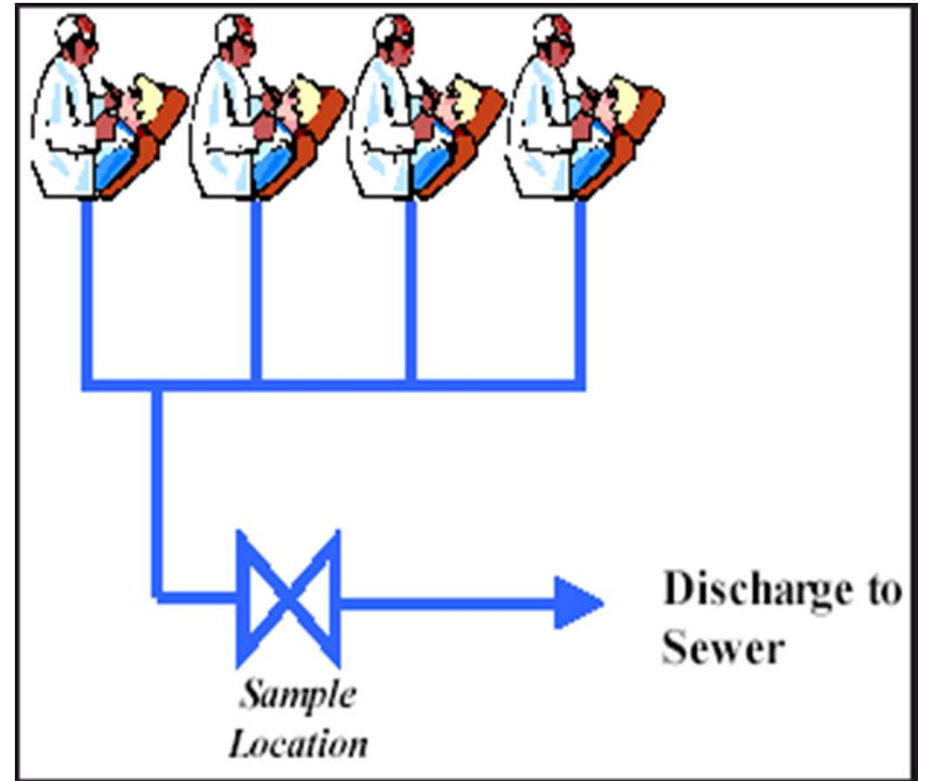


Typical wastewater plumbing diagram for dental office with an amalgam separator



Option 2 – Implementation without Amalgam Separator

- ◆ Installation of sample port(s)
- ◆ Conduct Routine Sampling
- ◆ Compliance with NBC discharge limitation for mercury



Mandatory Best Management Practices

- ◆ Chair Side Traps
- ◆ Vacuum Pumps
- ◆ Storage, Management of Scrap Amalgam
- ◆ Line Cleaners
- ◆ Sinks in Operatories
- ◆ Clean Plumbing & Sink Traps
- ◆ Record Keeping
- ◆ Annual Certification
- ◆ Training
- ◆ Waste Management
- ◆ Spill Response
- ◆ Pollution Prevention

Attachment A
Best Management Practice Certification
For the Year 20 ____

Company Name: _____

Address: _____

RETURN TO:
Narragansett Bay Commission
Pretreatment Program
2 Ernest Street
Providence, RI 02905-5502

I, _____, as authorized representative of
_____, do hereby decree that the Narragansett Bay
Commission Best Management Practices for the Management of Waste Dental Amalgam have
been fully complied with for the past twelve month period.


I certify under penalty of law that this document and all attachments were properly prepared
under my direction or supervision in accordance with a system designed to assure that qualified
personnel properly gather and evaluate the information submitted. Based on my inquiry of the
person or persons who manage the system, or those responsible for gathering the information, the
information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I
am aware that there are significant penalties for submitting false information including the
possibility of fine and imprisonment for known violations.

Authorized Representative Signature Date



Wastewater Discharge Permits

- ◆ Limitations
- ◆ Permitted/Prohibited Discharges
- ◆ Dental BMP based on option facility chooses
- ◆ Sampling
- ◆ Record Keeping
- ◆ Notifications



WASTEWATER DISCHARGE PERMIT

Permit Number: P9400-280-0914
Company Name: **DRS. RUBINSTEIN & DUCOFF, INC.**
Facility Address: 362 Ives Street, Providence, RI 02906
Mailing Address: 362 Ives Street, Providence, RI 02906
Facility President: Dr. Michael L. Rubinstein
Facility Authorized Agent: Dr. Robert J. Ducoff
User Classification: Dental Operations
Categorical Standards Applicable: None

By virtue of Rhode Island's General Laws Title 46 Chapter 25 (Act) and in accordance with the Rules And Regulations For The Use Of Wastewater Facilities Within The Narragansett Bay Water Quality Management District (Rules and Regulations), **Dr. Michael L. Rubinstein and Drs. Rubinstein & Ducoff, Inc.** hereinafter referred to as **Permittee**, is hereby authorized to discharge process wastewater from the above identified facility in accordance with the terms and conditions set forth in this permit.

All discharges authorized herein must be consistent with the effluent limitations, monitoring requirements and other conditions set forth in this permit. The discharge of any pollutant not identified in this permit or any pollutant identified in this permit at a level in excess of that authorized shall constitute a violation of the permit. This permit consists of 14 pages with conditions A - T and Attachment A.

**This permit is effective on October 1, 2009
and expires on September 30, 2014.**

Noncompliance with any term or condition of this permit shall constitute a violation of the NBC's Rules and Regulations and may subject the user to an **Administrative or Civil Penalty** of up to \$25,000 per violation per day as defined in R.I.G.L. §46-25-25.2. Willful or criminally negligent violations shall be punishable by the aforementioned fine and/or imprisonment as defined in R.I.G.L. §46-25-25.3.




Inspection Program

- ◆ Facilities are inspected every 2 years
- ◆ Announced
- ◆ May meet with the dentist or a hygienist
- ◆ Checklist
 - ◆ Requirements/Progress
 - ◆ Separator Installation/Maintenance
 - ◆ X-Ray Processor
 - ◆ Record Keeping

NARRAGANSETT BAY COMMISSION

**Inspection Checklist
For Dental Facilities**



Company Name: _____
Facility Address: _____
Inspection Date: _____ NBC Inspector(s): _____
Person(s) met with: _____

Part I – Facility Information

(1) Company Owner: _____
(2) Contact Person: _____
(3) Phone Number: _____
(4) Hours of Operation: _____
(5) Type of Dental Facility: _____
(6) Make/Model of Amalgam Separator: _____

Part II – Requirements/Progress Since Last Inspection

(1) What was required of the firm since the last inspection? _____

(2) Has required work been completed? Yes No
If no, when will it be completed? _____

(3) Have all required reports (BMP Certification, SMCRs) been submitted on time? Yes No
If no, discuss the ramifications of late submittals and SNC with the user _____

(4) Has the firm been in compliance for the past 12 month period? Yes No
If no, detail the compliance issues and discuss with the user _____





Inspection of a Dental Facility



Amalgam Separator



Maintenance Sticker



Determine the level of solids





Inspection of a Dental Facility

Amalgam Separator



Vacuum Pump

Spill Containment



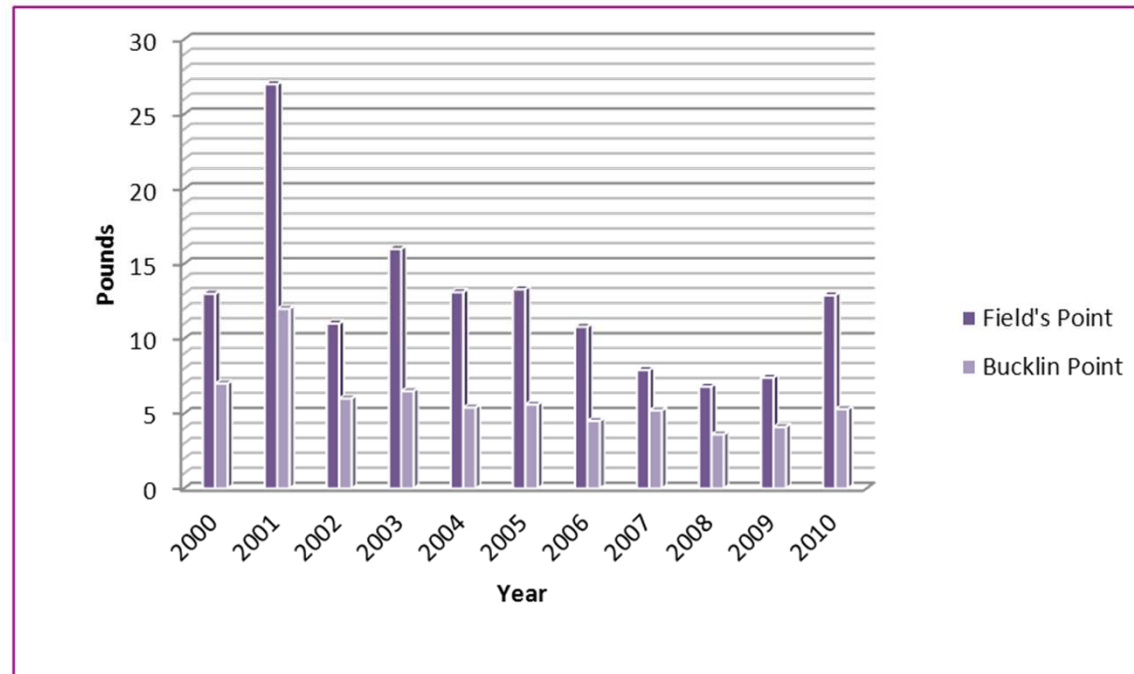
Inspection of a Dental Facility



- ◆ Review logbooks
- ◆ Review shipping documents
- ◆ Discuss questions and concerns the dentist may have with the permit or equipment
 - ◆ Determining the level of solids in the separator
 - ◆ No problem with complying with the BMP
 - ◆ Has no issues with dealing with the NBC



Results of the Dental BMP Program



- ◆ Overall reduction in mercury in the influent since the implementation of the BMP:
 - ◆ FP - 47.3%
 - ◆ BP - 25%
- ◆ The increase in 2010 is due to line cleaning activities





My specialty does not use amalgam, do I need to install a separator?

- If your practice does not handle amalgam in any way, either filling or removal, an amalgam separator is not necessary. These specialties may include but are not limited to:
 - Oral Surgery
 - Orthodontics
- A permit may still be needed if there is x-ray processing on site
- If you need to remove amalgam as a part of your specialty, such as endodontics, a separator is required.





I do only composite fillings, I do not use amalgam, do I need to install an amalgam separator?

- **An amalgam separator must be installed if amalgam is handled in any way. This includes amalgam removal.**
- **There is no minimum amount**
- **If only handled on an infrequent basis, it is recommended the number of chairs used for this purpose be minimized.**





Must all chairs, including those used only for hygiene purposes, be tied into the amalgam separator?

- All chairs where amalgam is used or removed must be tied into the amalgam separator
- Chairs used for mixed use must be tied in
- Chairs used for dental hygiene *only* do not need to be tied in provided the following is met:
 - Clearly indicated on the plans
 - Signs stating “Hygiene Only. Amalgam Work Not Performed” must be posted





Must cuspidors be tied in to the amalgam separator?

- If amalgam is handled in any way at chairs equipped with cuspidors, they must discharge through the separator
- Some dentists have installed funnels tied to the vacuum system at chairs to eliminate the use of cuspidors
- If cuspidors are not replaced, equipment can be purchased that will allow them to discharge to the separator under vacuum





How do I handle the discharge from my sink?

- Sinks where amalgam is handled must be tied in to the separator
- Minimize the number of sinks used for this purpose
- Signs stating “Equipment Washing Only” must be posted at sinks used for washing instruments, equipment and filters
- Signs stating “Sanitary Use Only” must be posted at sinks where equipment washing is prohibited
- Regardless of use the traps for all sinks must be inspected and cleaned if necessary





How do I manage wastewater from instrument cleaning procedures?

- If instruments contaminated with amalgam are placed in an ultrasonic bath without prior cleaning, the bath must be discharged through an amalgam separator
- If instruments are wiped clean and there is no visible amalgam, prior to placement in an ultrasonic bath, the bath may continue to be discharged in the same manner it is presently provided the following is adhered to:
 - No visible amalgam in ultrasonic bath
 - Written procedure approved by the NBC must be in place in the office
 - Staff is trained properly
 - Approved by the NBC
- Procedures will be reviewed on a case-by-case basis





How do we know the process is working?

- **NBC is a part of an International study**
- **Sampling is being conducted of influent at Field's Point (water and grit)**
- **Data for background purposes**
- **Sampling will continue after the BMP program is fully implemented**
- **Data before and after will be compared**
- **Amalgam will be contained in the amalgam separators and not discharged to the sewer**





Contact Information

Email: Kerry.Britt@narrabay.com

Telephone: 401.461.8848 ext. 490

NBC Website: www.narrabay.com

Pretreatment Information:

<http://www.narrabay.com/ProgramsAndProjects/PretreatmentProgram.aspx>

DentalBMP:

<http://www.narrabay.com/ProgramsAndProjects/PretreatmentProgram/Dental%20BMP.aspx>

List of Approved Amalgam Separators and Line Cleaners for Dentists:

http://www.narrabay.com/ProgramsAndProjects/PretreatmentProgram/~/_media/Files/Pretreatment%20Documents/Forms/List%20of%20Amalgam%20Separators%20and%20Line%20Cleaners.ashx





Questions

