



**WATER BUREAU
POLICY AND PROCEDURES**

NUMBER: WB-016
SUBJECT: CALCULATION OF LEVEL CURRENTLY ACHIEVABLE (LCA) FOR MERCURY IN PROPOSED NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS
EFFECTIVE DATE: OCTOBER 1, 2008
REVISION DATE: (5-YEAR REVIEW FREQUENCY)

PAGE: 1 OF 6

ISSUE:

This policy establishes the process that the Water Bureau (WB) will use to develop discharge-specific LCAs for mercury to be included in NPDES permits when a variance will be authorized through issuance of the permit.

AUTHORITY:

Rule 1103, Variances, of the Part 4 Rules, Water Quality Standards, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

DEFINITIONS:

Level Currently Achievable (LCA) – the effluent limitation (for mercury) that a permittee is able to meet at the time the variance is granted.

POLICY:

Discharge Specific LCA Calculation Approach (See Attachment 1 for examples)

1. Calculate the average projected effluent quality (PEQ) using either the R 323.1211(3)(a) (10 or more representative data points) or (3)(b) (fewer than 10 representative data points) approach with individual (vs. twelve month rolling average [TMRAV]) mercury data points. Round the PEQ value up to the next whole number. If the average PEQ is 10 ng/l or less, then the PEQ is the LCA. If the average PEQ is greater than 10 ng/l, then proceed to Step 2.

This step uses the average rather than maximum PEQ because using the maximum PEQ would result in higher LCAs reflective of high outlier mercury data points.

Based on experience to date, available data indicates that the vast majority of mercury discharges will fall into this category for LCA calculation.

2. If the PEQ value calculated in Step 1 is greater than 10 ng/l, then review the number of data points available for the facility.

This policy provides guidance to staff regarding the implementation and interpretation of laws administered by the DEQ. It is merely explanatory, does not affect the rights of or procedures and practices available to the public, and it does not have the force and effect of law.

**WATER BUREAU
POLICY AND PROCEDURES**

NUMBER: WB-016

SUBJECT: Calculation of LCA for Mercury in Proposed NPDES Permits

EFFECTIVE DATE: October 1, 2008

PAGE: 2 of 6

REVISION DATE:

- a. If data representative of a 12 month period are available to calculate at least one TMRV, compute the LCA using the following approach:
 - i. If there are 10 or more TMRVs, then calculate the PEQ using the TMRV data points following the reasonable potential approach described in R 323.1211(3)(a). Compare the maximum PEQ to the highest TMRV. (The maximum PEQ is used because the calculation process uses averages, e.g. TMRVs.) This approach may result in a PEQ lower than the highest TMRV, therefore, the LCA is the higher of the two values. Round the LCA up to the next whole number.
 - ii. If there are less than 10 TMRVs, then calculate the LCA using the individual data points following the reasonable potential calculation process described in R 323.1211(3)(b). Compare the average PEQ to each TMRV. (The average PEQ is used because the calculation process uses individual, rather than TMRV, data points.) The LCA is the higher of the PEQ or highest TMRV, rounded up to the next whole number.
- b. If data representative of a 12 month period are not available to calculate at least one TMRV, then compute the LCA using the following approach:
 - i. If each value is less than 10 ng/l, then set the LCA at 10 ng/l. This value will function as a "cap" because the vast majority of facilities in Michigan are able to meet this level. The 10 ng/L cap will prevent unnecessarily high LCAs that may result from the R323.1211(3)(b) reasonable potential approach for datasets with less than 10 individual data points.
 - ii. If any value is equal to or greater than 10 ng/l, then MDEQ and/or the permittee will develop the LCA using site-specific considerations, including evaluation of the raw data, facility treatment type, any mercury issues in the receiving water (e.g. fish consumption advisory), and facility and receiving water flows. Available information and experience to date indicate that this situation will be very rare. The LCA developed under this step will need to be submitted to the U.S. Environmental Protection Agency (USEPA) for approval prior to NPDES permit issuance.

Other Considerations

The Michigan Department of Environmental Quality (MDEQ) and NPDES permittees are not bound by this procedure as there may be situations where other LCAs are appropriate. However, it is the MDEQ's intent to follow this procedure in most instances. LCAs derived according to Steps 1, 2.a. and 2.b.i. have the approval of the USEPA without submitting each LCA for approval.

Specific situations may arise (for example, upon request by the permittee) when the MDEQ would include an LCA in a permit that is lower than what would result from this process. In addition, permittees may develop and propose an LCA that is different from what would result from this

This policy provides guidance to staff regarding the implementation and interpretation of laws administered by the DEQ. It is merely explanatory, does not affect the rights of or procedures and practices available to the public, and it does not have the force and effect of law.

**WATER BUREAU
POLICY AND PROCEDURES**

NUMBER: WB-016
SUBJECT: Calculation of LCA for Mercury in Proposed NPDES Permits
EFFECTIVE DATE: October 1, 2008 **PAGE:** 3 of 6
REVISION DATE:

process, which MDEQ would evaluate on a case-by-case basis. If the MDEQ determines the LCA to be appropriate, we would submit the proposed LCA to the USEPA for approval on a case-by-case basis.

Each LCA included in a permit will be subject to notice-and-comment during the public comment period on that permit.

REFERENCES:

REFERENCE TO BUREAU PROGRAMS: The WB programs and functions affected by this policy are indicated in **bold**.

Bureau programs:

| | |
|--|--|
| Groundwater Conflict Resolution | Public Water System Supervision |
| Groundwater Management Program | Security Program |
| On-Site Sewage Program | Septage Program |
| Campground Permit and Inspection Program | Public Swimming Pools Program |
| Fish Contaminant Monitoring | Groundwater Discharge Permit Program |
| NPDES (non-storm water) Program | Biosolids Program |
| Surface Water Ambient Monitoring Program | Inland Lakes Management |
| Nonpoint Source Control Program | Wastewater Facility Permits |
| Storm Water Program (NPDES) | Surface Water Restoration and Protection |

METHOD OF DISTRIBUTION: E-mail, Intranet

PROCEDURE:

Responsibility

Action

Surface Water Assessment Section (SWAS) staff

Calculate discharge specific LCA as outlined under "Policy;" steps 1, 2.a. and 2. b.i., and in consideration of applicable provisions of Rule 1103; submit proposed LCA to Permits Section (PS).

PS staff

Follow standard process for NPDES permit issuance/denial/amendment.

OR

Permittee or WB staff

Propose alternative method for calculating discharge specific LCA as outlined under "Policy" Step 2.b.ii or Other Considerations.

SWAS staff

Select alternative method and calculate

This policy provides guidance to staff regarding the implementation and interpretation of laws administered by the DEQ. It is merely explanatory, does not affect the rights of or procedures and practices available to the public, and it does not have the force and effect of law.

**WATER BUREAU
POLICY AND PROCEDURES**

NUMBER: WB-016
SUBJECT: Calculation of LCA for Mercury in Proposed NPDES Permits
EFFECTIVE DATE: October 1, 2008 **PAGE:** 4 of 6
REVISION DATE:

discharge specific LCA according to alternative method and in consideration of applicable provisions of Rule 1103; draft memo to PS including the proposed LCA and an explanation of and justification for the alternative calculation method.

SWAS staff

Submit proposed LCA and an explanation of and justification for the alternative calculation method to WB treatment technology expert(s) for consideration.

WB treatment technology expert(s)

Provides feedback to SWAS on treatment issues related to the proposed LCA.

SWAS staff

Revise proposed LCA as appropriate; submit proposed LCA and an explanation of and justification for the alternative calculation method, including any treatment technology issues to PS.

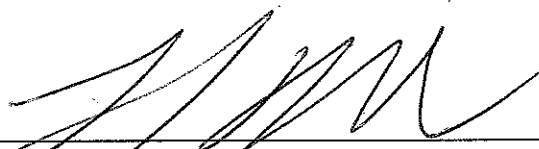
PS Chief

When agrees with LCA; seeks USEPA review and approval of LCA.

PS staff

Follows standard process for NPDES permit issuance/denial/amendment; permit issuance signifies approval of LCA.

APPROVED:



Frank Baldwin, Acting Chief
Water Bureau

DATE:

8/14/08

LAST REVIEWED BY:

Name
Title

DATE:

This policy provides guidance to staff regarding the implementation and interpretation of laws administered by the DEQ. It is merely explanatory, does not affect the rights of or procedures and practices available to the public, and it does not have the force and effect of law.

Attachment 1
Example LCAs Using Mercury Draft Policy Approach

Refer to example data in Appendix A.

Step 1: Calculate the LCA using individual data points and average PEQ

- a. If average PEQ is less than or equal to 10 ng/l, LCA = PEQ

Examples, referring to data in Appendix A:

Facility 1 LCA = 10

Facility 2 LCA = 10

Facility 4 LCA = 8

Facility 5 LCA = 9

Facility 8 LCA = 2

- b. If PEQ is greater than 10 ng/l, proceed to Step 2.

Step 2: If PEQ is greater than 10 ng/l, review number of data points available.

- a. If data representative of a 12 month period are available to calculate at least one TMRAV:

- i. If 10 or more TMRAVs, select the higher of the maximum PEQ or maximum TMRAV.

Example, Facility 3 LCA = 15

- ii. If less than 10 TMRAVs, select the higher of the average PEQ or maximum TMRAV.

Example, Facility 6 LCA = 24

- b. If data representative of a 12 month period are not available to calculate one TMRAV, compare raw data to 10 ng/l.

- i. If each value is less than 10 ng/l, set LCA at 10 ng/l

No example

- ii. If any value is greater than or equal to 10 ng/l, develop LCA using site specific considerations.

Example, Facility 7

**Appendix A
Example Data**

| Facility | MGD | Actual N (quantified/ non quantified) | PEQ Actual (average) | High Actual | TMRAV N | PEQ TMRAV (max) | High TMRAV | LCA |
|-----------------|------------|--|-------------------------------------|------------------------|--------------------|--------------------------------|-----------------------|------------|
| Facility 1 | 930 | 70/0 | 9.9 | 42 | 24 | 9.9 | 9.3 | 10 |
| Facility 2 | 61.1 | 63/0 | 9.7 | 30 | 22 | 3.7 | 3.5 | 10 |
| Facility 3 | 6.2 | 33/0 | 13 | 61 | 22 | 15 | 14 | 15 |
| Facility 4 | 6 | 1/3 | 7.5 | 2.9 | 0 | | | 8 |
| Facility 5 | 8 | 1/0 | 8.2 | 1.3 | 0 | | | 9 |
| Facility 6 | 58.7 | 12/0 | 24 | 74 | 1 | 110 | 18 | 24 |
| Facility 7 | | 7/0 | 21 | 11 | 0 | | | *TBD |
| Facility 8 | 51.1 | 16/11 | 1.3 | 4 | 16 | 1.5 | 1.5 | 2 |

*To be determined following Step 2.a.ii.