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Association of Clean Water Administrators; Association of State Drinking Water Administrators;
Association of State and Territorial Solid Waste Management Officials;
Environmental Council of the States;
National Association of Clean Air Agencies; National Pollution Prevention Roundtable

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February 20, 2015

The Honorable Gina McCarthy
Administrator
U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Via email to: OW-Docket@epa.gov

*RE: Effluent Limitations Guidelines and Standards for the Dental Category; Proposed Rule: Docket ID No. EPA-HQ-OW-2014-0693*

Dear Administrator McCarthy:

The Quicksilver Caucus (QSC) is pleased to submit the following comments on United States Environmental Protection Agency's (U.S. EPA) proposed rule, Effluent Limitations Guidelines and Standards for the Dental Category 40 CFR Parts 403 and 441, published in the Federal Register Vol. 79, No. 204, on October 22, 2014 (79 FR 63258).

The QSC was formed in May 2001 by a coalition of State environmental association leaders to collaboratively develop holistic approaches for reducing mercury in the environment. Caucus association members include the Environmental Council of the States (ECOS), the Association of Clean Water Administrators (ACWA), the National Association of Clean Air Agencies (NACAA), the Association of State and Territorial Solid Waste Management Officials (ASTSWMO), the Association of State Drinking Water Administrators (ASDWA) and the National Pollution Prevention Roundtable (NPPR). Representing the state environmental agency directors, ECOS is the flagship association member of the Quicksilver Caucus and provides staff to facilitate the group's activities. ECOS, ACWA and NACAA developed, and support, the attached comments.

The QSC appreciates U.S. EPA's publishing this draft rule for public comment. We also appreciate that U.S. EPA was responsive to the QSC's previous suggestions that the proposed rule rely on a best management practice (BMP) approach, including use of amalgam separators, as an alternative to a numeric discharge limit and regular discharge testing requirements at each clinic location; that reporting and oversight requirements be streamlined; and that dental offices with existing amalgam separators be 'grandfathered' so as not to penalize early adopters of these pollution controls.

Overall, the key elements of this proposal comport with many existing state and local programs to address mercury pollution attributable to the dental sector. However, many states and local authorities do not currently have programs addressing mercury pollution from the dental sector. Staff time and resources will be needed to develop, implement and manage new programs in order to comply with the proposed rule. Based on the experiences of states with existing programs, the QSC makes a number of recommendations below that we believe will maximize efficiencies, minimize regulatory burdens, and reduce costs to the states, Publically Owned Treatment Works (POTWs) and the regulated community. If implemented with the suggested revisions, clarifications and assistance noted below, the rule will result in a significant decrease in mercury discharges to wastewater from the dental sector.

The following comments and suggestions are intended to either clarify or improve upon certain aspects of the proposed rule, and also highlight areas where U.S. EPA assistance to states and control authorities is critical for moving forward with this proposal. Topic areas are noted in bold with brief summaries of the issue.

**The QSC Supports the Streamlining Proposed in the Rule to Reduce Implementation Burdens On the Regulated Community, States and POTWs.** The QSC supports U.S. EPA's proposed revisions to selected parts of the existing pretreatment regulations to streamline and simplify oversight and reporting requirements. The relief offered by designating a dentist as a dental industrial user (DIU) instead of a traditional categorical industrial user is necessary to establish a rule that is not overly burdensome. The current proposal requires that POTWs and states modify their rules and regulations to apply the DIU designation (see Preamble XXI.R., page 63282, where the proposal explains that the DIU classification must be adopted by the state and/or Control Authority in order to be effective). In order to provide relief in the most efficient manner, QSC recommends that the final rule create and implement the DIU classification for all states and control authorities, with an option for states and control authorities to be more restrictive if they choose.

**Implementation Assistance to States and POTWs Is Needed to Maximize Efficiencies, Enhance Consistency and Further Minimize Costs to the States and POTWs.** In order for state and local authorities to effectively meet the requirements of the proposed rule, U.S. EPA leadership is needed in the three key areas discussed below. This critical assistance will ensure national consistency, avoid duplicative efforts, maximize efficiencies and reduce costs to state and local authorities tasked with implementation and administration of the rule. Specifically, U.S. EPA should take the lead in: 1) developing an off-the-shelf electronic reporting system for use by the controlling authorities; 2) convening an Amalgam Separator Review Committee to assist both the regulated community and control authorities in assessing amalgam separator compliance; and, 3) assisting with outreach to the regulated community. Without support in the areas described below, the review and management of the required reports and certifications from, and outreach to, the large number of regulated entities will require state and local authorities to devote considerable staff time and resources.

- **Standardized Electronic Reporting System** – Dental offices subject to the proposed rule will be required to submit a baseline report, 90 day compliance report and periodic monitoring reports documenting and certifying their compliance with the rule's

requirements. States that have implemented similar programs have found that electronic reporting systems help to effectively manage reporting and certifications from the large number of facilities involved. As it will be highly inefficient for each control authority to develop their own electronic reporting system de novo, the QSC strongly urges U.S. EPA to take the lead in developing an off-the-shelf electronic reporting system that the control authorities can use. U.S. EPA should evaluate and take advantage of reporting systems that have already been developed and are in use by states and POTWs with existing programs. States and other control authorities should be provided the option of continuing to use their existing systems. As there are over 100,000 dental facilities in the U.S., creating such a system is needed to ease the implementation burden and costs to the regulated community, states and local governments.

- **Amalgam Separator Testing and Certification and National Review Committee** – The QSC recommends that U.S. EPA require use of amalgam separators that are appropriately tested and certified to meet the U.S. amalgam separator standard adopted by American National Standards Institute (ANSI) and the American Dental Association (ADA) "ANSI/ADA Specification No. 108:2009/ISO 11143:2008 and ANSI/ADA Specification No. 108:2009, Addendum." Amalgam separator testing and certification should be required using testing laboratories and certification bodies that are appropriately accredited to conduct the relevant testing and issue certificates, respectively. Accreditation of testing laboratories and certification bodies is a necessary component of the internationally recognized "Conformity Assessment Process" (CAP) designed to ensure that equipment will operate in the manner claimed by the manufacturers and established in test reports. Use of the CAP for this rule, in conjunction with the National Separator Review Committee described below, will improve national consistency in separator effectiveness and will increase efficiencies for state and local authorities.

  The December 2, 2014 comment letter submitted to the docket by the American National Standards Institute provides an excellent overview of the standard setting process and makes the case for using ANSI/ADA Specification No. 108 as the standard for separators installed pursuant to U.S. EPA's final rule. While the letter addresses accreditation and certification at length, it does not address testing of products against the standard and the need for testing laboratories to be properly accredited as part of the CAP. QSC also recommends that accredited testing laboratories must have ISO 11143 within their scope of accreditation in order to be fully qualified to test dental amalgam separators.

  The Environmental Council of the States (ECOS) has previously urged U.S. EPA establish a National Amalgam Separator Review Committee for the purpose of evaluating and sharing amalgam separator testing, certification and operational information (see Resolution 11-3 at http://www.ecos.org/section/policy/resolution). This review committee would serve as the centralized point-of-contact for amalgam separator manufacturers to submit test reports and certifications for review and would provide amalgam separator specifications and test results in a format that is easily accessible for regulators and dentists. The QSC continues to believe that such a Committee is needed as it would significantly enhance efficiencies by easing or eliminating the burden of determining amalgam separator compliance by the regulated community (dental

facilities) and state and local governments (agencies and POTWs) implementing the effluent guideline for dental facilities. The National Review Committee would be responsible for ensuring that amalgam separators are tested and certified in accordance with the CAP and actually meet the current ANSI/ADA Specification. The CAP is voluntary, so there must be a requirement in the rule to follow the steps in the CAP, and those steps should be identified in the rule. See Appendix A for the specific Conformity Assessment Process steps that QSC believes should be followed to ensure that dental amalgam separators meet or exceed the requirements of the current American National Standard and the amalgam particulate recovery rate specified by U.S. EPA in the proposed rule.

- **Outreach** – U.S. EPA should provide financial and other assistance to the control authorities on outreach efforts and coordinate with the American Dental Association and state dental organizations to ensure that the regulated community is aware of the need to comply with the rule, pending deadlines, and the reasons for the rule. U.S. EPA should take advantage of existing outreach materials and efforts developed by states and POTWs with existing programs. Outreach is critical to achieving timely compliance.

**A Mechanism Must Be Provided for Dental Sector Regulations In Non-Delegated States to be Used to Comply With The Proposed Rule.** Some non-delegated states (e.g. Massachusetts, New Hampshire) have implemented effective state-wide rules addressing mercury amalgam discharges from the dental sector. These rules stipulate the use of amalgam separators and other best management practices (BMPs), among other requirements. It is unclear whether a mechanism exists that would allow these state-wide programs to serve as an implementation vehicle for U.S. EPA's proposed rule. If not, implementation responsibility would fall to the regional U.S. EPA Office and POTWs with approved pretreatment plans, potentially necessitating these control authorities to develop duplicative programs. A straight-forward approach to address this issue would be to consider dental offices in all States with programs that are equivalent to or more stringent than the requirements in the Dental ELG adopted by U.S. EPA to be in compliance. The states should be provided a reasonable timeframe to revise their state-wide requirements, if necessary, to conform to the national requirements.

**The Following Clarifications and Additions to the Required BMPs Are Needed.**

- Line cleaners (40 CFR 441.40(b)(2) and 40 CFR 441.50(b)(2)) - Dental facilities should be required to use only biodegradable disinfectants and cleaning agents that are non-corrosive (pH range between 6.5 - 9.0) and non-oxidizing (e.g., no bleach or peroxide) in the facility's vacuum lines and all other drains connected to its amalgam separator. It is important to include this requirement as oxidizing cleaners will solubilize mercury captured in the amalgam separators, thereby increasing mercury discharge into the wastewater.
- Management of amalgam waste – 40 CFR 403.3 defines best management practices, which includes development of requirements for sludge or waste disposal. QSC recommends that U.S. EPA add the following BMPs to 44.40(b) and 44.50(b).
    - Transfer all amalgam waste to a permitted hazardous waste recycling facility, licensed hazardous waste facility, a facility that consolidates shipments of amalgam waste before being shipped off-site for reclamation, or, if shipped out of state, a facility that is authorized to reclaim mercury from amalgam waste;

- Retain documentation, such as a certificate of recycling, a hazardous waste manifest, bill of lading or contractual agreement, showing that the amalgam waste has been recycled by being reclaimed and the name and address of the facility at which the amalgam waste is ultimately recycled.

**Addressing Legacy Mercury in P Traps Should Be Encouraged.** Mercury from rinsing chair side traps and patients rinsing after treatment settles in P traps of sink drains. Large amounts of mercury can accumulate in these traps. Mercury discharge from dental offices will continue to be an issue unless this source of mercury is eliminated. QSC recommends that the proposed rule and all guidance pertaining to the rule encourage removal of this mercury at the same time an amalgam separator is installed in dental offices.

**An Amalgam Flushing Prohibition for Dentists Otherwise Exempt From the Rule Should be Added.** The proposed rule does not apply the amalgam flushing prohibition in 441.40(b)(1) to dentists otherwise exempt from the rule [441.10(b) and (c)]. QSC recommends that the amalgam flushing prohibition apply to all dentists, coupled with a requirement for recycling or other proper management methods to prevent environmental releases.

**The Frequency of Visual Inspections of Amalgam Separators Should be Revised.** The proposed rule requires that amalgam separators be visually inspected by the facility operator once per month. This may be a sufficient minimum frequency if an amalgam separator includes a bypass sensor and warning device. Otherwise, more frequent inspection, weekly or biweekly, should be required. In all cases, the recommended inspection frequency by the manufacturer should be identified and used if the frequency is greater than that noted in the rule. In all cases it should be required that any malfunctions, including bypass conditions, be rectified as quickly as possible.

**Mercury Air Emissions Attributable to Amalgam Are Likely Underestimated by U.S. EPA and Should be Revised.** Based on state data, it is likely that the Technical and Economic Development Document (TEDD) significantly underestimates air emissions of mercury attributable to dental amalgam discharged into wastewater. Detailed information regarding this issue is presented in Appendix B. Air emissions attributable to dental amalgam will contribute to local, regional and global levels of mercury, and lead to depositional inputs to local and distant water bodies.

**Clarification on How Mobile Dental Units Are Regulated is Needed. (Proposed Rule – 40 CFR 441.10(a)** – "….practice of dentistry is performed ("dental dischargers"), including but not limited to institutions, permanent or temporary offices, clinics, mobile units…"). Mobile units are used by contractors at multiple locations (for example, prisons, nursing homes, etc.). Each location can ha**v**e a different Control Authority. Clarification is needed as to how mobile units are to be regulated.

**The Exemption for Emergency Procedures Should be Clarified. (Proposed Rule – 40 CFR 441.10(c)) –** The exemption for emergency dental amalgam placement or removal is potentially open to a range of interpretations. A definition is needed regarding the scope of what constitutes "limited emergency circumstances." The final rule must provide a definition that is practical and meaningful to the regulated community and is also enforceable.

**The Amalgam Separator Cartridge Change-out Schedule Should be Revised. (Proposed Rule – 40 CFR 441.40(c)(6) and (d)(6), and 441.50(c)(6))** – The referenced rules require an amalgam separator to be "regularly maintained by replacing the amalgam retaining cartridge(s), separator canister(s), or separator unit(s) whenever the collection of retained solids reaches the manufacturer's stated design capacity or annually, whichever occurs first." Requiring annual replacement is not necessary unless the capacity is reached.

**Dentist License Tracking Should not be Required.** (**Proposed Rule – 40 CFR 441.60(a)(1)(i), (a)(2)(i) and (a)(3)(1))** – A Baseline Report and annual Periodic Monitoring Report are required to be submitted to include " the facility name, address, and contact information as well as the dental license number of all practicing dentists at the location." Based on state experience it is recommended that the focus be on the dental facility or location rather than on the dentist. Dentists can frequently change dental practices and/or have multiple locations. Keeping track of the movement of specific dentists, and to require updates be submitted if this information changes, can be difficult and is not necessary.

Sincerely,

Robert J. Martineau
President
Environmental Council of the States

Martha Clark Mettler
President
Association of Clean Water Administrators

Vince Hellwig
Quicksilver Caucus Representative
National Association of Clean Air Agencies

## Appendix A. Conformity Assessment Process Steps for Dental Amalgam Separators

The Conformity Assessment Process for the dental amalgam separator technology standard requires that proper steps be taken by separator manufacturers, accreditation bodies, testing laboratories, and certification bodies. For this rule, U.S. EPA and other stakeholders want dental amalgam separators to meet or exceed the requirements of the American National Standard, meet the 99.0% amalgam particulate recovery rate specified by U.S. EPA in the proposed rule, and be properly tested and certified. Based on state experience with this process, and to meet these criteria, QSC recommends that dental amalgam separators must:

1. Be tested by a testing laboratory that is accredited by an accreditation body that is a signatory to the International Laboratory Accreditation Cooperation's Mutual Recognition Arrangement (see: www.ilac.org). The testing laboratory's scope of accreditation must include ISO 11143.
2. Pass the current ANSI/ADA Specification No. 108 for evaluating amalgam separators.
3. Achieve a minimum 99.0% mercury particulate removal efficiency according to the efficiency definition in the current version of ANSI/ADA Specification No. 108.
4. Be certified by a certification body that is accredited by an accreditation body that is a signatory to the International Accreditation Forum's Multilateral Recognition Arrangement (see: www.iaf.nu).
5. Display a certification test mark from the certification body.
6. Display the overall removal efficiency percentage as required and determined in Criterion 3, above, for the corresponding maximum tested flow rate employed during the test.

**Appendix B. Information Indicating That U.S. EPA Significantly Underestimated Mercury Air Emissions Attributable to Wastewater Discharges from the Dental Sector**

- Air emissions from sewage sludge incinerators (SSI) are likely to be significantly underestimated. The TEDD estimates national emissions of mercury attributable to dental amalgam from SSI at 35 pounds per year. This likely to be a significant underestimate.
    - The Michigan Dept. of Environmental Quality-Air Quality Division (MDEQ-AQD) estimated in 2002 the state-wide mercury emissions from SSI was 285 lbs/year.
    - Based on SSI stack tests, emissions of mercury attributable to dental amalgam from Massachusetts (MA) SSI units were estimated to be approximately 86 pounds in 2002 (prior to the implementation of MA's dental sector regulations requiring amalgam separators and other BMPs).
    - Emissions from all SSI nationally would be much greater than these estimates for MI and MA alone. In fact, U.S. EPA document 660/R-02/104 "Use and Release of Mercury in the United States", estimated that SSI's emitted almost 2,000 pounds (0.94 tons) of mercury to the air in 2002.
- Utilizing the U.S. EPA Mercury Flow Diagram, MDEQ-AQD made mercury emission estimates from dental amalgam use and disposal. The emissions were grouped into three categories including: emissions from the dental office, emissions from the consumer "in use," and emissions from dental amalgam in the solid waste stream. Mercury emissions from all of these additional categories for 2002 were estimated at 145 lbs/year.
- Mercury volatilization losses occurring during wastewater and sludge processing and handling were not estimated. Based on a mass balance estimate of mercury wastewater inputs vs. outputs in biosolids and discharged treated wastewater, air losses of mercury from MA's largest POTW were estimated to be about 12 pounds in 2001 (prior to the implementation of MA dental sector regulations requiring amalgam separators and other BMPs). Based on this estimate, national releases of mercury to the air from POTWs attributable to dental wastewater inputs would total several hundred pounds per year (at low rates of amalgam separator use).
- Although sufficient data does not exist to quantify mercury emissions following biosolids reuse, basic chemical principals, as well as experimental data, indicate that mercury will volatilize (and leach) from amalgam particulates in treated biosolids if subjected to common environmental conditions (e.g. acid precipitation; temperature fluctuations; exposure to sunlight, etc.) over extended periods. Installed amalgam fillings have been shown to emit mercury vapors for extended periods of time and several studies have reported emissions of mercury vapors from biosolids. Sunlight and heat can reduce ionic mercury to elemental mercury with subsequent volatilization from surface soils (Carpi and Lindberg 1997, 1998; Carpi et al. 1997). Methylmercury has also been shown to be present in biosolids-amended soils (Cappon 1981, 1984) and emitted to the atmosphere (Carpi et al. 1997). (References can be found in Biosolids Applied to Land: Advancing Standards and Practices, National Research Council (2002); http://www.nap.edu/catalog.php?record_id=10426 )
- Air releases of mercury from amalgam retained in sewers due to settling will also occur and should be noted.