Form 1100-001P (Rev. 01/21)

Wisconsin Department of Natural Resources
Natural Resources Board Agenda Item

Item No. 4.B.

SUBJECT:
Request adoption of Board Order WY-14-19, proposed rules creating chapter NR 229 related to regulation of wastewater discharges from dental offices to sanitary sewers

FOR: December 2021 Board meeting

PRESENTER'S NAME AND TITLE: Jason Knutson, Wastewater Section Chief

SUMMARY:
The purpose of the proposed rule is to adopt the 2017 federal dental amalgam rule (40 CFR 441), since as a delegated state under the NPDES program, Wisconsin is required to maintain consistency between state and federal Clean Water Act/NPDES authorities. No substantive changes to the federal rule have been made, although some language (i.e. pronoun use, citations to state codes instead of federal counterpart codes) has changed in order to be consistent with Wisconsin's legislative drafting style.

The proposed rule regulates dental offices that discharge amalgam-containing wastewater into municipal wastewater treatment plants. Although the scope statement for this rule also mentions pursuing clarifying language to permit pretreatment facilities, after further examination, the department elected not to pursue this change at this time.

The rule's pretreatment standards apply to dental offices that place or remove dental amalgam, i.e., metal dental fillings, from patients' teeth and regulate the wastewater discharges from those activities. These standards require subject offices to install, operate and maintain rule-compliant solids separators to treat all amalgam process wastewater and to comply with two best management practices, which will reduce the discharge of amalgam waste to a publicly owned treatment works (POTW). Existing dental offices in Wisconsin subject to the rule must have complied with these requirements by July 14, 2020 and have submitted submit a One-Time Compliance Report to the department or their local municipal pretreatment program if located in one, by October 12, 2020. The report provides certain basic information about the facility along with a certification that it does or does not place or remove amalgam and, if applicable, that the facility will continue to operate and maintain a rule-compliant separator and implement the two best management practices. New dental offices subject to the rule, which began discharging to a POTW after July 14, 2017, must comply with the standards as of that date and submit a One-Time Compliance Report within 90 days of introducing wastewater to a POTW. The rule is expected to have a moderate (level 2) impact on small businesses.

The Board approved the scope statement and conditionally authorized hearings for WY-14-19 at its May 2020 meeting. The department has completed the external review process for Board Order WY-14-19, which includes holding a public hearing and review by the Legislative Council Rules Clearinghouse. Comments received have been considered in the draft final rule. If the final rule language of WY-14-19 is approved, the rule will be submitted to the Governor and, if the Governor approves, to the legislature for review and approval. The 30-month time frame for submission of a final rule to the legislature for approval expires on June 9, 2022.

RECOMMENDATION: That the Board adopt Board Order WY-14-19.

LIST OF ATTACHED MATERIALS (check all that are applicable):

- ☒ Background Memo
- ☒ Fiscal estimate and economic impact analysis (EIA) form
- ☒ Response summary
- ☐ Attachments to background memo
- ☒ Board order/rule
- ☐ (insert document name)

Approved by	Signature	Date
Adrian Stocks, Water Quality Program Director	DocuSigned by: Adrian G. Stocks	11/3/2021 | 10:46 AM CDT
Darsi J. Foss, Environmental Management Division Administrator	DocuSigned by: Darsi J. Foss	11/3/2021 | 5:31 PM CDT
for Preston D. Cole, Secretary	DocuSigned by: Todd Ambs	11/4/2021 | 1:54 PM CDT

cc: Board Liaison - AD/8 DS LJR Program attorney – LS/8 by Todd Ambs Department rule officer – LS/8

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CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: November 5, 2021

TO: All Members of the Natural Resources Board

FROM: Preston D. Cole, Secretary

SUBJECT: Background memo on Board Order WY-14-19, revisions to ch. NR 211 related to regulation of wastewater discharges from dental offices to sanitary sewers

1. **Subject of Proposed Rule:** Revisions to ch. NR 211 related to regulation of wastewater discharges from dental offices to sanitary sewers.

2. **Background:** Dental offices discharge mercury present in amalgam used for metal dental fillings. Amalgam separators are a practical, affordable, and readily available technology for capturing mercury and other metals before they are discharged into sewers that drain to publicly owned treatment works (POTWs). Capture of mercury at the source, such as dental offices, is far more practical and cost effective than removal of mercury at POTWs. Once captured by a separator, mercury can be recycled.

   The U.S. Environmental Protection Agency (EPA) first identified the dental industry for study in its 2006 Effluent Guidelines Plan (71 FR 76644) as part of the health services industry. In 2008, EPA published its results from the detailed study in the technical report, Health Services Industry Detailed Study: Dental Amalgam (U.S. EPA, 2008). For that report, EPA compiled and summarized information on mercury discharges from dental offices, best management practices (BMPs), and amalgam separators. Regarding amalgam separators, EPA examined their frequency of use, their effectiveness in reducing mercury discharges to POTWs, and the capital and annual costs of their installation and operation. The detailed study report also included a preliminary industry profile that provided the number of dental offices, the number of small businesses, discharge information, financial characteristics of the industry, and a description of the national, state, and local mandatory and voluntary programs to reduce mercury wastewater discharges from dental offices. EPA documented its findings in the August 2008 technical report, Health Services Industry Detailed Study: Dental Amalgam (EPA-821-R-08-014).

   EPA Region 8 developed a draft Mercury Control Strategy to help POTWs control mercury pollution problems from commercial and smaller industrial users, including dental offices. This draft Strategy included detailed information on the development of BMPs, amalgam separators, and other removal and filtration devices, as well as other background information regarding dental amalgam control approaches.

   EPA reviewed literature and collected data on various aspects of the dental industry, amalgam separators, and mercury discharges, including:
   - Current, relevant technical publications that describe the sources and generation of mercury wastes at dental offices and the discharge of mercury and other amalgam filling metals (i.e., copper, silver, tin, and zinc) to POTWs.
   - Current information on possible treatment solutions (i.e., amalgam separators) for dental offices to reduce mercury in the wastewater and their effectiveness.
   - Current implementation costs for technologies to reduce mercury and other metal discharges at dental offices.

EPA participated in several meetings with stakeholders including the Environmental Council of the States (ECOS), Association of Clean Water Act Administrators (ACWA), environmental organizations, the American Dental Association (ADA), the National Association of Clean Water Agencies (NACWA), and various environmental organizations.

3. **Why is the rule being proposed?** The Department is required by s. 283.11 (1), Stats., to publish a rule with the same standards as the federal rule. EPA published the proposed federal dental office rule – 40 CFR 441 – in October of 2014 and the final rule on June 14, 2017. Maintaining consistency between federal and state regulations supports Wisconsin's NPDES delegation and ensures that Wisconsin will not need to take further action in response to EPA legal authority reviews (similar to the EPA "75 Issues Letter" in 2011).

   The proposed rule would regulate dental offices that discharge amalgam-containing wastewater into municipal wastewater treatment plants. Although the scope statement for this rule also mentions pursuing clarifying language to permit pretreatment facilities, after further examination, the department elected not to pursue this change at this time.

   The rule's pretreatment standards apply to dental offices that place or remove dental amalgam, i.e., metal dental fillings, from patients' teeth and regulate the wastewater discharges from those activities. These standards require subject offices to install, operate and maintain rule-compliant solids separators to treat all amalgam process wastewater and to comply with two best management practices, which will reduce the discharge of amalgam waste to a publicly owned treatment works (POTW). Existing dental offices in Wisconsin subject to the rule must have complied with these requirements by July 14, 2020 and have submitted submit a One-Time Compliance Report to the department or their local municipal pretreatment program if located in one, by October 12, 2020. The report provides certain basic information about the facility along with a certification that it does or does not place or remove amalgam and, if applicable, that the facility will continue to operate and maintain a rule-compliant separator and implement the two best management practices. New dental offices subject to the rule, which began discharging to a POTW after July 14, 2017, must comply with the standards as of that date and submit a One-Time Compliance Report within 90 days of introducing wastewater to a POTW.

4. **Summary of the rule:** The proposed rule requires dental offices to control the discharge of mercury and other metals in dental amalgam to POTWs based on the best available technology or best available demonstrated control technology. Specifically, the requirements are based on the use of amalgam separators and best management practices recommended by the American Dental Association (ADA). The best management practices (BMPs) are:

   - prohibiting the discharge of waste (or "scrap") amalgam; and
   - prohibiting the use of line cleaners that are oxidizing or acidic and that have a pH higher than 8 or lower than 6.

   Amalgam separators are a practical, affordable, and readily available technology for capturing mercury and other metals before they are discharged into sewers that drain to POTWs. The mercury collected by these separators can be recycled. This rule also includes a provision to significantly reduce and streamline the oversight and reporting requirements in pretreatment regulations that would otherwise apply as a result of this rulemaking. The rule requires dental offices to meet a performance standard that includes BMPs and the use of an amalgam separator(s) compliant with the 2008 International Organization for Standardization (ISO) 11143 standard (ISO, 2008), or the American National Standards Institute (ANSI)/ADA Specification 108 for Amalgam Separators (2009) with Technical Addendum (2011), (ANSI/ADA, 2009; ANSI/ADA, 2011). ISO, a voluntary standard setting organization, established a standard for measuring amalgam separator efficiency by evaluating

the retention of amalgam solids using specified test procedures in a laboratory setting. In order to meet the ISO standard, a separator must achieve 95% removal or greater of total solids. The standard also includes requirements for instructions on the use, operation, and maintenance of amalgam separators (see proposed s. NR 229.03 (a) (1) 4., Wis. Adm. Code).

The rule also includes a provision such that the performance standard can be met with the use of an amalgam removing technology other than an amalgam separator (equivalent device). This provision was included to incorporate future technologies that achieve comparable removals of pollutants from dental discharges as amalgam separators, but that may not fall under the amalgam separator classification.

Because the rule does not include a numerical limit, the performance standards also specify certain operation and maintenance requirements for the amalgam separator(s) or comparable device to ensure they are operated optimally. In addition to installing one or more amalgam separators compliant with the ISO 11143 standard (or its equivalent) and implementing the required BMPs, the pretreatment standards specify certain operating and maintenance requirements for the amalgam separator. These requirements include:

- Documented amalgam separator inspection as specified by the manufacturer's user manual to ensure the separator is performing properly and to confirm that all amalgam process wastewater is flowing through the amalgam retaining portion of the separator.
- Replacement of the amalgam retaining unit of the device in accordance with the manufacturer's schedule or when the amalgam retaining unit has reached the maximum level, whichever comes first; repair/replacement as needed.
- Recycling/disposal of amalgam waste.

Reporting requirements include a One-time Compliance Report.

The rule allows dental offices to continue to operate amalgam separators installed prior to publication of this rule for the equipment lifetime or ten years (whichever comes first), as long as the dental discharger complies with the other rule requirements including the specified BMPs, operation and maintenance, reporting, and recordkeeping requirements.

Once the separator needs to be replaced or the ten-year period has ended, whichever comes first, dental offices will need to replace the amalgam separator with one that meets the requirements of the final rule.

Dental offices that do not place amalgam, and do not remove dental amalgam except in limited emergency or unplanned, unanticipated circumstances are exempt from any further requirements as long as they certify such in their One-time Compliance Report.

Application of typical categorical discharger oversight and reporting requirements to all of the dental offices in the state would require a large amount of additional staff time. Because of this, the rule minimizes the administrative burden on dental offices subject to the rule, as well as the department and local regulatory authorities (Control Authorities) responsible for oversight and enforcement of the new standard.

This is appropriate because dental office discharges differ from other industries for which categorical pretreatment standards have been established. Both the volume of wastewater discharged and the quantity of pollutants in the discharge on a per facility basis are significantly less than other industries for which categorical pretreatment standards have been established.

Accordingly, this rule exempts dental offices from the oversight and reporting requirements of categorical pretreatment standards, reflecting the department's recognition that the otherwise-applicable regulatory framework for categorical dischargers would be unlikely to have a significant positive impact on overall compliance with the rule across the dental industry, while imposing a substantial burden on state and local regulating authorities.

In order to simplify implementation and compliance for the dental offices and the regulating authorities, the rule establishes that dental dischargers are not Significant Industrial Users (SIUs) or Categorical Industrial Users (CIUs) as defined in ch. NR 211, Wis. Adm. Code, and are not "industrial users subject to categorical pretreatment standards" as those terms and variations are used in the administrative code, unless designated as such by the Control Authority.

While this rule establishes pretreatment standards that require dental offices to reduce dental amalgam discharges, the rule does not require Control Authorities to implement the traditional suite of oversight requirements in ch. NR 211, Wis. Adm. Code. This significantly reduces the reporting requirements for dental dischargers that would otherwise apply by instead requiring them to demonstrate compliance with the performance standard and BMPs through a One-Time Compliance Report to their Control Authority. This regulatory approach also eliminates the additional oversight requirements for Control Authorities that are typically associated with SIUs, such as permitting and annual inspections of individual dental offices.

It also eliminates additional reporting requirements for the Control Authorities typically associated with CIUs, such as identification of CIUs in their annual pretreatment reports. At the same time, the rule recognizes the Control Authority's discretionary authority to treat a dental discharger as an SIU and/or CIU if, in the Control Authority's judgement, it is necessary.

5. **How does this proposal affect existing policy?** The department expects that an estimated 40% of dental offices in the state already have compliant dental amalgam separators installed, since use of these devices are recommended by dental associations and, in many cases, have already been required by POTWs implementing mercury pollutant minimization plans. Implementation of this proposed rule fits within the existing pretreatment regulatory framework implemented by the department and 27 authorized POTWs.

6. **Has Board dealt with these issues before?** Yes. The Board approved the scope statement and conditionally authorized hearings for WY-14-19 at its May 2020 meeting.

7. **Who will be impacted by the proposed rule? How?** Entities impacted include facilities where the practice of dentistry is performed, including institutions, permanent or temporary offices, clinics, home offices, and facilities owned and operated by federal, state or local governments, that discharge wastewater to a POTW. Many of these facilities already are compliant with the rule and were only required to submit a one-time compliance report to document their compliance.

8. **Soliciting public input on economic impact synopsis:** The department solicited comments on the economic impact from June 7 through July 7, 2021. The department contacted:

    - Dental offices that discharge amalgam-containing wastewater into municipal wastewater treatment plants.
    - Wisconsin Dental Association (WDA).
    - Wisconsin Wastewater Operators Association (WWOA).
    - Wisconsin Manufacturers & Commerce (WMC).
    - Wisconsin County Association (WCA)
    - League of Municipalities

The department received comments from two individuals. No changes were made to the Economic Impact Analysis (EIA) as a result of comments.

9. **Small Business Analysis:** The department anticipates that the majority of entities (if not all) impacted by this rule are small businesses. As a result, the impact of this rule to small businesses will be the same as the broader impact of the rule to the business sector provided in section #14 of the Fiscal Estimate and Economic Impact Analysis, form DOA-2049 (attached).

   The economic impact on dental entities, local government units, and small businesses per year is estimated at $1.2 M. The analysis considered that 60% of the dental facilities in Wisconsin (estimated 2,061 total) did not have the technology and equipment required, and as a result would have to install the required equipment to meet the federal regulations and proposed rule, which brought the cost to an estimated at $909,847.97 per year. An estimated 40% of the 2,061 dental entities with already installed technology would spend an estimated $314,338.99 per year, which brings the annual total to $1,224,186.96.

Drafter: Richard Douglas

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Comments and DNR Responses
Natural Resources Board Order WY-14-19

October 20, 2021

This document presents a summary of public comments received on proposed rules creating chapter NR 229 related to regulation of wastewater discharges from dental offices to sanitary sewers.

OVERVIEW

The proposed rule requires dental offices to control the discharge of mercury and other metals in dental amalgam to publicly owned treatment works (POTWs) based on the best available technology or best available demonstrated control technology. Specifically, the requirements are based on the use of amalgam separators and best management practices recommended by the American Dental Association (ADA). The best management practices (BMPs) are:

- prohibiting the discharge of waste (or "scrap") amalgam; and
- prohibiting of the use of line cleaners that are oxidizing or acidic and that have a pH higher than 8 or lower than 6.

Amalgam separators are a practical, affordable, and readily available technology for capturing mercury and other metals before they are discharged into sewers that drain to POTWs. The mercury collected by these separators can be recycled. This rule also includes a provision to significantly reduce and streamline the oversight and reporting requirements in pretreatment regulations that would otherwise apply as a result of this rulemaking. The rule requires dental offices to meet a performance standard that includes BMPs and the use of an amalgam separator(s) compliant with the American National Standards Institute (ANSI)/ADA Specification 108 for Amalgam Separators (2009) with Technical Addendum (2011), (ANSI/ADA, 2009; ANSI/ADA, 2011). ISO, a voluntary standard setting organization, established a standard for measuring amalgam separator efficiency by evaluating the retention of amalgam solids using specified test procedures in a laboratory setting [2008 International Organization for Standardization (ISO) 11143 standard (ISO, 2008)] which is identical to the ANSI/ADA standard with the Technical Addendum. In order to meet the ISO standard, a separator must achieve 95 percent removal or greater of total solids. The standard also includes requirements for instructions on the use, operation, and maintenance of amalgam separators (see proposed s. NR 229.03 (a) (1) 4., Wis. Adm. Code).

ECONOMIC IMPACT ANALYSIS

A public comment period on the draft EIA occurred from June 7 to July 7, 2021.

The department received comments from two individuals and no organizations on the EIA during this period. One comment indicated that they felt mercury amalgam separators were relatively inexpensive, but that due to COVID-19 and overall financial hardships, a tax benefit for the cost of the separators would be helpful. The other comment stated that amalgam separators were already in common use by dental offices and new regulations were not necessary.

LEGISLATIVE COUNCIL RULES CLEARINGHOUSE

The Legislative Council Rules Clearinghouse submitted comments on form, style and placement; and clarity, grammar, punctuation and use of plain language. Changes to the proposed rule were made to address all recommendations by the Legislative Council Rules Clearinghouse.

PUBLIC COMMENTS ON DRAFT RULE
A public comment period for the draft rule occurred from August 9 to September 14, 2021, with a public hearing on September 7, 2021. No members of the public attended the hearing.

The department received one written comment from a POTW in support of the proposed rule and one comment from a private citizen stating that they felt discharges from dental offices did not contribute an amount of pollutants that required regulation.

DNR RESPONSE TO PUBLIC COMMENTS
After years of study and discussion with stakeholders, the U.S. Environmental Protection Agency (EPA) brought dental office discharges within the purview of the Clean Water Act by establishing pretreatment standards for dental offices. The department is required under state statute and administrative code to promulgate pretreatment standards for point sources after they are established by EPA. s. 283.11 (1), Wis. Stats.; s. NR 211.34 (2), Wis. Adm. Code.

The department did not make any changes to the draft rule or EIA based on public comments.

STATE OF WISCONSIN
DEPARTMENT OF ADMINISTRATION
DOA-2049 (R09/2016)

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ADMINISTRATIVE RULES
Fiscal Estimate & Economic Impact Analysis

1. Type of Estimate and Analysis
☒ Original ☐ Updated ☐ Corrected

2. Date
5/27/21

3. Administrative Rule Chapter, Title and Number (and Clearinghouse Number if applicable)
Chapter NR 229 – Dental Office
CR 21-063

4. Subject
Regulation of wastewater discharges from dental offices to sanitary sewers (Board Order WY-14-19)

5. Fund Sources Affected
☐ GPR ☐ FED ☐ PRO ☐ PRS ☐ SEG ☐ SEG-S

6. Chapter 20, Stats. Appropriations Affected
There is minimal to no economic impact to s. 20.370(4)

7. Fiscal Effect of Implementing the Rule
☒ No Fiscal Effect ☐ Increase Existing Revenues ☐ Increase Costs ☐ Decrease Costs
☐ Indeterminate ☐ Decrease Existing Revenues ☐ Could Absorb Within Agency's Budget

8. The Rule Will Impact the Following (Check All That Apply)
☐ State's Economy
☐ Local Government Units
☐ Specific Businesses/Sectors
☐ Public Utility Rate Payers
☒ Small Businesses **(if checked, complete Attachment**

9. Estimate of Implementation and Compliance to Businesses, Local Governmental Units and Individuals, per s. 227.137(3)(b)(1).
$1,224,186.96 per year

10. Would Implementation and Compliance Costs Businesses, Local Governmental Units and Individuals Be $10 Million or more Over Any 2-year Period, per s. 227.137(3)(b)(2)?
☐ Yes ☒ No

11. Policy Problem Addressed by the Rule
The proposed rule would regulate dental offices that discharge amalgam-containing wastewater into municipal wastewater treatment plants. Although the scope statement for this rule also mentions pursuing clarifying language to permit pretreatment facilities, after further examination, the department elected not to pursue this change at this time.

The rule's pretreatment standards apply to dental offices that place or remove dental amalgam, i.e., metal dental fillings, from patients' teeth and regulate the wastewater discharges from those activities. These standards require subject offices to install, operate and maintain rule-compliant solids separators to treat all amalgam process wastewater and to comply with two best management practices, which will reduce the discharge of amalgam waste to a publicly owned treatment works (POTW). Existing dental offices in Wisconsin subject to the rule must have complied with these requirements by July 14, 2020 and have submitted submit a One-Time Compliance Report to the department or their local municipal pretreatment program if located in one, by October 12, 2020. The report provides certain basic information about the facility along with a certification that it does or does not place or remove amalgam and, if applicable, that the facility will continue to operate and maintain a rule-compliant separator and implement the two best management practices. New dental offices subject to the rule, which began discharging to a POTW after July 14, 2017, must comply with the standards as of that date and submit a One-Time Compliance Report within 90 days of introducing wastewater to a POTW.

12. Summary of the Businesses, Business Sectors, Associations Representing Business, Local Governmental Units, and Individuals that may be Affected by the Proposed Rule that were Contacted for Comments.
Entities impacted include facilities where the practice of dentistry is performed, including institutions, permanent or temporary offices, clinics, home offices, and facilities owned and operated by federal, state or local governments, that discharge wastewater to a POTW. Below is a list of contacted businesses, associations, and/or individuals affected by the rule:

- Dental offices that discharge amalgam-containing wastewater into municipal wastewater treatment plants.
- Wisconsin Dental Association (WDA).
- Wisconsin Wastewater Operators Association (WWOA).
- Wisconsin Manufacturers & Commerce (WMC).

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13. Identify the Local Governmental Units that Participated in the Development of this EIA.

The department solicited comments from local governmental units on this FE/EIA during the comment period. The following entities were contacted for information:

- Wisconsin County Association (WCA)
- League of Municipalities

No governmental units submitted comments.

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14. Summary of Rule's Economic and Fiscal Impact on Specific Businesses, Business Sectors, Public Utility Rate Payers, Local Governmental Units and the State's Economy as a Whole (Include Implementation and Compliance Costs Expected to be Incurred)

See attached spreadsheet document "*Draft of Separator Compliance Cost*" for cost, as well as a summary explanation on how the Separator Compliance Cost was determined, which is listed below.

By simply adopting the already-effective federal regulations, the economic impact on dental entities, local government units and small businesses, per year is estimated at $1.2 M. The analysis considered that 60% of the dental facilities in Wisconsin (estimated 2,061 total facilities statewide) did not have the technology and equipment required, and as a result would have to install the required equipment to meet the federal regulations and proposed rule requirements, which brought the cost to an estimated $909,847.97 per year. 40% of the 2,061 dental facilities with already installed technology would spend an estimated $314,338.99 per year, which brings the annual total cost to $1,224,186.96.

Summary of Compliance Cost Assessment:
The economic impact on dental entities, local government units and small businesses, is estimated to be **$1,224,186.96 per year**.

A detailed assessment of the annualized cost and cost over 10 years is provided below.

Economic Impact on Private Business:
The analysis considered that 60% of the dental facilities in Wisconsin (estimated 2,061 total facilities) did not have the technology and equipment required, and as a result would have to install the required equipment to meet the federal regulations and requirements of the proposed rule.
Based on the result from a model developed by the U.S. Environmental Protection Agency (EPA), the average number of chairs in a typical dental office nationwide is between 1 and 5. This analysis assumed that the typical dental office in Wisconsin has 5 chairs. This analysis also assumed a 10-year life span for the technology and a social discount rate of 7%.

- **<u>Entities with No Technology Installed</u>**
  EPA estimates the cost of equipment purchase and installation for a typical dental facility with a 5-chair capacity to be $1,072.46. This estimate also includes the cost for completion of the One-Time Compliance Report. Annual recurring cost after initial installation for entities without the technology already installed will be $642.83 per year.

The present value of total cost for purchase, installing, and maintenance of an amalgam separator is estimated to be $5,903.48 per entity over a 10-year period.

In annualized terms, each establishment required to install a new rule-compliant technology will incur costs of approximately $735.77 per year. The total annualized compliance cost for all entities that will be required to install the technology is approximately **$909,847.97** per year.

- **Entities with Technology Installed**
  This analysis assumes that these entities (40% of 2,061entities) will not have to purchase new equipment to comply with federal regulations and the proposed rule revision. Therefore, there is zero cost of purchase and installation.

  The EPA estimates that the annual recurring cost for entities with the technology already installed will be $403.79. Annual recurring cost includes: Replacement parts, separator maintenance, recycling costs, inspection costs, all record-keeping costs, and any cost savings related to the technology change.

  The present value of the annual recurring cost of maintaining an amalgam separator for a dental establishment with the technology already installed is estimated to be $3,059.35 per entity over a 10-year period.

  In annualized terms, each entity will incur costs of approximately $381 per year. The total annualized compliance cost for all entities with the technology already installed is approximately **$314,338.99** per year.

- **Annualized value of Compliance Cost Per Year for the Next 10 years (per year basis):**
  Entities required to install new technology ($909,847.97) + entities with the technology already installed ($314,338.99) = **$1,224,186.96 per year**

- **Total Compliance Cost Over a 10-Year Period**
  Entities required to install new technology ($7,300,239.34) + entities with the technology already installed ($2,522,124.54) = **$9,822,363.88**

References:

- "An Economic Study of Expanded Duties of Dental Auxiliaries in Colorado" (ADA, 2009). This study is called the "ADA Colorado Study" below. Based on a survey of 154 dental offices in Colorado, it provides a distribution of number of chairs by office.
- "2009 Survey of Dental Practice: Income from the Private Practice of Dentistry" (ADA, 2010). This study, called the "ADA National Study" below, indirectly reports a distribution of number of chairs by office.
- EPA-821-R-16-005 -Technical and Economic Development Document for the Final Effluent Limitations Guidelines and Standards for the Dental Category. (US-EPA, 2016)
- U.S. Census Bureau. 2017. 2017 Economic Census: Office of Dentists (NAICS 621210). EC1700BASIC.

See attached document "Draft of Separator Compliance Cost" for detailed Excel Spreadsheet on compliance cost.

Local Government, Municipalities & Utility Rate Payers:
The department does not anticipate that utility rate payers will be impacted by this rule.

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ADMINISTRATIVE RULES
Fiscal Estimate & Economic Impact Analysis

State Economy:
The department does not anticipate that the state's economy will be adversely impacted by this rule.

Fiscal Impacts:
The department anticipates that the estimated one-time impact administrative costs ($30,915) will be absorbed within the current work schedule of department employees.

Besides the impacts described above, the department does not anticipate a negative fiscal impact to the agency/state as a result of this rule. Any additional staff time can be absorbed within the current work schedule of agency employees.

15. Benefits of Implementing the Rule and Alternative(s) to Implementing the Rule
Implementing this rule will help in reducing mercury in the waters of the state, and its effect on the environment, which will directly help in protecting the health of people and aquatic organisms. Facilities where the practice of dentistry is performed, at a state and local level, will be able to understand how they can assist their local POTWs in pollution mitigation, and encourage practices that reduce amalgam.

By not implementing the rule, state and local outreach that occurs as a result of the rule implementation would be non-existent and would lessen the impact of the federal regulation that currently exists. Also, s. NR 211.34 (2), Wis. Adm. Code, requires the department to adopt these standards and requirements into the Wisconsin Administrative Code as soon as possible after promulgation of the related federal regulation.

Additionally, if this rule is not implemented, the department would be violating s. 283.11 (1), Wis. Stats., which states that the department shall promulgate by rule any pretreatment standards established by federal rule. If the rule is not implemented, dental offices would still be subject to the federal dental amalgam requirements under 40 CFR Part 441. However, dental offices would not be able to utilize a streamlined compliance process through the department if the department does not adopt a corresponding rule, and dental offices would be at greater risk of violating federal pretreatment regulations. Finally, refusal to adopt and implement these or any other federal regulations under the Clean Water Act could jeopardize EPA's delegation of National Pollutant Discharge Elimination System permitting and pretreatment authority to the state of Wisconsin.

16. Long Range Implications of Implementing the Rule
Implementing this rule will mitigate the financial burden of POTWs by reducing the amount of resources and monies set aside for mercury source reduction and/or pollution mitigation plans, thereby allowing these funds to assist in other areas of the POTWs that help to protect the waters of the state, its environment, and the communities that the POTWs serve.

17. Compare With Approaches Being Used by Federal Government
The implementation of the rule is in alignment with federal regulations and does not exceed the regulations established.

18. Compare With Approaches Being Used by Neighboring States (Illinois, Iowa, Michigan and Minnesota)
As of this date, Illinois, Iowa, Michigan and Minnesota do not have state regulations that regulate discharges from dental offices. All of these states are currently relying on the federal regulations.

19. Contact Name	20. Contact Phone Number
Adebowale C. Adesanwo	715-492-4047

This document can be made available in alternate formats to individuals with disabilities upon request.

STATE OF WISCONSIN
DEPARTMENT OF ADMINISTRATION
DOA-2049 (R09/2016)

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ADMINISTRATIVE RULES
Fiscal Estimate & Economic Impact Analysis

ATTACHMENT A

1. Summary of Rule's Economic and Fiscal Impact on Small Businesses (Separately for each Small Business Sector, Include Implementation and Compliance Costs Expected to be Incurred)

The department anticipates that the majority of entities (if not all) impacted by this rule are small businesses. As a result, the impact of this rule to small businesses will be the same as the broader impact of the rule to the business sector provided in section #14 of the 2049 form (attached).

The economic impact on dental entities, local government units, and small businesses per year is estimated at $1.2 M. The analysis considered that 60% of the dental facilities in Wisconsin (estimated 2,061 total) did not have the technology and equipment required, and as a result would have to install the required equipment to meet the federal regulations and proposed rule, which brought the cost to an estimated at $909,847.97 per year. An estimated 40% of the 2,061 dental entities with already installed technology would spend an estimated $314,338.99 per year, which brings the annual total to $1,224,186.96.

2. Summary of the data sources used to measure the Rule's impact on Small Businesses

American Dental Association:

- "An Economic Study of Expanded Duties of Dental Auxiliaries in Colorado" (ADA, 2009).
- "2009 Survey of Dental Practice: Income from the Private Practice of Dentistry" (ADA, 2010).
- United States EPA:
- EPA-821-R-16-005 -Technical and Economic Development Document for the Final Effluent Limitations Guidelines and Standards for the Dental Category. (US-EPA, 2016)

U.S. Census Bureau. 2017:

- 2017 Economic Census: Office of Dentists (NAICS 621210). EC1700BASIC.

3. Did the agency consider the following methods to reduce the impact of the Rule on Small Businesses?

☐ Less Stringent Compliance or Reporting Requirements
☐ Less Stringent Schedules or Deadlines for Compliance or Reporting
☐ Consolidation or Simplification of Reporting Requirements
☐ Establishment of performance standards in lieu of Design or Operational Standards
☐ Exemption of Small Businesses from some or all requirements
☒ Other, describe:

The department is obligated under s. 283.11 (1), Wis. Stats., to promulgate state pretreatment standards established by EPA, which this rule does for Wisconsin dental offices. Section 283.11 (2), Wis. Stats., requires that this, and all department rules, comply with and not exceed the requirements of the associated federal regulation.

4. Describe the methods incorporated into the Rule that will reduce its impact on Small Businesses

This rule's impact on small businesses will be the same as that of the federal rule. The adoption of the federal rule by the state does not add an additional financial impact. The state rule mirrors and does not exceed the requirements of the federal rule.

5. Describe the Rule's Enforcement Provisions

Enforcement provisions are not included in the subsections of the rule affected by the proposed order. Department

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101 EAST WILSON STREET, 10TH FLOOR
P.O. BOX 7864
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ADMINISTRATIVE RULES
Fiscal Estimate & Economic Impact Analysis

enforcement of violations of this, and all pretreatment standards promulgated by the department by rule, is authorized by s. 283.89, Wis. Stats.

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6. Did the Agency prepare a Cost Benefit Analysis (if Yes, attach to form)
☐ Yes ☒ No

		Per Entity Cost In 2020 Dollar	Years	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Sum (10 Years of Cost)
Discount Rate	**0.07**			0	1	2	3	4	5	6	7	8	9	
Number of Dental Entities in Wisconsin	**2061**													
Intial Installation cost for Entities without the Technology (60% of 2061 Entities)														
Total Initial Cost plus Installtion Cost (Onetime Reporting Cost Included)		$1,072.46		$1,072.46										$1,072.46
Present Value of Annual Recurring Cost after Year 1		$642.83		$642.83	$600.78	$561.47	$524.74	$490.41	$458.33	$428.34	$400.32	$374.13	$349.66	$4,831.02
Present Value of a Stream of Annual Recurring Cost for 10yrs														
Present Value of Total Cost				$1,715.29	$600.78	$561.47	$524.74	$490.41	$458.33	$428.34	$400.32	$374.13	$349.66	$5,903.48
Annualized Present Value of Cost Per Entity		$735.77												
Present Value of Total Cost for Entities (Total of 10 Years)				**$2,121,127.61**	**$742,919.23**	**$694,317.04**	**$648,894.43**	**$606,443.39**	**$566,769.52**	**$529,691.14**	**$495,038.45**	**$462,652.76**	**$432,385.76**	**$7,300,239.34**
Annualized Valued of Total Cost (Per Year over 10yrs)														**$909,847.97**
Intial Installation Cost for Entities with the Technology alredy Installed (40% of 2061 Entities)														
Total Initial Cost (Onetime Reporting Cost Included)		$24.77		$ 24.77										$24.77
Present Value of Annual Recurring Cost after Year 1		$403.79		$403.79	$377.37	$352.69	$329.61	$308.05	$287.90	$269.06	$251.46	$235.01	$219.64	$3,034.58
Present Value of a Stream of Annual Recurring Cost for 10yrs														
Present Value of Total Cost				$428.56	$377.37	$352.69	$329.61	$308.05	$287.90	$269.06	$251.46	$235.01	$219.64	$3,059.35
Annualized Present Value of Cost Per Entity		$381.29												
Present Value of Total Cost for Entities (Total of 10 Years)				**$353,304.86**	**$311,106.99**	**$290,754.19**	**$271,732.89**	**$253,955.97**	**$237,342.03**	**$221,814.98**	**$207,303.72**	**$193,741.80**	**$181,067.10**	**$2,522,124.54**
Annualized Valued of Total Cost (Per Year over 10yrs)														**$314,338.99**
GRAND TOTALS: All Entities - 2061														
Present Value of Total Cost for Entities (Total of 10 Years)				**$2,474,432.48**	**$1,054,026.22**	**$985,071.23**	**$920,627.32**	**$860,399.36**	**$804,111.56**	**$751,506.13**	**$702,342.17**	**$656,394.56**	**$613,452.86**	**$9,822,363.88**
Annualized Valued of Total Cost (Per Year over 10yrs)														**$1,224,186.96**

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September 29, 2021

The statement of scope for this rule, SS 121-19, was approved by the Governor on December 5, 2019, published in Register No. 768A2 on December 9, 2019, and approved by the Natural Resources Board on May 27, 2020. This rule was approved by the Governor on insert date.

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
CREATING RULES

The Wisconsin Natural Resources Board adopts an order to **create** NR 220.02 (13m) and 229 relating to regulation of wastewater discharges from dental offices to sanitary sewers and affecting small business.

WY-14-19

Analysis Prepared by the Department of Natural Resources

1. Statute Interpreted: Sections 283.001 (2), 283.13 (2), and 283.21, Wis. Stats.

2. Statutory Authority: The department is required to promulgate by rule effluent limitations, standards of performance for new sources, toxic effluent standards or prohibitions and pretreatment standards for any category or class of point sources established by the U.S. environmental protection agency and for which that agency has promulgated any effluent limitations, toxic effluent standards or prohibitions or pretreatment standards for any pollutant under s. 283.11 (1), Wis. Stats.

3. Explanation of Agency Authority: Section 283.001 (2), Wis. Stats., allows the department to establish, administer and maintain a state pollutant discharge elimination system in order to regulate the discharge of pollutants within the state.

> Section 283.001 (2) states in part, "The purpose of this chapter is to grant to the department of natural resources all authority necessary to establish, administer and maintain a state pollutant discharge elimination system."

Section 283.13 (2), Wis. Stats., requires that point sources of pollutants other than publicly owned treatment works (POTWs) and storm water dischargers are required to implement application of the best practical control technology to reduce the discharge of pollutants from point sources, specifically those categorized as toxic.

> Section 283.13 (2) reads in part: "The discharge from any point source, other than a publicly owned treatment works or a source of storm water permitted under s. 283.33, shall comply with the following requirements:
> **(a)** *Best practicable technology.* The application of the best practicable control technology currently available.
> **(b)** *Requirements for certain pollutants.* For pollutants identified under pars. (c), (d) and (f):
> **1.**
> **a.** The application of the best available technology economically achievable for a point source or a category or class of point sources which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants as stated in the federal water pollution control act, as amended, 33 USC 1251 to 1376; or
> **b.** The application of the best available technology which will result in the elimination of the discharge of all pollutants if the department finds on the basis of information available to it that the elimination is technologically and economically achievable for a category or class of point sources.

2. The application of any applicable pretreatment requirements or any other requirements under s. 283.21 to any point source discharging pollutants into a publicly owned treatment works.

(c) *Certain toxic pollutants; compliance by July 1, 1984.* Compliance with the effluent limitations under par. (b) with respect to all toxic pollutants referred to in table 1 of committee print number 95-30 of the committee on public works and transportation of the U.S. house of representatives by no later than July 1, 1984.

(d) *Other toxic pollutants; compliance within 3 years after limitations are established.* Compliance with effluent limitations under par. (b) with respect to all toxic pollutants included on the list promulgated under s. 283.21 (1) (a) but which are not included in the table referred to under par. (c) not later than 3 years after the date the effluent limitations are established."

Section 283.21, Wis. Stats., establishes effluent standards for pretreatment of wastewater and the discharge of toxic pollutants. This section requires the department to establish a list of toxic pollutants, promulgate effluent standards for those pollutants, and establish pretreatment standards for pollutants introduced into publicly owned treatment works that would ordinarily not be treated or would have a negative effect on the facility.

Section 283.21 (1) reads in part:

(b) *Effluent standards.* The department may promulgate by rule an effluent standard, which may include a prohibition, establishing requirements for a toxic pollutant which, if an effluent limitation is applicable to a class or category of point sources, is applicable to that category or class of point sources only if this effluent standard imposes more stringent requirements than are imposed under s. 283.13 (2) (b). An effluent standard promulgated under this section shall take into account the toxicity of the pollutant, its persistence, degradability, the usual or potential presence of affected organisms in any waters, the importance of affected organisms, the nature and extent of the effect of the toxic pollutant on these organisms and the extent to which effective control is being or may be achieved under other regulatory authority."

Section 283.21 (2) (a) reads: "The department shall by rule promulgate pretreatment standards to regulate the introduction into publicly owned treatment works of pollutants which are not susceptible to treatment by such treatment works or which would interfere with the operation of such treatment works."

4. Related Statutes or Rules: Chapters NR 211, 215, 661, and 662, Wis. Adm. Code.

Chapter NR 211, Wis. Adm. Code, establishes requirements for POTWs and point source dischargers of pollutants to POTWs to prevent the discharge of pollutants that would interfere with the operation of the treatment works, pass through treatment works insufficiently treated, or impair the use or disposal of the sludge generated by treatment works.

Chapter NR 215, Wis. Adm. Code, is the list of toxic, conventional, and nonconventional pollutants required under s. 283.21, Wis. Stats. Mercury, which is a significant component of dental amalgam, is included on that list under s. NR 215.03 (6) (j), Wis Adm. Code.

Chapter NR 220, Wis. Adm. Code, establishes a list of industrial categories for which effluent limitation guidelines and/or pretreatment standards apply and provides for the incorporation of effluent limitations into discharge permits.

Chapters NR 221-297, Wis. Adm. Code, contain effluent limitation guidelines for industrial categories of dischargers, just as this proposed rule will for dental offices. Effluent limitation guidelines are typically

promulgated by the U.S. Environmental Protection Agency (EPA) and adopted into this range of administrative code chapters, just as is the case with this proposed rule.

Chapter NR 661, Wis. Adm. Code, in part identifies solid wastes subject to regulation as hazardous wastes under ch. NR 662, Wis. Adm. Code. Mercury is specifically listed in ch. NR 661 Appendix VIII, HAZARDOUS CONSTITUENTS.

Chapter NR 662, Wis. Adm. Code, establishes requirements for storage, transport, disposal, and recordkeeping related to hazardous wastes. Mercury collected in an amalgam separator is classified as a solid hazardous waste under ch. NR 661, Wis. Adm. Code.

5. Plain Language Analysis: The proposed rule requires dental offices to control the discharge of mercury and other metals in dental amalgam to POTWs based on the best available technology or best available demonstrated control technology. Specifically, the requirements are based on the use of amalgam separators and best management practices recommended by the American Dental Association (ADA). The best management practices (BMPs) are:

- prohibiting the discharge of waste (or "scrap") amalgam; and
- prohibiting of the use of line cleaners that are oxidizing or acidic and that have a pH higher than 8 or lower than 6.

Amalgam separators are a practical, affordable, and readily available technology for capturing mercury and other metals before they are discharged into sewers that drain to POTWs. The mercury collected by these separators can be recycled. This rule also includes a provision to significantly reduce and streamline the oversight and reporting requirements in pretreatment regulations that would otherwise apply as a result of this rulemaking. The rule requires dental offices to meet a performance standard that includes BMPs and the use of an amalgam separator(s) compliant with the 2008 International Organization for Standardization (ISO) 11143 standard (ISO, 2008), or the American National Standards Institute (ANSI)/ADA Specification 108 for Amalgam Separators (2009) with Technical Addendum (2011), (ANSI/ADA, 2009; ANSI/ADA, 2011). ISO, a voluntary standard setting organization, established a standard for measuring amalgam separator efficiency by evaluating the retention of amalgam solids using specified test procedures in a laboratory setting. In order to meet the ISO standard, a separator must achieve 95 percent removal or greater of total solids. The standard also includes requirements for instructions on the use, operation, and maintenance of amalgam separators (see proposed s. NR 229.03 (a) (1) 4., Wis. Adm. Code).

The rule also includes a provision such that the performance standard can be met with the use of an amalgam removing technology other than an amalgam separator (equivalent device). This provision was included to incorporate future technologies that achieve comparable removals of pollutants from dental discharges as amalgam separators, but that may not fall under the amalgam separator classification.

Because the rule does not include a numerical limit, the performance standards also specify certain operation and maintenance requirements for the amalgam separator(s) or comparable device to ensure they are operated optimally. In addition to installing one or more amalgam separators compliant with the ISO 11143 standard (or its equivalent) and implementing the required BMPs, the pretreatment standards specify certain operating and maintenance requirements for the amalgam separator. These requirements include:

- documented amalgam separator inspection as specified by the manufacturer's user manual to ensure the separator is performing properly and to confirm that all amalgam process wastewater is flowing through the amalgam retaining portion of the separator;

- replacement of the amalgam retaining unit of the device in accordance with the manufacturer's schedule or when the amalgam retaining unit has reached the maximum level, whichever comes first; repair/replacement as needed; and
- recycling/disposal of amalgam waste.

Reporting requirements include a One-time Compliance Report.

The rule allows dental offices to continue to operate amalgam separators installed prior to publication of this rule for the equipment lifetime or ten years (whichever comes first), as long as the dental discharger complies with the other rule requirements including the specified BMPs, operation and maintenance, reporting, and recordkeeping requirements.

Once the separator needs to be replaced or the ten-year period has ended, whichever comes first, dental offices will need to replace the amalgam separator with one that meets the requirements of the final rule.

Dental offices that do not place amalgam, and do not remove dental amalgam except in limited emergency or unplanned, unanticipated circumstances are exempt from any further requirements as long as they certify such in their One-time Compliance Report.

Application of typical categorical discharger oversight and reporting requirements to all of the dental offices in the state would require a large amount of additional staff time. Because of this, the rule minimizes the administrative burden on dental offices subject to the rule, as well as the department and local regulatory authorities (Control Authorities) responsible for oversight and enforcement of the new standard. This is appropriate because dental office discharges differ from other industries for which categorical pretreatment standards have been established. Both the volume of wastewater discharged and the quantity of pollutants in the discharge on a per facility basis are significantly less than other industries for which categorical pretreatment standards have been established.

Accordingly, this rule exempts dental offices from the oversight and reporting requirements of categorical pretreatment standards, reflecting the department's recognition that the otherwise-applicable regulatory framework for categorical dischargers would be unlikely to have a significant positive impact on overall compliance with the rule across the dental industry, while imposing a substantial burden on state and local regulating authorities.

In order to simplify implementation and compliance for the dental offices and the regulating authorities, the rule establishes that dental dischargers are not Significant Industrial Users (SIUs) or Categorical Industrial Users (CIUs) as defined in ch. NR 211, Wis. Adm. Code, and are not "industrial users subject to categorical pretreatment standards" as those terms and variations are used in the administrative code, unless designated as such by the Control Authority.

While this rule establishes pretreatment standards that require dental offices to reduce dental amalgam discharges, the rule does not require Control Authorities to implement the traditional suite of oversight requirements in ch. NR 211, Wis. Adm. Code. This significantly reduces the reporting requirements for dental dischargers that would otherwise apply by instead requiring them to demonstrate compliance with the performance standard and BMPs through a One-Time Compliance Report to their Control Authority. This regulatory approach also eliminates the additional oversight requirements for Control Authorities that are typically associated with SIUs, such as permitting and annual inspections of individual dental offices.

It also eliminates additional reporting requirements for the Control Authorities typically associated with CIUs, such as identification of CIUs in their annual pretreatment reports. At the same time, the rule

recognizes the Control Authority's discretionary authority to treat a dental discharger as an SIU and/or CIU if, in the Control Authority's judgement, it is necessary.

6. Summary of, and Comparison with, Existing or Proposed Federal Statutes and Regulations: This rule is a direct adoption of 40 CFR Part 441, with only small, non-substantive changes in some terms to comply with Wisconsin legislative drafting style these changes do not change the requirements of the rule.

7. Summary of Comments Received on the Statement of Scope and How the Agency Took Those Comments into Account in Drafting the Proposed Rule: The department received one written comment from Milwaukee Metropolitan Sewerage District in support of the statement of scope. The department received one comment from a private citizen that stated they felt a rule was not necessary. There were no attendees at the public hearing for the statement of scope.

8. Comparison with Similar Rules in Adjacent States: Adjacent states have not enacted similar rules and are instead applying 40 CFR 441. Pretreatment programs in Illinois are directly administered by Region 5 of the EPA, so 40 CFR 441 is being used directly. Under s. NR 211.34 (2), Wis. Adm. Code, the department is required to adopt pretreatment standards or requirements as soon as possible after the promulgation of any federal regulation establishing pretreatment standards or requirements. The same rule promulgation requirement is also found in s. 283.11 (1), Wis. Stats. (see item 2., above).

9. Summary of Factual Data and Analytical Methodologies Used and How Any Related Findings Support the Regulatory Approach Chosen: Dental offices discharge mercury present in amalgam used for fillings. Amalgam separators are a practical, affordable, and readily available technology for capturing mercury and other metals before they are discharged into sewers that drain to POTWs. Once captured by a separator, mercury can be recycled.

EPA first identified the dental industry for study in its 2006 Effluent Guidelines Plan (71 FR 76644) as part of the health services industry. In 2008, EPA published its results from the detailed study in the technical report, Health Services Industry Detailed Study: Dental Amalgam (U.S. EPA, 2008). For that report, EPA compiled and summarized information on mercury discharges from dental offices, BMPs, and amalgam separators. Regarding amalgam separators, EPA examined their frequency of use, their effectiveness in reducing mercury discharges to POTWs, and the capital and annual costs of their installation and operation. The detailed study report also included a preliminary industry profile that provided the number of dental offices, the number of small businesses, discharge information, financial characteristics of the industry, and a description of the national, state, and local mandatory and voluntary programs to reduce mercury wastewater discharges from dental offices. EPA documented its findings in the August 2008 technical report, Health Services Industry Detailed Study: Dental Amalgam (EPA-821-R-08-014).

EPA Region 8 developed a draft Mercury Control Strategy to help POTWs control mercury pollution problems from commercial and smaller industrial users, including dental offices. This draft Strategy included detailed information on the development of BMPs, amalgam separators, and other removal and filtration devices, as well as other background information regarding dental amalgam control approaches

EPA reviewed literature and collected data on various aspects of the dental industry, amalgam separators, and mercury discharges, including:

- Current, relevant technical publications that describe the sources and generation of mercury wastes at dental offices and the discharge of mercury and other amalgam filling metals (i.e., copper, silver, tin, and zinc) to POTWs.

- Current information on possible treatment solutions (i.e., amalgam separators) for dental offices to reduce mercury in the wastewater and their effectiveness.
- Current implementation costs for technologies to reduce mercury and other metal discharges at dental offices.

EPA participated in several meetings with stakeholders including the Environmental Council of the States (ECOS), Association of Clean Water Act Administrators (ACWA), environmental organizations, the American Dental Association (ADA), the National Association of Clean Water Agencies (NACWA), and various environmental organizations.

It is important to note that many dental offices in Wisconsin have already installed the technology necessary to come into compliance with the proposed rule, as use of dental amalgam separators is required by many municipal wastewater treatment plants (POTWs) that administer mercury pollutant minimization plans.

10. Analysis and Supporting Documents Used to Determine the Effect on Small Business or in Preparation of an Economic Impact Report:
American Dental Association:

- "An Economic Study of Expanded Duties of Dental Auxiliaries in Colorado" (ADA, 2009).
- "2009 Survey of Dental Practice: Income from the Private Practice of Dentistry" (ADA, 2010).

EPA:

- EPA-821-R-16-005 -Technical and Economic Development Document for the Final Effluent Limitations Guidelines and Standards for the Dental Category (US-EPA, 2016).

11. Effect on Small Business (initial regulatory flexibility analysis): DNR anticipates that the majority of entities (if not all) impacted by this rule are small businesses. As a result, the impact of this rule to small businesses will be the same as the broader impact of the rule to the business sector provided in section #14 of the Fiscal Estimate and Economic Impact Analysis, form DOA-2049 (attached).

The economic impact on dental entities, local government units, and small businesses, per year, is estimated at $1.2 M. The analysis considered that 60% of the dental facilities in Wisconsin (an estimated 2,061 facilities) did not have the technology and equipment required, and as a result would have to install the required equipment to meet the federal regulations, which brought the cost to an estimated $909,847.97. An estimated 40% of the 2,061 dental entities with already installed technology would spend an estimated $314,338.99, which brings the annual total to $1,224,186.96.

12. Agency Contact Person: Richard Douglas; Department of Natural Resources, 101 S. Webster Street, Madison, WI 53707; Richard.Douglas@wisconsin.gov; (608) 267-6822

13. Place where comments are to be submitted and deadline for submission:
A public hearing was held on September 7, 2021. Comments were accepted through September 14, 2021.

The consent of the Attorney General will be requested for the incorporation by reference of the American National Standards Institute/American Dental Association Specification for Amalgam Separators, published in 2009 (ANSI/ADA 108-2009) and its 2011 technical addendum.

RULE TEXT

SECTION 1. NR 220.02 (13m) is created to read:

NR 220.02 (13m) Dental offices

SECTION 2. NR 229 is created to read:

CHAPTER NR 229

DENTAL OFFICES

NR 229.01 Applicability. (1) Except as provided under subs. (3), (4), and (5), this chapter applies to dental dischargers.

(2) Unless otherwise designated by the control authority, a dental discharger subject to this chapter is not a significant industrial user as defined under ch. NR 211, and is not a categorical industrial user or industrial user subject to categorical pretreatment standards as those terms and variations are used under ch. NR 211, as a result of applicability of this rule.

(3) This chapter does not apply to a dental discharger that exclusively practices one or more of the following dental specialties:

(a) Oral pathology.

(b) Oral and maxillofacial radiology.

(c) Oral and maxillofacial surgery.

(d) Orthodontics.

(e) Periodontics.

(f) Prosthodontics.

(4) This chapter does not apply to wastewater discharges from a mobile unit operated by a dental discharger.

(5) This chapter does not apply to a dental discharger that does not discharge any amalgam process wastewater to a POTW, such as a dental discharger that collects all amalgam process wastewater for transfer to a centralized waste treater as defined under s. NR 211.03 (2e).

(6) A dental discharger that does not place dental amalgam and does not remove dental amalgam except in limited emergency or unplanned, unanticipated circumstances, and that certifies such to the control authority in a one-time compliance report as required under s. NR 229.05 is exempt from any further requirements of this chapter.

NR 229.02 Definitions. In this chapter:

(1) "Amalgam" or "dental amalgam" means an alloy of elemental mercury and other metal that is used in the practice of dentistry.

(2) "Amalgam process wastewater" means any wastewater generated and discharged by a dental discharger through the practice of dentistry that may contain dental amalgam.

(3) "Amalgam separator" means a collection device designed to capture and remove dental amalgam from the amalgam process wastewater of a dental facility.

(4) "Authorized representative" means the person authorized to sign documents as prescribed under s. NR 211.15 (10).

(5) "Control authority" has the meaning provided under s. NR 211.03 (4).

(6) "Dental discharger" means a facility where the practice of dentistry is performed and that discharges wastewater to a POTW, including institutions, permanent or temporary offices, clinics, home offices, and facilities owned and operated by federal, state, or local governments, and the sole proprietorship, partnership, or corporation that oversees the operation of such a facility.

(7) "Existing source" means a dental discharger that is not a new source.

(8) "Mobile unit" means a specialized mobile self-contained van, trailer, or equipment used in providing dentistry services at multiple locations.

(9) "New source" means a dental discharger whose first discharge to a POTW occurs after July 14, 2017.

(10) "POTW" has the meaning provided under s. NR 211.03 (11).

Note: POTW is the abbreviation for publicly owned treatment works.

NR 229.03 Pretreatment standards for existing sources. No later than July 14, 2020, any existing source subject to this chapter shall achieve all of the following:

(1) Removal of dental amalgam solids from all amalgam process wastewater by one of the following methods:

(a) Installation, operation, and maintenance of one or more amalgam separators that meet all of the following requirements:

1. The amalgam separator is compliant with ANSI/ADA 108-2009 with the 2011 technical addendum, incorporated by reference. Compliance shall be assessed by an accredited testing laboratory under ANSI's accreditation program for product certification or a testing laboratory that is a signatory to the International Laboratory Accreditation Cooperation's Mutual Recognition Arrangement. The testing laboratory's scope of accreditation shall include ANSI/ADA 108-2009 or ISO 11143.

Note: ANSI/ADA 108-2009 is the American National Standards Institute/American Dental Association Specification for Amalgam Separators, published in 2009. Copies of ANSI/ADA 108-2009 and the 2011 technical addendum are available at http://www.ada.org. Copies are also available for inspection at the offices of the department of natural resources and the legislative reference bureau. Note that ANSI/ADA 108-2009, along with the 2011 addendum, is identical to ISO 11143:2008, which is available at http://webstore.ansi.org.

2. The amalgam separator is sized to accommodate the maximum discharge rate of amalgam process wastewater.

3. A dental discharger that operates an amalgam separator that was installed at a dental facility prior to June 14, 2017, satisfies the requirements of subds. 1. and 2. until the existing separator is replaced as described under subd. 5., or until June 14, 2027, whichever is sooner.

4. The amalgam separator is inspected in accordance with the manufacturer's operating manual to ensure proper operation and maintenance of the separator and to confirm that all amalgam process wastewater is flowing through the amalgam retaining portion of the amalgam separator.

5. In the event that an amalgam separator is not functioning properly, the amalgam separator is repaired consistent with manufacturer instructions or replaced with a unit that meets the requirements under subds. 1. and 2. as soon as possible, but no later than 10 business days after the malfunction is discovered by the dental discharger, or an agent or representative of the dental discharger.

6. The amalgam retaining unit is replaced in accordance with the manufacturer's schedule as specified in the manufacturer's operating manual or when the amalgam retaining unit has reached the maximum level, as specified by the manufacturer in the operating manual, at which time the amalgam separator can perform to the specified efficiency, whichever comes first.

(b) Installation, operation, and maintenance of one or more amalgam removal devices other than an amalgam separator. The amalgam removal device shall meet all of the following requirements:

1. The removal efficiency shall be at least 95 percent of the mass of solids from all amalgam process wastewater. The removal efficiency shall be calculated in grams recorded to 3 decimal places, on a dry weight basis. The removal efficiency shall be demonstrated at the maximum water flow rate through the device as established by the device manufacturer's instructions for use.

2. The removal efficiency shall be determined using the average performance of 3 samples. The removal efficiency shall be demonstrated using a test sample of dental amalgam that meets all of the following particle size distribution specifications:

a. 60 percent by mass of particles that pass through a 3,150 µm sieve but that do not pass through a 500 µm sieve.

b. 10 percent by mass of particles that pass through a 500 µm sieve but that do not pass through a 100 µm sieve.

c. 30 percent by mass of particles that pass through a 100 µm sieve.

2m. Each of the 3 particle size distributions specified under subd. 2. shall contain a representative distribution of particle sizes.

3. The device shall be sized to accommodate the maximum discharge rate of amalgam process wastewater.

4. The device shall be accompanied by the manufacturer's manual providing instructions for use including the frequency for inspection and collecting container replacement such that the unit is replaced once it has reached the maximum filling level at which the device can perform to the specified efficiency.

5. The device shall be inspected in accordance with the manufacturer's operation manual to ensure proper operation and maintenance, including confirmation that amalgam process wastewater is flowing through the amalgam separating portion of the device.

6. In the event that a device is not functioning properly, it shall be repaired consistent with manufacturer instructions or replaced with a unit that meets the requirements under subds. 1. to 3. as soon as possible, but no later than 10 business days after the malfunction is discovered by the dental discharger, or an agent or representative of the dental discharger.

7. The amalgam retaining unit of the device shall be replaced as specified in the manufacturer's operating manual, or when the collecting container has reached the maximum filling level, as specified by the manufacturer in the operating manual, at which time the amalgam separator can perform to the specified efficiency, whichever comes first.

8. The demonstration of the device under subds. 1. to 3. shall be documented in the one-time compliance report required under s. NR 229.05.

(2) Implementation of all of the following best management practices:

(a) Waste amalgam including dental amalgam from chair-side traps, screens, vacuum pump filters, dental tools, cuspidors, or collection devices, may not be discharged to a POTW.

(b) Dental unit water lines, chair-side traps, and vacuum lines that discharge amalgam process wastewater to a POTW may not be cleaned with oxidizing or acidic cleaners, including bleach, chlorine, iodine, or peroxide that have a pH lower than 6 or greater than 8.

NR 229.04 Pretreatment standards for new sources. As of July 14, 2017, a new source subject to this chapter shall comply with the requirements under s. NR 229.03 and the reporting and recordkeeping requirements under s. NR 229.05.

NR 229.05 Reporting and recordkeeping requirements.

(1) REPORTING REQUIREMENTS**.** A dental discharger subject to this chapter shall comply with all of the following reporting requirements in lieu of the otherwise applicable requirements under s. NR 211.15 (1), (3), (4), and (7):

(a) *One-time compliance report deadlines.* For an existing source, a one-time compliance report shall be submitted to the control authority no later than October 12, 2020, or 90 days after a transfer of ownership. For a new source, a one-time compliance report shall be submitted to the control authority no later than 90 days following the introduction of wastewater into a POTW.

(b) *Signature and certification.* The one-time compliance report shall be signed and certified by a responsible corporate officer, a general partner, or proprietor of the dental discharger if the dental discharger is structured as a partnership or sole proprietorship, or an authorized representative in accordance with the requirements under s. NR 211.15 (10) if structured as a corporation.

(c) *Contents.* 1. The one-time compliance report for a dental discharger that does not place or remove dental amalgam as described under s. NR 229.01 (6) shall include all of the following:

a. The facility name, physical address, mailing address, and contact information for the dental discharger.

b. The name of the operator and owner of the dental discharger.

c. A certification statement that the dental discharger does not place dental amalgam and does not remove amalgam except in limited circumstances.

2. The one-time compliance report for a dental discharger that is not exempted from the requirements of this chapter under s. NR 229.01 (6) shall include all of the following:

a. The facility name, physical address, mailing address, and contact information for the dental discharger.

b. The name of the operator and owner of the dental discharger.

c. A description of the operation at the dental facility, including the total number of chairs, the total number of chairs at which dental amalgam may be present in the resulting wastewater, and a description of any existing amalgam separator or equivalent device currently operated to include, at a minimum, the make, model, and year of installation.

d. Certification that the amalgam separator or equivalent device is designed and will be operated and maintained to meet the requirements specified under s. NR 229.03.

e. Certification that the dental discharger is implementing best management practices specified under s. NR 229.03 (2) and will continue to do so.

f. The name of the third-party service provider that maintains the amalgam separator or equivalent device operated at the dental office, if applicable. Otherwise, a brief description of the practices employed by the dental discharger to ensure proper operation and maintenance as specified under s. NR 229.03.

(d) *Transfer of ownership notification.* If a dental discharger transfers ownership of the facility, the new owner shall submit a new one-time compliance report to the control authority no later than 90 days after the transfer.

(e) *Retention period.* As long as a dental discharger subject to this chapter is in operation, or until ownership is transferred, the dental discharger or an agent or representative of the dental discharger shall retain the one-time compliance report required under sub. (1) and make it available for inspection in either physical or electronic form.

(2) RECORDKEEPING REQUIREMENTS**.** A dental discharger or an agent or representative of the dental discharger shall maintain and make available for inspection in either physical or electronic form, for a minimum of 3 years, all of the following:

(a) Documentation of the date, person conducting the inspection, and results of each inspection of the amalgam separator or equivalent device, and a summary of follow-up actions, if needed.

(b) Documentation of amalgam retaining container or equivalent container replacement, including the date, as applicable.

(c) Documentation of all dates that collected dental amalgam is picked up or shipped for proper disposal in accordance with s. NR 662.014 (1) (e) and (f), and the name of the permitted or licensed treatment, storage, or disposal facility receiving the amalgam retaining containers.

(d) Documentation of any repair or replacement of an amalgam separator or equivalent device, including the date, person making the repair or replacement, and a description of the repair or replacement, including make and model.

(e) The manufacturer's operating manual for the current device.

SECTION 3. EFFECTIVE DATE. This rule takes effect on the first day of the month following publication in the Wisconsin Administrative Register as provided in s. 227.22 (2) (intro.), Stats.

SECTION 4. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on [DATE].

Dated at Madison, Wisconsin _____.

September 29, 2021

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

BY _____

For Preston D. Cole, Secretary

(SEAL)

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