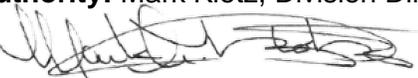


# DOW 1.3.10 Mercury - SPDES Permitting & Multiple Discharge Variance

New York State Department of Environmental Conservation

## DEC Program Policy

**Issuing Authority:** Mark Klotz, Division Director

Signature: 

**Title:** Mercury - SPDES Permitting & Multiple Discharge Variance

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**2<sup>nd</sup> Variance Issue Date:** October 2015

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Modification Date:

January 12, 2021 – Clarification of terminology in Part III.A.5.c.iv.a)

## **PURPOSE**

This document provides technical guidance for the development of state pollutant discharge elimination system (SPDES) permits that regulate effluent<sup>1</sup> containing mercury.

This guidance primarily focuses on a multiple discharge variance (MDV) for mercury. The MDV was developed in accordance with 6 NYCRR 702.17(h) “to address widespread standard or guidance value attainment issues including the presence of a ubiquitous pollutant or naturally high levels of a pollutant in a watershed.” The first MDV was issued in October 2010, and it was subsequently revised and reissued in 2015; each subsequent iteration of the MDV is designed to build off the previous version, to make reasonable progress towards the water quality standard (WQS) of 0.70 ng/L dissolved mercury. All of the MDVs are necessary because human-caused conditions or sources of mercury prevent attainment of the water quality standard and cannot be remedied (i.e., mercury is ubiquitous in New York waters at levels above the WQS and compliance with a water quality based effluent limitation (WQBEL) for mercury cannot be achieved with demonstrated effluent treatment technologies).

This guidance supports New York State’s effort to reduce mercury pollution.

<sup>1</sup> For the purposes of this document, effluent means treated wastewater from wastewater treatment facilities and combined sewer overflow (CSO) collection systems.

## TABLE OF CONTENTS

PART I. INTRODUCTION .....	3
PART II. CURRENT WATER QUALITY .....	3
PART III. PERMITTING PROCEDURE: SURFACE WATER DISCHARGES .....	8
A.    MULTIPLE DISCHARGE VARIANCE (MDV) .....	8
1.    AUTHORIZATION.....	9
2.    ANTI-DEGRADATION .....	10
3.    DISCHARGE CATEGORIZATION.....	10
4.    MERCURY MINIMIZATION PROGRAMS (MMPs).....	11
5.    SPDES PERMIT LIMITATIONS.....	12
6.    PERMIT APPLICATION REVIEW.....	14
7.    MDV TERM.....	14
B.    INDIVIDUAL DISCHARGE VARIANCE (IDV) .....	15
1.    APPLICATION FOR AN IDV .....	15
2.    IDV REVIEW AND APPROVAL PROCEDURES.....	16
3.    IDV-BASED PERMIT CONDITIONS.....	16
C.    EFFLUENT LIMITATIONS OF 0.70 NG/L .....	17
PART IV. SPDES PERMIT EQUIVALENTS.....	17
PART V. RESPONSIBILITY .....	17
PART VI. RELATED REFERENCES .....	17
TABLES .....	20
FIGURES .....	25
APPENDIX A. ACRONYMS .....	26
APPENDIX B. SUMMARY OF MERCURY MINIMIZATION MILESTONES .....	28
APPENDIX C. MERCURY MINIMIZATION PROGRAMS .....	31
MERCURY MINIMIZATION PROGRAM (MMP) TYPE I .....	31
MERCURY MINIMIZATION PROGRAM (MMP) TYPE II .....	37
MERCURY MINIMIZATION PROGRAM (MMP) TYPE III .....	42
MERCURY MINIMIZATION PROGRAM (MMP) TYPE IV .....	46
APPENDIX D. CONDITIONAL EXCLUSION CERTIFICATION .....	49

## **PART I. INTRODUCTION**

The Mercury - SPDES Permitting & Multiple Discharge Variance, and Water Quality Monitoring Policy was first issued in October 2010 to provide technical guidance to permit writers and ensure the consistent development of individual SPDES permits for facilities that discharge mercury at levels greater than the most stringent WQS 0.70 ng/L (Table 1). This MDV does not change the WQS of 0.7 ng/L; it establishes a variance of the WQBEL which is based on the WQS. Therefore, SPDES permits which include this variance comply with 40 CFR 122.44.

In the 2015 MDV, the New York State Department of Environmental Conservation (the Department) considered the existing background concentration of mercury in ambient waters and precipitation, the current performance of wastewater treatment facilities (WWTFs), and available technology, and developed a general level currently achievable (GLCA). The Department modified individual SPDES permits to include the GLCA as an effluent limitation. This guidance addresses the current state of mercury in New York, as of February 2020, and provides justification for the continuation of an MDV for 2020-2025.

### **RELATED REGULATIONS**

Article 6 of the New York Code, Rules and Regulations (NYCRR) Part 374-4 - Standards for the Management of Elemental Mercury and Dental Amalgam Wastes at Dental Facilities (Appendix B) became effective on May 12, 2006. Under 6 NYCRR 374-4, dental facilities must follow specific requirements regarding the management of their amalgam separators and storage and recycling of dental amalgam waste, as well as recordkeeping and inspection of their amalgam separators. Dental facilities have also been identified by the United States Environmental Protection Agency (USEPA) as a major source of mercury for municipal facilities.<sup>2</sup> In response, the USEPA promulgated 40 CFR 441 - Dental Office Point Source Category, which requires dental facilities to achieve pretreatment standards by removal of dental amalgam solids from all amalgam process wastewater by the proper use and operation of amalgam separators or amalgam removal devices and through a series of best management practices. The MDV, in addition to these regulations, ensures progress towards water quality standard attainment.

## **PART II. CURRENT WATER QUALITY**

Water quality standards for mercury can be found in 6 NYCRR 703.5 and are reiterated in TOGS 1.1.1 (Table 1). The most stringent mercury water quality standard of 0.70 ng/L (dissolved) protects human consumers of fish. This water quality standard is exceeded in almost every waterbody in New York. The following sections describe current

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<sup>2</sup> Dental Effluent Guidelines. 2017. USEPA. Website - <https://www.epa.gov/eg/dental-effluent-guidelines>

concentrations of mercury in New York surface waters, precipitation, and effluent discharges.

## **AMBIENT SURFACE WATER BODIES**

Mercury is sampled through the Department's Rotating Integrated Basin Studies (RIBS) program, in which two to four of the State's 17 major drainage basins are sampled each year over a 5-year cycle. The RIBS ambient data for mercury is summarized in Table 2 and continues to show exceedances of the water quality standard.

Ninety-eight percent (98%) of the RIBS samples collected from 2015-2018 contained mercury at levels less than 10 ng/L, ninety-five percent (95%) above 0.70ng/L and yielded statewide average and median concentrations of 2.28 ng/L and 1.6 ng/L, respectively. Maximum concentrations by county ranged from 1.3 ng/L in Genesee County to 39.4 ng/L in Monroe County. The average concentrations by county ranged from 1.1 ng/L in Steuben County to 4.7 ng/L in Ulster County. When samples were grouped by New York State Major Drainage Basins, the Lake Champlain Basin had the lowest maximum and average mercury concentrations at 2.8 ng/L and 1.3 ng/L, respectively, while the Genesee River Basin had the highest maximum and average mercury concentrations at 39.4 ng/L and 3.3 ng/L, respectively.

## **ATMOSPHERIC DEPOSITION**

Studies suggest that much of the mercury present in ambient waters is a result of atmospheric deposition stemming from industrial activities.<sup>3</sup> The National Atmospheric Deposition Program sponsors the Mercury Deposition Network (MDN) to record total mercury concentration and deposition through precipitation in the United States and Canada. From this network, the Department identified five sampling locations in New York that collected deposition data from 2015-2018.<sup>4</sup> The average mercury concentration was 7.6 ng/L across the five sites. The average mercury concentrations for sample sites in New York and along the New York-Pennsylvania border<sup>5</sup> were also calculated (Table 3).

A comparison of the average mercury concentrations from 2013-2014 and 2015-2018 for sample locations represented during both timeframes was conducted (Table 4).

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<sup>3</sup> Volume III: Fate and Transport of Mercury in the Environment. 1997. USEPA, Office of Air Quality Planning & Standards and Office of Research and Development. Website - <https://www.epa.gov/sites/production/files/2015-09/documents/volume3.pdf>

<sup>4</sup> Precipitation data from the National Atmospheric Deposition Program's Mercury Deposition Network. 2020. NADP Program Office, Illinois State Water Survey, 2204 Griffith Dr., Champaign, IL 61820. Website - <http://nadp.slh.wisc.edu/data/MDN/>

<sup>5</sup> Sites along the New York-Pennsylvania border were included to represent those areas along the southern tier of NYS where no MDN location data was available.

Although still exceeding the most protective water quality standard, there has been a general decrease in mercury concentrations over time. This decrease corresponds to the implementation of the mercury minimization programs (MMPs) under this MDV, as well as regulations regarding upgrades to industrial operations (Appendix B). The observed decrease in concentrations may be attributable to these requirements and the emergence of other energy alternatives.

In addition, based on a lognormal distribution, the 95<sup>th</sup> percentile of the monthly average for each New York sample location was calculated. The average of these values across the New York locations was found to be 12.38 ng/L. Rounded to two significant figures, 12 ng/L will be used in this MDV as the threshold for the mercury concentration found due to natural atmospheric deposition. This is a reduction from 20 ng/L stated in the previous MDV; it is likely due to both the implementation of the MDV and Clean Air Act regulations.

## **EFFLUENT DISCHARGES**

As part of a complete individual SPDES permit application (NY-2A, NY-2C), facilities must sample for mercury using USEPA Method 1631. Depending on a facility's permit class,<sup>6</sup> it may be subject to a mercury effluent limitation and MMP. Discharge monitoring reports (DMRs) submitted by 158 municipal facilities<sup>7</sup> and industrial facilities<sup>8</sup> were used to evaluate current, February 2017 to February 2020, effluent conditions. Industrial and municipal facilities were analyzed independently due to the differing nature of these discharges. Several different statistical analyses were used to evaluate each facility individually including mean, median, and maximum calculations (Table 5).

Based on the *average* of available municipal data, approximately 86% of the municipal facilities were at or below 12 ng/L, 95% were at or below the GLCA effluent limitation of 50 ng/L, and 99% were below 200 ng/L. The average of the data for industrial facilities showed approximately 79% were at or below 12 ng/L, 92% were at or below the GLCA effluent limitation of 50 ng/L, and 96% were below 200 ng/L.

Based on the *median* of available municipal and industrial facility data, approximately 97% of the municipal and industrial facilities were reporting mercury concentrations at or below 50 ng/L. However, approximately 16% of the facilities are still reporting *maximum* mercury concentrations over 50 ng/L.

In general, the data suggests that facilities with mercury effluent limitations are capable

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<sup>6</sup> Wastewater discharge categories and permit classifications can be found in NYSDEC TOGS 1.2.2 - Administrative Procedures and the Environmental Benefit Permit Strategy for Individual SPDES Permits.

<sup>7</sup> Municipal facilities receive wastewater from both domestic and industrial sources. This wastewater contains a variety of pollutants, sometimes including mercury.

<sup>8</sup> Wastewater from industrial facilities contains pollutants; depending on the activities at the facility; this wastewater could include mercury.

of meeting effluent limitations at or below 50 ng/L. Over the next five years, the Department will continue to incorporate mercury effluent limitations and associated MMP language, consistent with this MDV, into SPDES permits. Evaluation of mercury effluent data will be considered as part of the next MDV reissuance.

## **MERCURY TREATMENT TECHNOLOGY**

Technological advancements are needed to reduce the concentrations of mercury discharged from facilities through wastewater treatment. Under contract with the USEPA, Science Applications International Corporation studied mercury wastewater treatment and published a report in 2005.<sup>9</sup> The report indicated that it was possible to reduce mercury to about 12 ng/L using selective sorbents. However, no treatment technology was demonstrated to consistently achieve levels of 12 ng/L or less. Another USEPA study, published in 2007, also demonstrated continuing difficulties in achieving mercury treatment to levels equal to the minimum level (ML) of 0.5 ng/L for USEPA Method 1631.<sup>10</sup>

In 2013, Argonne National Laboratory released a study of an industrial facility in Indiana that focused on the achievability of meeting a 1.3 ng/L effluent limitation. The study revealed that this threshold is physically and chemically achievable by current technology for small-scale systems.<sup>11</sup> A larger demonstration of the practical application of such technology has not been conducted, so the feasibility and potential costs of pursuing widespread implementation have yet to be established.

Currently, more advanced forms of mercury treatment technology capable of reducing mercury in effluent are not economical. According to the Ohio Environmental Protection Agency (Ohio EPA) Mercury Variance Guidance,<sup>12</sup> “Implementation of the general mercury variance is intended to prevent substantial and widespread social and economic impacts. The average cost to remove mercury below 12 ng/L through end-of-pipe treatment is in excess of ten million dollars per pound of mercury removed.” Consistent with Ohio EPA, the Department is using this MDV to provide a way for facilities to combat mercury pollution without installing “costly end of pipe treatment.” While review of the above information suggests that the GLCA effluent limitation is achievable, none of the systems studied demonstrated compliance with the WQS. Therefore, the Department concludes that achieving the WQBEL is not currently achievable.

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<sup>9</sup> Technological Feasibility of Proposed Water Quality Criteria For New Jersey. 2005. Prepared for USEPA Region 2 by Science Applications International Corporation.

<sup>10</sup> Treatment Technologies for Mercury in Soil, Waste, and Water. 2007. USEPA, Office of Superfund Remediation and Technology Innovation. Washington, DC 20460. Website- [https://www.epa.gov/sites/production/files/2015-08/documents/treat\\_tech\\_mercury\\_542r07003.pdf](https://www.epa.gov/sites/production/files/2015-08/documents/treat_tech_mercury_542r07003.pdf)

<sup>11</sup> Achieving the Great Lakes Initiative Mercury Limits in Oil Refinery Effluent. 2013. Water Environment Research Vol 85, Issue 1, p. 77-86.

<sup>12</sup> Mercury Variance Guidance. 2000. Ohio EPA. Website - <http://epa.ohio.gov/portals/35/guidance/permit10.pdf>

Wastewater treatment system upgrades may be necessary at a few industrial facilities which are unable to achieve the GLCA effluent limitation using other methods. It is not anticipated that a treatment system upgrade for a municipal facility is needed to achieve the GLCA effluent limitation. However, more stringent control of industrial users and hauled wastes may be required by the municipal facility to sufficiently reduce municipal facility effluent concentrations and achieve the GLCA effluent limitation.

As implementation of the MDV proceeds, the Department will continue to gather data on the effectiveness of treatment systems and associated costs. This will allow for a better understanding of the capabilities of different mercury treatment technologies and the ability for implementation state-wide.

## **MERCURY TMDL**

The USEPA-approved Northeast Mercury Total Maximum Daily Load (TMDL)<sup>13,14</sup> outlines the strategy for achieving the water quality standard in the Northeast United States. The TMDL is a regional plan to reduce mercury entering the surface waters of Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Alterations and additions have not been made since the original 2007 publication of the TMDL.

Based on calculations in the TMDL, 98% of the mercury load to surface waters is the result of atmospheric deposition and the remaining 2% is due to effluent discharges. Logically, the TMDL focuses primarily on reductions in anthropogenic mercury emissions as a means of reducing atmospheric deposition of mercury, and thereby improving water quality. According to the TMDL, a 98% reduction in atmospheric deposition of mercury is needed in order to meet water quality goals.

The TMDL does not assign individual loadings to discharges. Rather, compliance with water quality standards is expected to be achieved via implementation of MMPs and the continuation of other regional mercury reduction efforts.

## **FISH ADVISORIES**

Mercury is a bioaccumulative pollutant, which means it can concentrate and build up in the food chain over time. Fish are especially prone to mercury accumulation, putting humans who consume them at risk. The New York State Department of Health (NYSDOH) regularly issues fish advisories for New York waterbodies to warn consumers

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<sup>13</sup> Northeast Regional Mercury Total Maximum Daily Load. 2007. USEPA. Website - <http://click.neiwppcc.org/mercury/mercury-docs/FINAL%20Northeast%20Regional%20Mercury%20TMDL.pdf>

<sup>14</sup> The 2010 MDV is consistent with the NYSDEC Mercury Work Group Recommendations to Meet the Mercury Challenge, which is incorporated by reference into the approved TMDL. NYSDEC Mercury Work Group Recommendations to Meet the Mercury Challenge. 2006. NYSDEC. Website - [http://www.dec.ny.gov/docs/permits\\_ej\\_operations\\_pdf/meetmercurychallenge.pdf](http://www.dec.ny.gov/docs/permits_ej_operations_pdf/meetmercurychallenge.pdf)

of potential hazards. Advisories for specific water basins or fish species can be accessed from the NYSDOH webpage.<sup>15</sup> As of March 2020, there is a statewide advisory to limit fish consumption due to mercury contamination, as well as more restrictive advisories for many specific waterbodies.

## **PART III. PERMITTING PROCEDURE: SURFACE WATER DISCHARGES**

### **A. MULTIPLE DISCHARGE VARIANCE (MDV)**

#### **SUMMARY**

Water quality standards for mercury are exceeded in ambient water bodies, atmospheric deposition, and effluent. Atmospheric deposition carries mercury resulting from industrial incineration activities across New York's borders and requires federal or multi-state coordination to mitigate. Mercury deposition from precipitation causes waterbodies to exceed water quality standards without additional inputs from other sources. Current treatment technologies are unable to reliably achieve the level of removal necessary to meet the WQS.

As such, achieving the WQBEL is impracticable. Both federal and state programs have been implemented to mitigate major sources of mercury, including dental facilities, to municipal facilities. Continuation of the MDV is needed to allow facilities to continue to make progress towards the WQS in a fair and cost-effective manner.

The 2015 MDV allowed the Department to identify and require mercury monitoring and MMPs, through SPDES permitting, for a number of facilities. The 2020 MDV expands upon these efforts.

#### **MULTIPLE DISCHARGE VARIANCE**

Mercury MDV permitting strategy components:

1. Authorization;
2. Anti-Degradation;
3. Discharge Categorization;
4. Mercury Minimization Programs;
5. SPDES Permit Limitations;
6. Permit Application Review; and

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<sup>15</sup> Fish: Health Advice on Eating Fish You Catch. New York Department of Health. Website - [http://www.health.ny.gov/environmental/outdoors/fish/health\\_advisories/](http://www.health.ny.gov/environmental/outdoors/fish/health_advisories/)

## 7. MDV Term.

Permittees accepting the MDV are subject to the terms of the MDV as incorporated into their SPDES permit. Alternatively, permittees may seek an individual discharge variance (IDV) as described in below in Part III.B or be subject to an effluent limitation of 0.70 ng/L.

Specific elements of New York's MDV are explained in the sections below.

### 1. AUTHORIZATION

6 NYCRR 702.17(h) authorizes the use of multiple discharger variances, stating that: *“Where the department determines that a multiple discharge variance is necessary to address widespread standard or guidance value attainment issues including the presence of a ubiquitous pollutant or naturally high levels of a pollutant in a watershed, the department, in lieu of the discharger, may conduct the variance demonstration requirements in subdivisions (b) and (c) of this section. Any permittee accepting such variance shall be subject to the provisions of subdivision (e) of this section.”*

Where achievement of a WQBEL is not feasible, 6 NYCRR 702.17(b) specifies the factors for which a variance may be granted. The justification for granting a statewide MDV for mercury is 6 NYCRR 702.17(b)(3) *“human caused conditions or sources of pollution prevent attainment of the standard ... and cannot be remedied ...”*.

Part II of this MDV outlines water quality standards and current conditions in New York State. The information in Part II demonstrates that 1) the most stringent mercury water quality standards are exceeded in much of the state waterbodies and 2) discharges from facilities cannot consistently meet WQBELs based on these standards. The USEPA-approved Northeast Mercury TMDL documents that the mercury WQBEL exceedance is human caused, stemming largely from atmospheric deposition. At present, there are no demonstrated full-scale effluent treatment technologies that can achieve these WQBELs.

The Department has determined that the MDV is consistent with the protection of the public health, safety, and welfare. During the effective period of this MDV, any increased risks to human health are mitigated by fish consumption advisories issued periodically by the NYSDOH.

In accordance with 6 NYCRR 702.17(h), the MDV will result in reasonable progress toward compliance with the mercury WQBEL by including meaningful, yet achievable, requirements in individual SPDES permits. Until there is more stringent air pollution control, thereby decreasing the amount of mercury in our waterbodies through deposition, and viable treatment technologies are developed, there will be a continuing need for this MDV.

## 2. ANTI-DEGRADATION

The Department's anti-degradation policy is included in *Organization and Delegation Memorandum No. 85-40*, *TOGS 1.3.9*, and *TOGS 1.2.1*; it is a consideration when developing individual SPDES permits. Additional guidance is available from USEPA.<sup>16</sup>

## 3. DISCHARGE CATEGORIZATION

As of March 2020, the MDV is applicable to 1,418 individual SPDES permits, not all of which have been modified to include the MDV. Of the 1,418 applicable facilities, 80 are USEPA major industrials (03) and 210 are USEPA major municipals (05). The remainder are NYS significant surface water minor facilities, including 502 industrials (01), 363 municipals (07), and 263 PCIs (09).<sup>17</sup> Currently, 174 SPDES permits require mercury monitoring or contain the GLCA effluent limitation and include MMPs. The remaining permits which do not currently include mercury monitoring, limitations, or MMPs cover a range of types, sizes, and likelihood of being mercury sources. The facilities which may be mercury sources include those facilities that use mercury in their processes, accept wastewater containing mercury, discharge stormwater runoff which is a vector for site-related mercury contamination, or otherwise generate concentrations of mercury unrelated to atmospheric deposition or water intakes.

The following criteria are used to determine if a facility has a mercury source:

- The facility is or receives discharge from 1) individually permitted combined sewer overflow (CSOs)<sup>18</sup> communities and/or 2) Type II sanitary sewer overflow (SSO)<sup>19</sup> facilities;
- One or more effluent samples which exceed 12 ng/L, including samples taken as a result of the SPDES application process;
- 1) Internal or tributary waste stream samples exceed the GLCA effluent limitation **AND** 2) the final effluent samples are less than the GLCA due primarily to dilution by uncontaminated or less contaminated waste streams. Both components of this criterion may include samples taken as a result of the SPDES application process;
- A permit application or other information indicates that mercury is handled on site and could be discharged through outfalls;
- Outfalls which contain legacy mercury contamination;

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<sup>16</sup> Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion (sections 7.2.3, 7.5.1.2.2). EPA-823-R-10-001, April 2010. Website - <https://www.epa.gov/wqc/guidance-implementing-january-2001-methylmercury-water-quality-criterion-fact-sheet>

<sup>17</sup> These permits classes are included because they could potentially receive mercury permit limitations. Wastewater discharge categories and permit classifications can be found in NYSDEC TOGS 1.2.2 - Administrative Procedures and the Environmental Benefit Permit Strategy for Individual SPDES Permits.

<sup>18</sup> CSO permits are included under the 05 and 07 permit classifications.

<sup>19</sup> These are overflow retention facilities (ORFs) and are included under the 05 and 07 permit classifications.

- The facility's collection system receives discharges from a dental and/or categorical industrial user (CIU)<sup>20</sup> that may discharge mercury;
- The facility accepts hauled wastes; or,
- The facility is defined as a categorical industry that may discharge mercury. This may also include dentists, universities, hospitals, or laboratories which have their own SPDES permit.

#### **4. MERCURY MINIMIZATION PROGRAMS (MMPs)**

The MMP is designed to reduce mercury effluent levels and make progress towards the WQS, 0.70 ng/L. MMP permit conditions have been developed consistent with 40 CFR Part 132. MMP Type I, II, III, and IV permit conditions are included in Appendix C of this document. MMP conditions may include implementation of an on-going program consisting of:

- Periodic monitoring designed to quantify and, over time, track the reduction of mercury;
- A control strategy for reducing mercury discharges via cost-effective measures,<sup>21</sup> which may include more stringent control of tributary waste streams, hauled waste and industrial users, and tracking down/removing potential mercury sources. 6 NYCRR 750-2.9(a)(4) requires the permittee to keep an up-to-date and enforceable Sewer Use Law (SUL) in order to control discharges to the WWTF; and/or
- Submission of periodic status reports.

In cases where a permit includes an individual level currently achievable (ILCA) effluent limitation, the MMP permit requirements will specify the completion of semi-annual instead of annual status reports.

#### **MERCURY MINIMIZATION PROGRAM DETERMINATION**

There are many factors that influence the appropriate MMP language, monitoring requirements, and effluent limitations for a facility. The decision tree in Figure 1 is a tool to determine the appropriate MMP for each facility. In general, MMPs Type I, II, and III are appropriate for facilities which have larger flows or contain potential sources of mercury in the system/onsite and, thus, have a greater potential to discharge mercury. MMP Type IV is appropriate for facilities that do not meet the criteria of either MMP Type

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<sup>20</sup> CIUs include those listed under Federal Regulation in 40 CFR Part 400.

<sup>21</sup> The control strategy implemented by the permittee is community specific; some communities may have more to do than others.

I, II, or III, due to the lesser potential sources of mercury and do not require permit limitations.

## **5. SPDES PERMIT LIMITATIONS**

The following section explains the type of limitations included in permits and how they are set.

### **a. PHASES OF MDV IMPLEMENTATION**

The phases of MDV implementation are as follows:

- i. Initial, mercury permit limitation(s), based on the variance of the WQBEL, included in a permit for a facility without previous mercury limitation(s);
- ii. Interim, mercury permit limitation(s), based on the variance of the WQBEL, which are updated and/or made more stringent for a facility with previous mercury limitation(s); and
- iii. Final, the goal of 0.70 ng/L dissolved mercury as the WQS.

### **b. TYPES OF PERMIT LIMITATIONS AND MONITORING FREQUENCIES**

The removal of mercury from effluent discharges varies between facilities due to many factors including, but not limited to, type of facility, available technology, and current effluent characteristics. Table 6 includes the types of limitations and their associated monitoring frequencies that will be incorporated into permits.

### **c. SETTING EFFLUENT LIMITATIONS**

In keeping with the Department's Anti-Degradation Policy (TOGS 1.3.9) and Anti-Backsliding consistent with CWA §402(o) and 6 NYCRR 750-1.10(c), any revised permit effluent limitation(s) cannot be less stringent than the facility's existing effluent limitation(s).

The following approach is to be used when setting effluent limitations for SPDES permitted facilities:

- i. New and recommencing discharges are not eligible for a variance within the Great Lakes Basin unless the requirements of 40 CFR Part 132 and 6 NYCRR 702.17(a)(2) are met. For such permittees, permits should be issued to contain a monthly average effluent limitation of 0.70 ng/L and routine monitoring using EPA Method 1631.
- ii. Individually permitted CSO communities and Type II SSO facilities do not require mercury effluent limitations.

- iii. With fewer than 10 consecutive data points:
  - a) The initial effluent limitation will be the GLCA or ILCA. Only a facility incapable of meeting the GLCA effluent limitation will be given the ILCA.
- iv. With 10 or more consecutive data points, existing effluent quality (EEQ) must be evaluated:
  - a) If the EEQ is more than the GLCA, and the permit already contains an effluent limitation as an ILCA, the existing ILCA will be used as an initial phase permit limitation.
  - b) If the EEQ is greater than the GLCA, but the permit already contains an effluent limitation less than or equal to the GLCA, then the existing effluent limitation should be retained.
  - c) If the EEQ is greater than the GLCA and mercury was not previously included as a permit limitation, then an ILCA should be used as an initial phase effluent limitation.
  - d) If the EEQ is less than the GLCA, the EEQ should be used as an interim phase permit limitation in addition to the GLCA.
    - i) Within the Great Lakes Basin
      - (a) If the EEQ is less than the GLCA, the EEQ must be used as an interim phase effluent limitation, regardless of the value.
    - ii) Outside of the Great Lake Basin
      - (a) If the EEQ is less than the mercury concentration attributed to natural atmospheric deposition, 12 ng/L, the interim phase effluent limitation should be set at 12 ng/L.
- v. Facilities with an EEQ at or below 12 ng/L<sup>22</sup> are eligible for reduced requirements through a permittee-initiated permit modification:
  - a) For facilities implementing an MMP Type I
    - i) Reduced requirements
      - (a) Conduct influent monitoring, sampling quarterly, in lieu of monitoring within the collection system, such as at key locations and potential mercury sources; and
      - (b) Conduct effluent compliance sampling quarterly.
    - ii) If a facility with reduced requirements reports discharges above 12 ng/L for two of four consecutive effluent samples, the Department may undertake a Department-initiated modification to remove the allowance of reduced requirements.
  - b) For facilities implementing an MMP Type II and III
    - i) Reduced requirements
      - (a) Conduct influent monitoring, sampling semi-annually, in lieu of monitoring within the collection system, such as at key

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<sup>22</sup> Using the NYS MDN sample sites, 12ng/L is the average of the 95<sup>th</sup> percentile of each sample location's monthly average. If the facility is discharging below 12 ng/L, then it is below the expected contribution due to natural atmospheric deposition. The GLCA limitation of 50 ng/L does not take this into account.

- locations and potential mercury sources; and
- (b) Conduct effluent compliance sampling semi-annually.
- ii) If a facility, with reduced requirements, reports discharges above 12 ng/L for two of four consecutive effluent samples, the Department may undertake a Department-initiated modification to remove the allowance of reduced requirements.
- vi. For facilities where conformance to the MDV permitting strategy could result in less stringent requirements and the appearance of backsliding, the Department will review existing requirements and may allow less stringent requirements where justified in accordance with 6 NYCRR 750-1.10(c).

ILCA, GLCA, and EEQ effluent limitations may be established for industrial and PCI facilities at internal locations as recommended in *TOGS 1.2.1*. For the purposes of this assessment, such effluent limitations are considered technology based effluent limitations. This includes cases where an internal outfall exceeds the GLCA effluent limitation, but the final outfall does not due to dilution with less contaminated wastewater.

Table 7 is a summary table of the possible combinations of permit limitations based on the phase of MDV implementation.

## **6. PERMIT APPLICATION REVIEW**

The analytical methods and sampling techniques used should be consistent with Table 8 recommendations when sampling for mercury as part of a SPDES permit application, environmental benefit permit strategy (EBPS) request for information (RFI), or in response to other Department requests. Otherwise, the information provided should be considered incomplete and the permittee (or applicant) required to repeat the sampling using the correct methods. It is often appropriate for Department staff to require sampling of water supply intake, wastewater influent, and wastewater effluent to ensure complete characterization.

If permit application data for effluent mercury consists of a single sample result, which is greater than 80% of the GLCA value (i.e., > 40 ng/L), and there is no other low level effluent mercury data available, then the permittee (or applicant) should be required to further characterize the discharge by collecting a minimum of three additional samples, once per week for three weeks, representative of routine facility operations. This additional information is necessary for the Department to consider the application complete.

## **7. MDV TERM**

This MDV is in effect for five years from the effective date specified on page 1 of this document. Permits may not be renewed or modified after the expiration date of the MDV

unless the permit incorporates conditions of either a new MDV or an IDV or includes an effluent limitation of 0.70 ng/L. It is likely that the water quality standard will not be achieved for many years and that it will be necessary to pursue one or more subsequent MDVs in the future.

## **B. INDIVIDUAL DISCHARGE VARIANCE (IDV)**

Where a permittee does not accept authorization under the MDV, such permittees have two regulatory options to obtain necessary permit authorization. The permittee can accept an effluent limitation of 0.70 ng/L (typically, not a realistic option as described earlier in this document) or apply for and receive approval of a site-specific IDV in accordance with 6 NYCRR 702.17.

### **1. APPLICATION FOR AN IDV**

Consistent with both 6 NYCRR 621.3(a)(5) and 750-1.7(f), a permittee (or applicant) must submit an IDV request at the time of application for either a permit renewal or a permittee-initiated modification. The IDV request is part of the overall permit application completeness evaluation by the Department.

If the permittee requests any deviation from the MDV during the public notice period, then this must be accompanied by an IDV application.

#### **a. IDV APPLICATION REQUIREMENTS**

In accordance with 6 NYCRR 702.17 and 750-2.1(i), an approvable application for an IDV should contain all the following information:

- i. A demonstration that it is not feasible for the permittee to achieve one or more of the WQS of 0.70, 1.3, and 2.6 ng/L;
- ii. A demonstration that it is not feasible for the permittee to achieve the MDV conditions in *DOW 1.3.10*. This shall address the specific MDV provisions that the applicant wishes to deviate from;
- iii. A characterization of any increased risk to human health and the environment and a demonstration that granting the IDV will not adversely affect the public health, safety and welfare, or, jeopardize the continued existence of any endangered or threatened species. The characterization and demonstration should be made relative to both the water quality standard and the MDV conditions, i.e., what is the water quality risk of the overall IDV and what is the incremental increase in risk to water quality of the IDV versus the MDV;

- iv. A demonstration that the requested IDV will conform to the Northeast Mercury TMDL,<sup>23</sup>
- v. A demonstration that the requested IDV will conform to the Department's anti-degradation policy is contained in *Organization and Delegation Memorandum No. 85-40, TOGS 1.3.9, and TOGS 1.2.1*;
- vi. A tabulation of all available mercury data for the facility. This tabulation shall include a minimum of ten EPA Method 1631 sample results for each water supply intake, treatment system influent (if applicable), and effluent location. Sample results should also be provided for atmospheric precipitation, groundwater, site soils and sediments, and materials used or stored at the site, as appropriate.

The Department will process IDV requests as part of either a renewal or as a permittee-initiated modification.

## **2. IDV REVIEW AND APPROVAL PROCEDURES**

IDV applications must be complete in order to be considered for inclusion in a facility's SPDES permit. Consistent with 6 NYCRR 750-1.2(a)(8), IDV applications that are not complete should be revised and resubmitted to the Department within 60 days of notification. Requests which remain incomplete, or are otherwise not approvable, should be denied by the Department in accordance with 6 NYCRR 702.17(f), and other applicable procedural regulations.

Assuming an IDV demonstration can be made to the satisfaction of the Department, such IDV applications for Great Lakes Basin discharges must be sent to USEPA Region 2 for their review and approval. The procedure is spelled out in the 1998 MOA in section III, paragraphs (2) - (8) and the 2000 MOA in section XII.<sup>24</sup>

If a permittee's IDV application is not accepted by either the Department (or, where appropriate, USEPA), then the permittee may seek authorization under the MDV, or the Department may impose a monthly average effluent limitation of 0.70 ng/L or deny the permit application.

## **3. IDV-BASED PERMIT CONDITIONS**

Permit requirements based on an approved IDV are based on both 6 NYCRR 702.17(e)

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<sup>23</sup>Northeast Regional Mercury Total Maximum Daily Load. 2007. USEPA. Website - <http://click.neiwppc.org/mercury/mercury-docs/FINAL%20Northeast%20Regional%20Mercury%20TMDL.pdf>

<sup>24</sup> Amendment To The National Pollutant Discharge Elimination System Memorandum Of Agreement Between The New York State Department Of Environmental Conservation And The United States Environmental Protection Agency, Region 2 Relating To Implementation Of The Requirements Of The Great Lakes Water Quality Guidance In The Great Lakes Basin. 27 September 2000.

and the TMDL.<sup>25</sup> The MDV conditions will serve as the basis for the IDV conditions, except where differences have been justified by the permittee. For such permits, the following requirement should also be added to the bottom of the MMP permit page: The mercury-related requirements in a permit are based on a site-specific IDV issued in accordance with 6 NYCRR 702.17 (see also *DOW 1.3.10*). The IDV is valid for five years, or the remaining term of the permit, whichever period is less. The IDV may not be administratively renewed without full technical review. The permittee must submit a complete permit renewal application, including a new IDV application, in accordance with regulatory deadlines.

## **C. EFFLUENT LIMITATIONS OF 0.70 NG/L**

No MDV is necessary where the discharge can meet the WQS of 0.70 ng/L. Such permits should be issued requiring compliance with routine monitoring using EPA Method 1631 and a monthly average effluent limitation of 0.70 ng/L.

## **PART IV. SPDES PERMIT EQUIVALENTS**

SPDES permit equivalents (6 NYCRR 750-1.5(a)(2)) are developed for remedial discharges from contaminated sites using the same technical procedures as those used for SPDES permits. New permit equivalents should conform to this guidance. Existing permit equivalents for long-term discharges should be updated, in accordance with this MDV, at the time the permit equivalent is renewed/modified. If there is a proposed remedial discharge or renewal/modification of an existing discharge for which mercury contamination could be an issue, EPA Method 1631 data should be provided. If the site clean-up is for mercury-containing pollutants, the permit limitation will be 0.7 ng/L. An MMP is not necessary for most short-term remedial discharges of less than two years since there will be insufficient time for the MMP to achieve a meaningful reduction in mercury.

## **PART V. RESPONSIBILITY**

Staff of the Bureau of Water Permits will maintain and interpret this policy and provide updates as needed.

## **PART VI. RELATED REFERENCES**

To fully understand the mercury SPDES permitting and monitoring recommendations contained herein, one must also be familiar with the following primary documents and

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<sup>25</sup> Northeast Regional Mercury Total Maximum Daily Load. 2007. USEPA. Website - <http://click.neiwpcc.org/mercury/mercury-docs/FINAL%20Northeast%20Regional%20Mercury%20TMDL.pdf>

regulations. It is important to note that some of these documents are more up to date than others. In instances where guidance documents provide conflicting recommendations, the most recent guidance should be relied upon. These, and some secondary documents and regulations, are cited and/or footnoted within the MDV as appropriate.

6 NYCRR Part 374-4 - Standards for the Management of Elemental Mercury and Dental Amalgam Wastes at Dental Facilities.

6 NYCRR Parts 700-706 - Water Quality Regulations.

6 NYCRR Part 750 - SPDES Permit Regulations.

40 CFR Part 132 - Water Quality Guidance for the Great Lakes System.

40 CFR Part 136 - Guidelines Establishing Test Procedures for the Analysis of Pollutants.

40 CFR Part 441 - Dental Office Point Source Category.

Amendments to the NPDES Memorandum of Agreement Between the NYSDEC and the USEPA, Region II Relating to Implementation of the Requirements of the Great Lakes Water Quality Guidance in the Great Lakes Basin, March 16, 1998 and September 27, 2000.

Northeast Regional Mercury Total Maximum Daily Load, October 24, 2007.

NYSDEC Mercury Work Group Recommendations to Meet the Mercury Challenge, December 2006.

NYSDEC Organization and Delegation Memorandum No. 85-40, Water Quality Antidegradation Policy, September 9, 1985.

NYSDEC TOGS 1.1.1 - Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.

NYSDEC TOGS 1.2.1 - Industrial Permit Writing.

NYSDEC TOGS 1.2.2 - Administrative Procedures and the Environmental Benefit Permit Strategy for Individual SPDES Permits.

NYSDEC TOGS 1.3.1 - Total Maximum Daily Loads and Water Quality-Based Effluent Limits.

NYSDEC TOGS 1.3.3 - SPDES Permit Development for POTWs.

NYSDEC TOGS 1.3.9 - Implementation of the NYSDEC Antidegradation Policy - Great Lakes Basin (Supplement to Antidegradation Policy dated September 9, 1985).

## TABLES

**Table 1.** Ambient water quality standards for mercury.

<b>Water Quality Standard (ng/L)</b>	<b>Form of Mercury</b>	<b>Basis</b>	<b>Regulation</b>
1400	Dissolved	Aquatic Life – Acute	6 NYCRR Part 703.5
770	Dissolved	Aquatic Life – Chronic	6 NYCRR Part 703.5
700	Total	Human Health - Water Supply	6 NYCRR Part 703.5
2.6	Dissolved	Wildlife	6 NYCRR Part 703.5
1.3	Total	Wildlife (Great Lakes Basin only)	40 CFR Part 132.6(e)
0.70	Dissolved	Human Health - Fish Consumption	6 NYCRR Part 703.5

**Table 2.** Average and maximum mercury concentrations from ambient surface water monitoring data. A total of 577 samples were used in the 2015-2018 analysis. The samples were analyzed using EPA Method 1631. 2019 data was not available at the time of this analysis. Values were rounded to two significant figures.

Drainage Basin (basin number)	Mercury Concentration Results (ng/L) Average/Maximum (number of samples)	
	2012-2014	2015-2018
Lake Erie - Niagara River Basin (01)	2.5/6.5 (17)	1.9/14 (67)
Allegheny River Basin (02)	1.7/22.9 (116)	2.9/15.3 (19)
Lake Ontario & Minor Tributaries (03)	1.0/3.5 (65)	2.0/9.5 (52)
Genesee River Basin (04)	2.8/10.1 (14)	3.3/39.4 (77)
Chemung River Basin (05)	2.0/14.9 (79)	3.2/23.5 (13)
Susquehanna River Basin (06)	2.6/75.5 (118)	2.0/5.9 (24)
Seneca-Oneida-Oswego River Basin (07)	1.1/6.4 (171)	1.9/16 (27)
Black River Basin (08)	3.0/16.7 (64)	3.0/8.8 (18)
St. Lawrence River Basin (09)	0.2/0.685 (18)	2.3/8.5 (106)
Lake Champlain Basin (10)	1.1/3.4 (56)	1.3/2.8 (23)
Upper Hudson River Basin (11)	1.5/17.1 (142)	2.1/7.2 (25)
Mohawk River Basin (12)	5.4/94.8 (40)	2.6/9.3 (22)
Lower Hudson River Basin (13)	3.2/26.3 (148)	2.8/14.8 (23)
Delaware River Basin (14)	-	1.5/6.9 (71)
Passaic - Newark (Basin 15)	-	-
Housatonic River Basin (16)	-	-
Atlantic Ocean - Long Island Sound (Basin 17)	1.7/5.7 (41)	2.3/6.4 (10)

**Table 3.** Average mercury concentration data from seven sample sites across New York and along the New York-Pennsylvania border. MDN data from 2015 through 2018 were used in this analysis as it is the most current and complete; 2019 data was not used because the dataset was incomplete. Each monitoring station recorded 40-50 samples. Values were rounded to two significant figures.

<sup>a</sup> The Bronx location identification number changed, but the location stayed the same.

Year	Average Mercury Concentration (ng/L) by Sample Location						
	NY03/06 <sup>a</sup> Bronx	NY20 Essex	NY43 Monroe	NY68 Ulster	NY96 Suffolk	PA30 Erie	PA90 Tioga
2015	8.9	5.1	8.8	6.6	5.6	11.5	8.1
2016	8.5	8.3	10.5	8.9	8.8	10.7	12.3
2017	9.0	4.7	7.2	9.1	7.1	9.9	7.5
2018	8.3	4.9	7.8	5.3	8.1	7.3	6.1

**Table 4.** A comparison of the average mercury concentrations between data collected in 2013-2014 and 2015-2018 at sites in New York and Pennsylvania.

<sup>a</sup> The Bronx location identification number changed, but the location stayed the same.

Time Frame	Average Mercury Concentration (ng/L) by Sample Location					
	NY03/06 <sup>a</sup> Bronx	NY20 Essex	NY43 Monroe	NY68 Ulster	PA30 Erie	PA90 Tioga
2013-2014	10.0	6.2	10.3	7.1	15.0	10.3
2015-2018	8.7	5.8	8.6	7.5	9.9	8.5

**Table 5.** The number of facilities that fall into each range of mercury concentration based on the analysis used. A total of 158 facilities were used in this analysis; 1,944 municipal facility mercury samples and 1,802 industrial facility mercury samples. Facilities at or under the GLCA limitation of 50 ng/L are indicated in grey.

<sup>a</sup> 12 ng/L is the mercury concentration that is found as a result of atmospheric deposition.

Mercury Concentration (ng/L)	Analysis Used					
	Average		Median		Maximum	
	Municipal	Industrial	Municipal	Industrial	Municipal	Industrial
0-12 <sup>a</sup>	95	38	100	43	53	18
12-50	10	6	8	3	41	20
50-200	4	2	1	2	11	6
200+	1	2	1	0	5	4
Total	110	48	110	48	110	48

**Table 6.** Types of limitations and monitoring frequencies. If less frequent monitoring is proposed, the permit writer must ensure that the monitoring meets the minimum requirements of 40 CFR Part 132. Otherwise the discharge will not qualify for the MDV and must either be authorized by an approved IDV or include a final effluent limitation of 0.70 ng/L. The grey area indicates information that has not yet been developed.

<sup>a</sup> This was established in the previous iteration of *DOW 1.3.10* and remains appropriate. 200 ng/L is the detection limit for EPA Method 245.1; this method cannot be used for compliance for permit limitations set below 200 ng/L. In the permit, the limitation can be any value 50-200 ng/L, as reported by the permittee to the Department.

<sup>b</sup> If a permit application, which triggers a full technical review, includes a mercury concentration of greater than 50 ng/L, the draft permit will include a compliance schedule, no greater than 5 (five) years, to get below 50 ng/L mercury concentration.

<sup>c</sup> Available low-level effluent monitoring data were evaluated to determine a GLCA effluent limitation applicable to all discharges authorized by the MDV. The GLCA effluent limitation was set during the previous version of this guidance document and remains appropriate. At least 92% of currently permitted discharges can meet a GLCA.

<sup>d</sup> Calculated using the 95<sup>th</sup> lognormal percentile of 10 or more data points.

<sup>e</sup> To determine the appropriate permit limitation for a permittee using EEQ, see Part III.A.5.c.iv.

<sup>f</sup> The first time a facility is given a limitation based on EEQ, it will be required to monitor monthly. The monitoring frequency may be reduced to once every two months for the same facility in subsequent permits as long as the limitation is still based on EEQ.

<sup>g</sup> The monitoring frequency for a facility with a permit limitation that is less than or equal to 12 ng/L depends upon the MMP Type which the facility is implementing.

Type of Limitation	Limitation Value, ng/L	Expressed as, in permit	Monitoring Frequency
Individual Level Currently Achievable (ILCA)	50-200 <sup>a, b</sup>	Daily Max	Weekly
General Level Currently Achievable (GLCA)	50 <sup>c</sup>	Daily Max	Monthly
Existing Effluent Quality (EEQ) <sup>d, e</sup>	>12-50	12 MRA	Monthly to Once every 2 months <sup>f</sup>
	≤12		Quarterly or Semi-annually <sup>g</sup>
Final	0.70	Monthly Average	TBD

**Table 7.** Types of limitation(s) for each phase of MDV implementation. To be authorized by the MDV, the permit must include the limitations as specified in this table.

<sup>a</sup> For those facilities outside of the Great Lakes Basin, if the EEQ is less than 12 ng/L, the interim phase effluent limitation should be set at 12 ng/L (Part III.A.5.c.iv.d)ii)(b)).

<sup>b</sup> Both EEQ and GLCA are included here because the EEQ is 12 MRA permit limitation and the GLCA is a daily max permit limitation (Table 6).

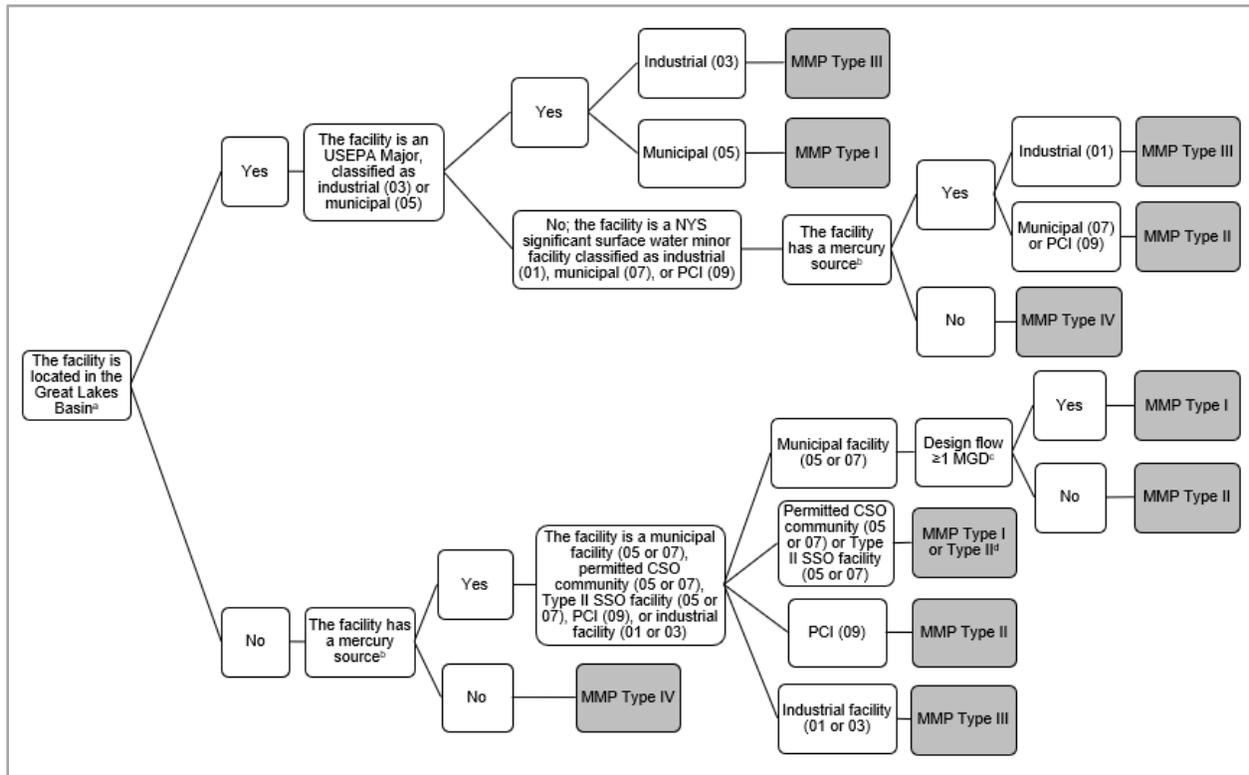
	Phase of MDV Implementation		
	Initial	Interim	Final
	ILCA	GLCA	0.70 ng/L
<b>Type of Limitation</b>	GLCA	GLCA	0.70 ng/L
	ILCA or GLCA	EEQ <sup>a</sup> and GLCA <sup>b</sup>	0.70 ng/L

**Table 8.** USEPA-40 CFR Part 136 Approved Methods for Mercury Water/Wastewater Analysis & Sampling. Methods suitable for each kind of analysis and sampling are indicated in grey (August 2020). The table captures approved methods as of issuance of this document. In recognition of continuing advances in analytical methodology and sample collection, the citations in Table 8 are only offered as an aid. Permittees are required to follow 40 CFR Part 136 – Guidelines Establishing Test Procedures for the Analysis of Pollutants for the appropriate collection method and the most sensitive approved analytical methods. Should any method citation directly conflict with 40 CFR Part 136-Guidelines Establishing Test Procedures for the Analysis of Pollutants, Table 8 citations yield to that authority.

<sup>a</sup> All mercury outfall monitoring must be: 1) collected as grab samples, 2) collected in a manner that ensures the quantification of mercury in the sample is representative of the compliance points being monitored and does not contribute to the loss of mercury in the sample (use of EPA Method 1669 for sample collection is recommended), and 3) analyzed using the most sensitive method approved under 40 CFR Part 136 by an environmental laboratory accredited by the New York State Department of Health Environmental Laboratory Approval Program (ELAP).

USEPA Method	MDL/ML (ng/L)	Method Suitability		
		Ambient Surface Water	Discharges to Surface Water - Permits & Permit Applications	MMP Internal Monitoring
245.7 <sup>a</sup>	2.0/5.0	No	No	Yes
1631 <sup>a</sup>	0.20/0.50	Yes	Yes	Yes

# FIGURES



**Figure 1.** MMP decision tree. The appropriate MMP for each facility is indicated in grey.

<sup>a</sup> The Great Lakes basin facilities have been prioritized by the USEPA and state regulations (Part III.A.5.c.i.).

<sup>b</sup> The criteria to determine if a facility has a mercury source can be found in Part III.A.3.

<sup>c</sup> The 1 MGD value is equivalent to the flow threshold employed by the USEPA when determining a USEPA major discharger designation.

<sup>d</sup> All individually permitted CSO communities and Type II SSO facilities are responsible to implement the same MMP Type as the regional wastewater treatment facility to which it is tributary.

## **APPENDIX A. ACRONYMS**

CAIR – Clean Air Interstate Rule

CFR – Code of Federal Regulations

CIU – Categorical Industrial User

CSO – Combined Sewer Overflow

DOW – NYSDEC, Division of Water

EBPS – Environmental Benefit Permit Strategy

EEQ – Existing Effluent Quality

ELAP – NYSDOH Environmental Laboratory Approval Program

GLCA – General Level Currently Achievable

IDV – Individual Discharge Variance

ILCA – Individual Level Currently Achievable

MACP – Mercury-added Consumer Products

MATS – Mercury and Air Toxics Standards

MDL – Method Detection Limit

MDN – Mercury Deposition Network

MDV – Multiple Discharge Variance

MGD – Million Gallons per Day

ML – Minimum Level

MMP – Mercury Minimization Program

MOA – Memorandum of Agreement

ng/L – Nanograms per Liter

NYCRR – New York State Codes, Rules and Regulations

NYSDEC – New York State Department of Environmental Conservation

NYSDOH – New York State Department of Health

PCI – Private/Commercial/Institutional Facility

POTW – Publicly Owned Treatment Works

RFI – Request for Information

RIBS – Rotating Integrated Basin Studies

RGGI – Regional Greenhouse Gas Initiative

SPDES – State Pollutant Discharge Elimination System

SSO – Sanitary Sewer Overflow

SUL – Sewer Use Law

TBEL – Technology Based Effluent Limitation

TMDL – Total Maximum Daily Load

TOGS – Technical & Operation Guidance Series

USEPA – United States Environmental Protection Agency

WQBEL – Water Quality Based Effluent Limitation

WQS – Water Quality Standard

WWTF – Wastewater Treatment Facility

## **APPENDIX B. SUMMARY OF MERCURY MINIMIZATION MILESTONES<sup>26</sup>**

### **1998**

New ambient water quality standards promulgated;

### **2002**

Lowered waste incineration limits;

### **2003**

Use of non-encapsulated elemental mercury banned in dental offices; dentists required to recycle any mercury or dental amalgam waste generated in their offices (NYS ECL 27-0926);

### **2004**

New York State Mercury-Added Consumer Products (MACP) Law passed, ECL Article 27, Title 21;

School (K-12) use/purchase of elemental mercury banned (MACP);

### **2005**

Elemental mercury sales or distribution restricted to medical, dental, manufacturing, and research purposes (MACP);

Sale/distribution of mercury-added novelty consumer products, and mercury fever thermometers and mercury body thermometers (without prescription) prohibited (MACP);

Labeling of most mercury-added consumer products required (MACP);

Disposal of mercury-added consumer products restricted (MACP);

Law restricting mercury use in vaccines;

### **2006**

Sale/distribution of mercury-added barometers, flow meters, hydrometers, pyrometers, psychrometers, esophageal dilators, bougie tubes, and gastrointestinal tubes prohibited

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<sup>26</sup>Additional information on mercury management in New York State can be found on the NYSDEC website [www.dec.ny.gov/chemical/285.html](http://www.dec.ny.gov/chemical/285.html)

(MACP);

6 NYCRR Part 374-4 goes into effect: Proper management of dental mercury required; dentists must install amalgam separators;

Mercury management restrictions at vehicle dismantlers;

Mercury-free schools outreach project begins;

## **2007**

Coal Fired Power Plant mercury regs issued, phase 2 implementation harmonized with CAIR & RGGI;

Sale/distribution of mercury hydrometers and mercury manometers prohibited (MACP);

Northeast Regional TMDL is approved by USEPA;

## **2008**

Dental amalgam separator installation deadline for existing dentists;

Sale/distribution of mercury switches and mercury relays, either individually or as a product component, is prohibited (MACP);

Sale/distribution of mercury sphygmomanometers, mercury wetted reed relays, mercury flame sensors, mercury thermometers and mercury thermostats prohibited (MACP);

## **2010**

Coal Fired Power Plant Regs Phase I 50% mercury reduction required, mercury cap, no trading allowed;

Phaseout of mercury-added motor vehicle components (MACP);

Mercury SPDES permitting strategy and Multiple Discharge Variance finalized;

## **2011**

USEPA announces Mercury and Air Toxics Standards (MATS) for power plants;

## **2013**

New York State Mercury Thermostat Collection Act- mandatory collection and environmentally sound management of out-of-service mercury thermostats by manufacturers;

## **2015**

Coal Fired Power Plant Regs Phase II- 90% mercury reduction required;

## **2019**

Regulations finalized to phase out coal fired power plants in New York by end of 2020;

Legislation passed in 2019 prohibits public and non-public elementary or secondary schools from installing a mercury-containing floor beginning January 1, 2021 (amends MACP); and

Legislation passed in 2019 requires producers of certain mercury-added lamps to meet mercury content restrictions adopted by the Department, effective January 1, 2021 (amends MACP).

## APPENDIX C. MERCURY MINIMIZATION PROGRAMS

### MERCURY MINIMIZATION PROGRAM (MMP) TYPE I

1. General - The permittee must develop, implement, and maintain a mercury minimization program (MMP), containing the elements set forth below, to reduce mercury effluent levels with the goal of achieving the WQBEL.
2. MMP Elements - The MMP must be a written document and must include any necessary drawings or maps of the facility and/or collection system. Other related documents already prepared for the facility may be used as part of the MMP and may be incorporated by reference. At a minimum, the MMP must include the following elements as described in detail below:
  - a. Monitoring - All mercury outfall monitoring must be conducted using the methods specified in Table 8 of *DOW 1.3.10*. Monitoring at influent and other locations tributary to compliance points may be performed using either USEPA Method 1631 or another sufficiently sensitive method, as approved under 40 CFR Part 136. Monitoring of raw materials, equipment, treatment residuals, and other non-wastewater/non-stormwater substances may be performed using other methods as appropriate. Monitoring must be coordinated so that the results can be effectively compared between locations.

Minimum required monitoring is as follows:

- i. Sewage Treatment Plant Influent & Effluent – The permittee must collect samples at each of these locations in accordance with the minimum frequency specified on the pages of the SPDES permit that contain the mercury effluent limitations.
- ii. Key Locations and Potential Mercury Sources – The permittee must sample *key locations*, chosen to identify *potential mercury sources*, at least semi-annually. Sampling of discharges from dental facilities in compliance with 6 NYCRR 374.4 is not required.
- iii. Hauled Wastes – The permittee must establish procedures for the acceptance of hauled waste to ensure the hauled waste is not a potential mercury source. Loads which may exceed 500 ng/L,<sup>27</sup> must receive approval from the Department prior to acceptance.
- iv. Decreased Monitoring Requirements - As is written in Part III.A.5.c.v.a) of *DOW 1.3.10*, facilities with EEQ at or below 12 ng/L

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<sup>27</sup>A level of 0.2 mg/L (200,000 ng/L) or more is considered hazardous per 40 CFR Part 261.11. 500 ng/L is used here to alert the permittee that there is an unusual concentration of mercury and that it will need to be managed appropriately.

are eligible for the following:

- 1) Reduced requirements, through a permittee-initiated permit modification
    - a) Conduct influent monitoring, sampling quarterly, in lieu of monitoring within the collection system, such as at *key locations*; and
    - b) Conduct effluent compliance sampling quarterly.
  - 2) If a facility with reduced requirements reports discharges above 12 ng/L for two of four consecutive effluent samples, the Department may undertake a Department-initiated modification to remove the allowance of reduced requirements.
  - 3) Under the decreased permit requirements, the facility must continue to conduct an annual status report, as applicable in accordance with 2.c of this MMP, to determine if any waste streams have changed.
- v. Additional monitoring must be completed as required elsewhere in this permit (e.g., locations tributary to compliance points).
- b. Control Strategy - The control strategy must contain the following minimum elements:
- i. Pretreatment/Sewer Use Law - The permittee must review pretreatment program requirements and the Sewer Use Law (SUL) to ensure it is up-to-date and enforceable with applicable permit requirements and will support efforts to achieve a dissolved mercury concentration of 0.70 ng/L in the effluent.
  - ii. Monitoring and Inventory/Inspections -
    - 1) Monitoring shall be performed as described in 2.a above. As mercury sources are found, the permittee must enforce its sewer use law to track down and minimize these sources.
    - 2) The permittee must inventory and/or inspect users of its system as necessary to support the MMP.
      - a) Dental Facilities
        1. The permittee must maintain an inventory of each dental facility.
        2. The permittee must inspect each dental facility at least once every five years to verify compliance with the wastewater treatment operation, maintenance, and notification elements of 6 NYCRR 374.4. Alternatively, the permittee may develop and implement an

outreach program,<sup>28</sup> which informs users of their responsibilities, and collect the “Amalgam Waste Compliance Report for Dental Dischargers”<sup>29</sup> form, as needed, to satisfy the inspection requirements. The permittee must conduct the outreach program at least once every five years and ensure the “Amalgam Waste Compliance Report for Dental Dischargers” are submitted by new users, as necessary. The outreach program could be supported by a subset of site inspections.

3. A file shall be maintained containing documentation demonstrating compliance with 2.b.ii.2)a) above. This file shall be available for review by the Department representatives and copies shall be provided upon request.

b) *Other potential mercury sources*

1. The permittee must maintain an inventory of other *potential mercury sources*.
2. The permittee must inspect other *potential mercury sources* once every five years. Alternatively, the permittee may develop and implement an outreach program which informs users of their responsibilities as *potential mercury sources*. The permittee must conduct the outreach program at least once every five years. The outreach program should be supported by a subset of site inspections.
3. A file shall be maintained containing documentation demonstrating compliance with 2.b.ii.2)b) above. This file shall be available for review by the Department representatives and copies shall be provided upon request.

iii. Systems with CSO & Type II SSO Outfalls – Permittees must prioritize *potential mercury sources* upstream of CSOs and Type II SSOs for mercury reduction activities and/or controlled-release

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<sup>28</sup> For example, the outreach program could include education about sources of mercury and what to do if a mercury source is found.

<sup>29</sup> The form, “Amalgam Waste Compliance Report for Dental Dischargers,” can be found here: [https://www.dec.ny.gov/docs/water\\_pdf/dentalform.pdf](https://www.dec.ny.gov/docs/water_pdf/dentalform.pdf)

- discharge.
- iv. Equipment and Materials – Equipment and materials (e.g., thermometers, thermostats) used by the permittee, which may contain mercury, must be evaluated by the permittee. As equipment and materials containing mercury are updated/replaced, the permittee must use mercury-free alternatives, if possible.
  - v. Bulk Chemical Evaluation – For chemicals, used at a rate which exceeds 1,000 gallons/year or 10,000 pounds/year, the permittee must obtain a manufacturer's certificate of analysis, a chemical analysis performed by a certified laboratory, and/or a notarized affidavit which describes the substances' mercury concentration and the detection limit achieved. If possible, the permittee must only use bulk chemicals utilized in the wastewater treatment process which contain <10 ppb mercury.

*[Use the following for permits with mercury effluent limitations less than or equal to 50 ng/L]*

- c. Annual Status Report - An annual status report must be completed and maintained on site summarizing:
  - i. All MMP monitoring results for the previous year;
  - ii. A list of known and *potential mercury sources*
    - 1) If the permittee meets the criteria for MMP Type IV, the permittee must notify the Department for a permittee-initiated modification;
  - iii. All actions undertaken, pursuant to the control strategy, during the previous year;
  - iv. Actions planned, pursuant to the control strategy, for the upcoming year; and
  - v. Progress towards achieving a dissolved mercury concentration of 0.70 ng/L in the effluent (e.g., summarizing reductions in effluent concentrations as a result of the control strategy implementation and/or installation/modification of a treatment system).

The first annual status report is due in accordance with the Schedule of Additional Submittals. The permittee must maintain a file with all MMP documentation, including the dental forms required by 6 NYCRR 374.4. The file must be available for review by Department representatives and copies must be provided upon request in accordance with 6 NYCRR 750-2.1(i) and 750-2.5(c)(4).

*[Use the following for permits with mercury effluent limitations greater than 50 ng/L]*

- c. Semiannual Status Report - A semiannual status report must be completed and maintained on site summarizing:
  - i. All MMP monitoring results for the previous six months;
  - ii. A list of known and *potential mercury sources*;
    - 1) If the permittee meets the criteria for MMP Type IV, the permittee must notify the Department for a permittee-initiated modification;
  - iii. All actions undertaken, pursuant to the control strategy, during the previous six months;
  - iv. Actions planned, pursuant to the control strategy, for the upcoming six months; and
  - v. Progress towards achieving a dissolved mercury concentration of 0.70 ng/L in the effluent (e.g., summarizing reductions in effluent concentrations as a result of the control strategy implementation and/or installation/modification of a treatment system).

The first semi-annual status report is due in accordance with the Schedule of Additional Submittals. The permittee must maintain a file with all MMP documentation, including the dental forms required by 6 NYCRR 374.4. The file must be available for review by Department representatives and copies must be provided upon request in accordance with 6 NYCRR 750-2.1(i) and 750-2.5(c)(4).

- 3. MMP Modification - The MMP must be modified whenever:
  - a. Changes at the facility, or within the collection system, increase the potential for mercury discharges;
  - b. Effluent discharges exceed the current permit limitation(s); or
  - c. A letter from the Department identifies inadequacies in the MMP.

The Department may use information in the annual or semiannual status reports, as applicable in accordance with 2.c of this MMP, to determine if the permit limitations and MMP Type is appropriate for the facility.

## DEFINITIONS:

Key location – a location within the collection/wastewater system (e.g. including but not limited to a specific manhole/access point, tributary sewer/wastewater connection, or user discharge point) identified by the permittee as a potential mercury source. The permittee may adjust key locations based upon sampling and/or best professional judgement.

Potential mercury source – a source identified by the permittee that may reasonably be expected to have total mercury contained in the discharge. Some potential mercury sources include switches, fluorescent lightbulbs, cleaners, degreasers, thermometers, batteries, hauled wastes, universities, hospitals, laboratories, landfills, Brownfield sites, or raw material storage.

## MERCURY MINIMIZATION PROGRAM (MMP) TYPE II

1. General - The permittee must develop, implement, and maintain a mercury minimization program (MMP), containing the elements set forth below, to reduce mercury effluent levels with the goal of achieving the WQBEL.
2. MMP Elements - The MMP must be a written document and must include any necessary drawings or maps of the facility and/or collection system. Other related documents already prepared for the facility may be used as part of the MMP and may be incorporated by reference. At a minimum, the MMP must include the following elements as described in detail below:
  - a. Monitoring - All mercury outfall monitoring must be conducted using the methods specified in Table 8 of *DOW 1.3.10*. Monitoring at influent and other locations tributary to compliance points may be performed using either USEPA Method 1631 or another sufficiently sensitive method, as approved under 40 CFR Part 136. Monitoring of raw materials, equipment, treatment residuals, and other non-wastewater/non-stormwater substances may be performed using other methods as appropriate. Monitoring must be coordinated so that the results can be effectively compared between locations.

Minimum required monitoring is as follows:

- i. Sewage Treatment Plant Influent & Effluent – The permittee must collect samples at each of these locations in accordance with the minimum frequency specified on the pages of the SPDES permit that contain the mercury effluent limitations.
- ii. Key Locations and Potential Mercury Sources – The permittee must sample *key locations*, chosen to identify *potential mercury sources*, at least annually. Sampling of discharges from dental facilities in compliance with 6 NYCRR 374.4 is not required.
- iii. Hauled Wastes – The permittee must establish procedures for the acceptance of hauled waste to ensure the hauled waste is not a potential mercury source. Loads which may exceed 500 ng/L,<sup>30</sup> must receive approval from the Department prior to acceptance.
- iv. Decreased Monitoring Requirements - As is written in Part III.A.5.c.v.b) of *DOW 1.3.10*, facilities with EEQ at or below 12 ng/L are eligible for the following:
  - 1) Reduced requirements, through a permittee-initiated permit

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<sup>30</sup>A level of 0.2 mg/L (200,000 ng/L) or more is considered hazardous per 40 CFR Part 261.11. 500 ng/L is used here to alert the permittee that there is an unusual concentration of mercury and that it will need to be managed appropriately.

modification

- a) Conduct influent monitoring, sampling semi-annually, in lieu of monitoring within the collection system, such as at *key locations*; and
  - b) Conduct effluent compliance sampling semi-annually.
- 2) If a facility with reduced requirements reports discharges above 12 ng/L for two of four consecutive effluent samples, the Department may undertake a Department-initiated modification to remove the allowance of reduced requirements.
  - 3) Under the decreased permit requirements, the facility must continue to conduct an annual status report, as applicable in accordance with 2.c of this MMP, to determine if any waste streams have changed.
- v. Additional monitoring must be completed as required elsewhere in this permit (e.g., locations tributary to compliance points).
- b. Control Strategy - The control strategy must contain the following minimum elements:
- i. Pretreatment/Sewer Use Law - The permittee must review pretreatment program requirements and the Sewer Use Law (SUL) to ensure it is up-to-date and enforceable with applicable permit requirements and will support efforts to achieve a dissolved mercury concentration of 0.70 ng/L in the effluent.
  - ii. Monitoring and Inventory/Inspections -
    - 1) Monitoring shall be performed as described in 2.a above. As mercury sources are found, the permittee must enforce its sewer use law to track down and minimize these sources.
    - 2) The permittee must inventory and/or inspect users of its system as necessary to support the MMP.
      - a) Dental Facilities
        1. The permittee must maintain an inventory of each dental facility.
        2. The permittee must inspect each dental facility at least once every five years to verify compliance with the wastewater treatment operation, maintenance, and notification elements of 6 NYCRR 374.4. Alternatively, the permittee may develop and implement an outreach program,<sup>31</sup> which informs users of their responsibilities, and collect the

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<sup>31</sup> For example, the outreach program could include education about sources of mercury and what to do if a mercury source is found.

“Amalgam Waste Compliance Report for Dental Dischargers”<sup>32</sup> form, as needed, to satisfy the inspection requirements. The permittee must conduct the outreach program at least once every five years and ensure the “Amalgam Waste Compliance Report for Dental Dischargers” are submitted by new users, as necessary. The outreach program could be supported by a subset of site inspections.

3. A file shall be maintained containing documentation demonstrating compliance with 2.b.ii.2)a) above. This file shall be available for review by the Department representatives and copies shall be provided upon request.

b) *Other potential mercury sources*

1. The permittee must maintain an inventory of other *potential mercury sources*.
2. The permittee must inspect other *potential mercury sources* once every five years. Alternatively, the permittee may develop and implement an outreach program which informs users of their responsibilities as *potential mercury sources*. The permittee must conduct the outreach program at least once every five years. The outreach program should be supported by a subset of site inspections.
3. A file shall be maintained containing documentation demonstrating compliance with 2.b.ii.2)b) above. This file shall be available for review by the Department representatives and copies shall be provided upon request.

iii. Systems with CSO & Type II SSO Outfalls – Permittees must prioritize *potential mercury sources* upstream of CSOs and Type II SSOs for mercury reduction activities and/or controlled-release discharge.

iv. Equipment and Materials – Equipment and materials (e.g., thermometers, thermostats) used by the permittee, which may

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<sup>32</sup> The form, “Amalgam Waste Compliance Report for Dental Dischargers,” can be found here: [https://www.dec.ny.gov/docs/water\\_pdf/dentalform.pdf](https://www.dec.ny.gov/docs/water_pdf/dentalform.pdf)

contain mercury, must be evaluated by the permittee. As equipment and materials containing mercury are updated/replaced, the permittee must use mercury-free alternatives, if possible.

- v. Bulk Chemical Evaluation – For chemicals, used at a rate which exceeds 1,000 gallons/year or 10,000 pounds/year, the permittee must obtain a manufacturer's certificate of analysis, a chemical analysis performed by a certified laboratory, and/or a notarized affidavit which describes the substances' mercury concentration and the detection limit achieved. If possible, the permittee must only use bulk chemicals utilized in the wastewater treatment process which contain <10 ppb mercury.

*[Use the following for permits with mercury effluent limitations less than or equal to 50 ng/L]*

- c. Annual Status Report - An annual status report must be completed and maintained on site summarizing:
  - i. All MMP monitoring results for the previous year;
  - ii. A list of known and *potential mercury sources*
    - 1) If the permittee meets the criteria for MMP Type IV, the permittee must notify the Department for a permittee-initiated modification;
  - iii. All actions undertaken, pursuant to the control strategy, during the previous year;
  - iv. Actions planned, pursuant to the control strategy, for the upcoming year; and
  - v. Progress towards achieving a dissolved mercury concentration of 0.70 ng/L in the effluent (e.g., summarizing reductions in effluent concentrations as a result of the control strategy implementation and/or installation/modification of a treatment system).

The first annual status report is due in accordance with the Schedule of Additional Submittals. The permittee must maintain a file with all MMP documentation, including the dental forms required by 6 NYCRR 374.4. The file must be available for review by Department representatives and copies must be provided upon request in accordance with 6 NYCRR 750-2.1(i) and 750-2.5(c)(4).

*[Use the following for permits with mercury effluent limitations greater than 50 ng/L]*

- c. Semiannual Status Report - A semiannual status report must be completed and maintained on site summarizing:
  - i. All MMP monitoring results for the previous six months;

- ii. A list of known and *potential mercury sources*;
  - 1) If the permittee meets the criteria for MMP Type IV, the permittee must notify the Department for a permittee-initiated modification;
- iii. All actions undertaken, pursuant to the control strategy, during the previous six months;
- iv. Actions planned, pursuant to the control strategy, for the upcoming six months; and
- v. Progress towards achieving a dissolved mercury concentration of 0.70 ng/L in the effluent (e.g., summarizing reductions in effluent concentrations as a result of the control strategy implementation and/or installation/modification of a treatment system).

The first semi-annual status report is due in accordance with the Schedule of Additional Submittals. The permittee must maintain a file with all MMP documentation, including the dental forms required by 6 NYCRR 374.4. The file must be available for review by Department representatives and copies must be provided upon request in accordance with 6 NYCRR 750-2.1(i) and 750-2.5(c)(4).

3. MMP Modification - The MMP must be modified whenever:
- a. Changes at the facility, or within the collection system, increase the potential for mercury discharges;
  - b. Effluent discharges exceed the current permit limitation(s); or
  - c. A letter from the Department identifies inadequacies in the MMP.

The Department may use information in the annual or semiannual status reports, as applicable in accordance with 2.c of this MMP, to determine if the permit limitations and MMP Type is appropriate for the facility.

#### DEFINITIONS:

Key location – a location within the collection/wastewater system (e.g. including but not limited to a specific manhole/access point, tributary sewer/wastewater connection, or user discharge point) identified by the permittee as a potential mercury source. The permittee may adjust key locations based upon sampling and/or best professional judgement.

Potential mercury source – a source identified by the permittee that may reasonably be expected to have total mercury contained in the discharge. Some potential mercury sources include switches, fluorescent lightbulbs, cleaners, degreasers, thermometers, batteries, hauled wastes, universities, hospitals, laboratories, landfills, Brownfield sites, or raw material storage.

## MERCURY MINIMIZATION PROGRAM (MMP) TYPE III

1. General - The permittee must develop, implement, and maintain a mercury minimization program (MMP), containing the elements set forth below, to reduce mercury effluent levels with the goal of achieving the WQBEL.
2. MMP Elements - The MMP must be a written document and must include any necessary drawings or maps of the facility and/or collection system. Other related documents already prepared for the facility may be used as part of the MMP and may be incorporated by reference. At a minimum, the MMP must include the following elements as described in detail below:
  - a. Monitoring - All mercury outfall monitoring must be conducted using the methods specified in Table 8 of *DOW 1.3.10*. Monitoring at influent and other locations tributary to compliance points may be performed using either USEPA Method 1631 or another sufficiently sensitive method, as approved under 40 CFR Part 136. Monitoring of raw materials, equipment, treatment residuals, and other non-wastewater/non-stormwater substances may be performed using other methods as appropriate. Monitoring must be coordinated so that the results can be effectively compared between locations.

Minimum required monitoring is as follows:

- i. Plant Influent & Effluent – The permittee must collect samples at each of these locations in accordance with the minimum frequency specified on the pages of the SPDES permit that contain the mercury effluent limitations.
- ii. Key Locations and Potential Mercury Sources – The permittee must sample *key locations*, chosen to identify *potential mercury sources*, at least annually.
- iii. Decreased Monitoring Requirements - As is written in Part III.A.5.c.v.b) of *DOW 1.3.10*, facilities with EEQ at or below 12 ng/L are eligible for the following:
  - 1) Reduced requirements, through a permittee-initiated permit modification
    - a) Conduct influent monitoring, sampling semi-annually, in lieu of monitoring within the collection system, such as at *key locations*; and
    - b) Conduct effluent compliance sampling semi-annually.
  - 2) If a facility with reduced requirements reports discharges above 12 ng/L for two of four consecutive effluent samples, the Department may undertake a Department-initiated

modification to remove the allowance of reduced requirements.

- 3) Under the decreased permit requirements, the facility must continue to conduct an annual status report, as applicable in accordance with 2.c of this MMP, to determine if any waste streams have changed.
- iv. Additional monitoring must be completed as required elsewhere in this permit (e.g., locations tributary to compliance points).
- b. Control Strategy - The control strategy must contain the following minimum elements:
  - i. Monitoring and Inventory/Inspections -
    - 1) Monitoring shall be performed as described in 2.a above. As mercury sources are found, the permittee must track down and minimize these sources.
    - 2) The permittee must inventory and/or inspect users of its system as necessary to support the MMP.
      - a) *Potential mercury sources*
        1. The permittee must maintain an inventory of *potential mercury sources*.
        2. The permittee must inspect *potential mercury sources* once every five years. Alternatively, the permittee may develop and implement an outreach program<sup>33</sup> which informs users of their responsibilities as *potential mercury sources*. The permittee must conduct the outreach program at least once every five years. The outreach program should be supported by a subset of site inspections.
        3. A file shall be maintained containing documentation demonstrating compliance with 2.b.i.2)a) above. This file shall be available for review by the Department representatives and copies shall be provided upon request.
  - ii. Equipment and Materials – Equipment and materials (e.g., thermometers, thermostats) used by the permittee, which may contain mercury, must be evaluated by the permittee. As equipment and materials containing mercury are updated/replaced, the permittee must use mercury-free alternatives, if possible.
  - iii. Bulk Chemical Evaluation – For chemicals, used at a rate which

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<sup>33</sup> For example, the outreach program could include education about sources of mercury and what to do if a mercury source is found.

exceeds 1,000 gallons/year or 10,000 pounds/year, the permittee must obtain a manufacturer's certificate of analysis, a chemical analysis performed by a certified laboratory, and/or a notarized affidavit which describes the substances' mercury concentration and the detection limit achieved. If possible, the permittee must only use bulk chemicals utilized in the wastewater treatment process which contain <10 ppb mercury.

*[Use the following for permits with mercury effluent limitations less than or equal to 50 ng/L]*

- c. Annual Status Report - An annual status report must be completed and maintained on site summarizing:
  - i. All MMP monitoring results for the previous year;
  - ii. A list of known and *potential mercury sources*
    - 1) If the permittee meets the criteria for MMP Type IV, the permittee must notify the Department for a permittee-initiated modification;
  - iii. All actions undertaken, pursuant to the control strategy, during the previous year;
  - iv. Actions planned, pursuant to the control strategy, for the upcoming year; and
  - v. Progress towards achieving a dissolved mercury concentration of 0.70 ng/L in the effluent (e.g., summarizing reductions in effluent concentrations as a result of the control strategy implementation and/or installation/modification of a treatment system).

The first annual status report is due in accordance with the Schedule of Additional Submittals. The permittee must maintain a file with all MMP documentation, including the dental forms required by 6 NYCRR 374.4. The file must be available for review by Department representatives and copies must be provided upon request in accordance with 6 NYCRR 750-2.1(i) and 750-2.5(c)(4).

*[Use the following for permits with mercury effluent limitations greater than 50 ng/L]*

- c. Semiannual Status Report - A semiannual status report must be completed and maintained on site summarizing:
  - i. All MMP monitoring results for the previous six months;
  - ii. A list of known and *potential mercury sources*
    - 1) If the permittee meets the criteria for MMP Type IV, the permittee must notify the Department for a permittee-initiated modification;

- iii. All actions undertaken, pursuant to the control strategy, during the previous six months;
- iv. Actions planned, pursuant to the control strategy, for the upcoming six months; and
- v. Progress towards achieving a dissolved mercury concentration of 0.70 ng/L in the effluent (e.g., summarizing reductions in effluent concentrations as a result of the control strategy implementation and/or installation/modification of a treatment system).

The first semi-annual status report is due in accordance with the Schedule of Additional Submittals. The permittee must maintain a file with all MMP documentation, including the dental forms required by 6 NYCRR 374.4. The file must be available for review by Department representatives and copies must be provided upon request in accordance with 6 NYCRR 750-2.1(i) and 750-2.5(c)(4).

3. MMP Modification - The MMP must be modified whenever:
  - a. Changes at the facility increase the potential for mercury discharges;
  - b. Effluent discharges exceed the current permit limitation(s); or
  - c. A letter from the Department identifies inadequacies in the MMP.

The Department may use information in the annual or semiannual status reports, as applicable in accordance with 2.c of this MMP, to determine if the permit limitations and MMP Type is appropriate for the facility.

#### DEFINITIONS:

Key location – a location within the collection/wastewater system (e.g. including but not limited to a specific manhole/access point, tributary sewer/wastewater connection, or user discharge point) identified by the permittee as a potential mercury source. The permittee may adjust key locations based upon sampling and/or best professional judgement.

Potential mercury source – a source identified by the permittee that may reasonably be expected to have total mercury contained in the discharge. Some potential mercury sources include switches, fluorescent lightbulbs, cleaners, degreasers, thermometers, batteries, hauled wastes, universities, hospitals, laboratories, landfills, Brownfield sites, or raw material storage.

## MERCURY MINIMIZATION PROGRAM (MMP) TYPE IV

1. General - The permittee must develop, implement, and maintain a mercury minimization program (MMP), containing the elements set forth below, to reduce mercury effluent levels with the goal of achieving the WQBEL.
2. MMP Elements - The MMP must be a written document and must include any necessary drawings or maps of the facility and/or collection system. Other related documents already prepared for the facility may be used as part of the MMP and may be incorporated by reference. At a minimum, the MMP must include the following elements<sup>34</sup> as described in detail below:
  - a. Conditional Exclusion Certification - A certification (Appendix D of *DOW 1.3.10*), signed in accordance with 750-1.8 Signature of SPDES forms, must be submitted once every five (5) years to the Regional Water Engineer and to the Bureau of Water Permits certifying that the facility is neither a mercury source nor receives flows from a mercury source. Criteria to determine if a facility has a mercury source are as follows:
    - The facility is or receives discharge from 1) individually permitted combined sewer overflow (CSOs)<sup>35</sup> communities and/or 2) Type II sanitary sewer overflow (SSO)<sup>36</sup> facilities;
    - One or more effluent samples which exceed 12 ng/L, including samples taken as a result of the SPDES application process;
    - 1) Internal or tributary waste stream samples exceed the GLCA effluent limitation **AND** 2) the final effluent samples are less than the GLCA due primarily to dilution by uncontaminated or less contaminated waste streams. Both components of this criterion may include samples taken as a result of the SPDES application process;
    - A permit application or other information indicates that mercury is handled on site and could be discharged through outfalls;
    - Outfalls which contain legacy mercury contamination;
    - The facility's collection system receives discharges from a dental and/or categorical industrial user (CIU)<sup>37</sup> that may discharge mercury;
    - The facility accepts hauled wastes; or,

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<sup>34</sup>Neither monitoring nor outreach is not required for facilities meeting the criteria for MMP Type IV, but monitoring and/or outreach can be included in the permittee's control strategy.

<sup>35</sup> CSO permits are included under the 05 and 07 permit classifications.

<sup>36</sup> These are overflow retention facilities (ORFs) and are included under the 05 and 07 permit classifications.

<sup>37</sup> CIUs include those listed under Federal Regulation in 40 CFR Part 400.

- The facility is defined as a categorical industry that may discharge mercury. This may also include dentists, universities, hospitals, or laboratories which have their own SPDES permit.
- b. Control Strategy - The control strategy must contain the following minimum elements:
- i. Equipment and Materials – Equipment and materials (e.g., thermometers, thermostats) used by the permittee, which may contain mercury, must be evaluated by the permittee. As equipment and materials containing mercury are updated/replaced, the permittee must use mercury-free alternatives, if possible.
  - ii. Bulk Chemical Evaluation – For chemicals, used at a rate which exceeds 1,000 gallons/year or 10,000 pounds/year, the permittee must obtain a manufacturer’s certificate of analysis, a chemical analysis performed by a certified laboratory, and/or a notarized affidavit which describes the substances’ mercury concentration and the detection limit achieved. If possible, the permittee must only use bulk chemicals utilized in the wastewater treatment process which contain <10 ppb mercury.
- c. Annual Status Report - An annual status report must be completed and maintained on site summarizing:
- i. Review of criteria to determine if the facility has a potential mercury source;
    - a. If the permittee no longer meets the criteria for MMP Type IV, the permittee must notify the Department for a permittee-initiated permit modification;
  - ii. All actions undertaken, pursuant to the control strategy, during the previous year; and
  - iii. Actions planned, pursuant to the control strategy, for the upcoming year.

The first annual status report is due in accordance with the Schedule of Additional Submittals. The permittee must maintain a file with all MMP documentation, including the dental forms required by 6 NYCRR 374.4. The file must be available for review by Department representatives and copies must be provided upon request in accordance with 6 NYCRR 750-2.1(i) and 750-2.5(c)(4).

3. MMP Modification - The MMP must be modified whenever:
  - a. Changes at the facility, or within the collection system, increase the potential for mercury discharges;
  - b. A letter from the Department identifies inadequacies in the MMP.

The Department may use information in the annual status reports, in accordance with 2.c of this MMP, to determine if the permit limitations and MMP Type is appropriate for the facility.

#### DEFINITIONS:

Potential mercury source – a source identified by the permittee that may reasonably be expected to have total mercury contained in the discharge. Some potential mercury sources include switches, fluorescent lightbulbs, cleaners, degreasers, thermometers, batteries, hauled wastes, universities, hospitals, laboratories, landfills, Brownfield sites, or raw material storage.

# APPENDIX D. CONDITIONAL EXCLUSION CERTIFICATION



**Department of  
Environmental  
Conservation**

## CONDITIONAL EXCLUSION CERTIFICATION for Exclusion from Mercury Permit Limitations

Instructions: Complete this Conditional Exclusion Certification.

Submit completed form to  
the Regional Water Engineer and DOWmercury@dec.ny.gov.

### I. Permittee/Facility Information

Permittee/Facility Name:

Mailing Address:

City/State/Zip:

Contact Name:

Phone No.:

Facility Name:

Street Address:

City/State/Zip:

County:

Latitude:

Longitude:

SIC Code:

Is there a Conditional Exclusion Certification  
currently on file with the Department?

Yes  No

Enter SPDES ID #: NY \_\_\_\_\_

### II. Exclusion Checklist

Does the facility have any of the following mercury sources? Please check either "Yes" or "No" in the appropriate box. If you answer "Yes" to any of these questions (1) through (8), you are not eligible for the conditional exclusion.

YES

NO

1	The facility is or receives discharge from 1) individually permitted combined sewer overflow (CSOs) communities and/or 2) Type II sanitary sewer overflow (SSO) facilities		
2	One or more effluent samples which exceed 12 ng/L, including samples taken as a result of the SPDES application process		
3	1) Internal or tributary waste stream samples exceed the GLCA effluent limitation AND 2) the final effluent samples are less than the GLCA due primarily to dilution by uncontaminated or less contaminated waste streams. Both components of this criterion may include samples taken as a result of the SPDES application process		
4	A permit application or other information indicates that mercury is handled on site and could be discharged through outfalls		
5	Outfalls which contain legacy mercury contamination		
6	The facility's collection system receives discharges from a dental and/or categorical industrial user (CIU) that may discharge mercury		
7	The facility accepts hauled wastes		
8	The facility is defined as a categorical industry that may discharge mercury. This may also include dentists, universities, hospitals, or laboratories which have their own SPDES permit		

### III. Certification

I certify under penalty of law that I have read and understand the eligibility requirements for claiming a condition of "exclusion" and obtaining an exclusion from mercury permit limitations. I certify under penalty of law that there are no mercury sources at and/or discharging to the facility. I understand that I am obligated to submit a conditional exclusion certification form once every five years to the SPDES permitting authority. I understand that I must allow the SPDES permitting authority to perform inspections to confirm the condition of exclusion and to make such inspection reports publicly available upon request.

Printed Name:

Title/Position:

Signature:

Date: