



JOHN ENGLER, Governor

**DEPARTMENT OF ENVIRONMENTAL QUALITY**

*"Better Service for a Better Environment"*

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RUSSELL J. HARDING, Director

REPLY TO:

SURFACE WATER QUALITY DIVISION  
KNAPPS CENTRE  
PO BOX 30273  
LANSING MI 48909-7773

September 12, 2001

Ms. Jo Lynn Traub, Director  
Water Division  
United States Environmental Protection Agency  
Region 5  
77 West Jackson Boulevard (W-15J)  
Chicago, Illinois 60604-3590

Dear Ms. Traub:

On February 8, 2000, I sent you notice that the Michigan Department of Environmental Quality (MDEQ) was implementing the enclosed Mercury Permitting Strategy (Strategy). This Strategy called for a reevaluation of its key concepts prior to the development of Fiscal Year (FY) 2002 permits based on any low level mercury data generated by National Pollutant Discharge Elimination System (NPDES) permittees subsequent to the implementation of the Strategy. This is to update you on the implementation of the Strategy in Michigan and notify you of our intent to continue its use.

In general, this Strategy has been well received and included:

- A phase-in of the new United States Environmental Protection Agency (USEPA) Method 1631 to allow for laboratory capability to be developed. This new method has a quantification level less than the water quality-based effluent limit (WQBEL) for mercury.
- A multiple discharger variance for existing facilities not meeting the WQBEL of 1.3 nanograms per liter (ng/l). The MDEQ had determined, pursuant to Michigan's R 323.1103(9), that multiple discharger variances were necessary to prevent widespread noncompliance during implementation of Method 1631.
- A level currently achievable (LCA) of 30 ng/l, along with the requirement for a Pollutant Minimization Program (PMP) for mercury, to ensure progress to meet the WQBEL. The MDEQ concluded that, in general, source control rather than end-of-pipe treatment for mercury is the most cost-effective method to reduce mercury loadings to achieve water quality standards.

Laboratory capabilities have improved and are now much more available for facilities needing analysis. Three laboratories in Michigan are now running Method 1631. In addition, the MDEQ Environmental Laboratory is now accepting samples for low level analysis using Method 1631.

A limited amount of low level mercury data has been collected from NPDES permit applicants. Based on preliminary data from 15 facilities with quantifiable results, the multiple discharger variance concept is still necessary; however, most dischargers can meet the generic LCA of

30 ng/l. Only one industrial facility reported a mercury effluent concentration over this level, and the Strategy has the flexibility to deal with these types of issues. The municipal publicly owned treatment works results were particularly encouraging, averaging 2.7 ng/l, as compared to the water quality standard of 1.3 ng/l.

Based on our reevaluation, we intend to continue use of the Strategy, specifically those actions applicable to the FY 2001 permits, until additional information indicates the need for a change. We will continue to submit individual permits with variances drafted consistent with this Strategy to your agency for review.

If you or your staff have any questions with our approach, please contact Mr. William Creal, Great Lakes and Environmental Assessment Section, at 517-335-4181, or you may contact me.

Sincerely,

David A. Hamilton, Chief  
Surface Water Quality Division  
517-335-4176

dah:wc:ls

cc: Mr. William McCracken, MDEQ  
Mr. James Grant, MDEQ  
Mr. William Creal, MDEQ

Mercury Permitting Strategy  
Implementation of Method 1631  
February 2000

## Background

Point source mercury discharges are currently permitted through the National Pollutant Discharge Elimination System (NPDES) permit program consistent with R 323.1213 because the water quality-based effluent limits (WQBELs) for mercury have been less than the quantification level for the most sensitive method promulgated by the United States Environmental Protection Agency (USEPA). R 323.1213 requires that the actual WQBEL, as calculated, be included in the permit. For purposes of compliance assessment, the permit also specifies the use of Method 245.1 with a quantification level of 200 nanograms per liter (ng/l). If effluent samples are less than 200 ng/l of mercury, the permittee was considered in compliance for the period that the sample represented if their pollutant minimization program (PMP) was being fully performed. The PMP is required by R 323.1213 for each toxic substance with a WQBEL below the quantification level (QL).

The USEPA promulgated a new method (Method 1631, Revision B) for measuring mercury in water on July 8, 1999. The method was published as a revision of 40 CFR 136 in the June 8, 1999 Federal Register, Volume 64, No. 109, pp. 30417-30434.

Method 1631 substantially increases measurement sensitivity for mercury in water. The quantification level for the method is 0.5 ng/l, which is 400 times more sensitive than Method 245.1. It is the first USEPA promulgated method to enable the measurement of mercury at levels lower than the Water Quality Standards (WQS). Michigan's WQS in Rule 323.1057 for mercury is 1.3 ng/l, which is based on protection of wildlife. Because Method 1631 will allow for mercury to be measured at quantifiable levels in point source discharges less than the WQS, mercury no longer fits the conditions to be regulated under R 323.1213 and a new permitting strategy is necessary.

The strategy presented in this document is the Michigan Department of Environmental Quality's (MDEQ's) approach to implementing Method 1631 in NPDES permits for FY2000 and FY2001 where NPDES permit limits are developed following the Part 8 rules. The draft strategy was sent to all NPDES permittees with mercury limits, plus five key stakeholder groups: Michigan United Conservation Clubs, National Wildlife Federation, Michigan Manufacturers Association, Michigan Chamber of Commerce, and Michigan Municipal League. A meeting was scheduled these stakeholder groups on December 13, 1999, and the availability of the draft strategy was also given in the December 20, 1999 MDEQ Calendar. A summary of the comments and responses is in Attachment 1. This strategy will be re-evaluated prior to development of the FY2002 permits.

## Preliminary Results Using Low Level Mercury Techniques

Low-level mercury analyses conducted to date indicate that the level of mercury in many point source discharges can be expected to routinely exceed WQBELs (Table 1). Detroit WWTP effluent mercury concentrations were found to exceed the current Outfall 049 effluent WQBEL (1.8 ng/l) by an order of magnitude (December 1998). The average of 44 samples taken over a six month period was 21 ng/l. In Maine, 83 of 85 effluents sampled exceeded the Michigan WQS (mean value for 75 POTWs was 11 ng/l; mean value for ten industries was 24 ng/l; 1998 data). All effluents tested during a 1998 USEPA Method 1631 application study exceeded the Michigan WQS of 1.3 ng/l (mean value for four POTWs was 10 ng/l; mean value for seven industries was 21 ng/l). Although three of four Michigan POTW effluents tested during a 1994 USEPA study met the Michigan WQS (all three <0.24 ng/l), five of the nine Great Lakes states' effluents tested during the study exceeded 1.3 ng/l (range of exceeding values was 2.7-36 ng/l).

Low-level mercury analyses conducted to date also suggest that many of the major Michigan Great Lakes tributaries exceed the WQS for mercury of 1.3 ng/l. Mercury levels in excess of 1.3 ng/l were found for all Lake Superior tributaries sampled in 1992-1993 (nine rivers; mean value was 7.1 ng/l); six of seven Lake Michigan tributaries sampled in 1994-1995 (mean value was 7.2 ng/l); and six of seven Lake Huron-Lake Erie tributaries sampled in 1998 (mean value was 3.7 ng/l).

Existing data (1998 samples) suggest that upper Great Lakes open water mercury concentrations are less than the tributaries, although the database is small. Concentrations were low in Traverse Bay (0.26 ng/l), and Saginaw Bay levels were just above the WQS of 1.3 ng/l (2.4 ng/l). Connecting channel concentrations were below the WQS (St. Mary's River mean was 1.0 ng/l; St. Clair River mean was 1.0 ng/l) until the head of the Detroit River (1.6 ng/l). Mercury concentrations increased substantially by the Detroit River mouth (5.5 ng/l).

#### Other Great Lakes States Strategies for Implementation of the New Method

Other Great Lakes states have been contacted and none have developed a final plan for implementing the new mercury method in NPDES permits; however, all states have initiated actions on the issue. Those states contacted include Illinois, Indiana, Minnesota, Ohio, Pennsylvania, and Wisconsin. Two states were able to share their actions to date. Ohio is developing a guidance document to implement the multiple discharger mercury variance which is contained in their Great Lakes Initiative rules now that the new method from the USEPA has been promulgated. If Ohio facilities can meet a 12 ng/l limit for mercury, then these facilities can apply for the special mercury variance and the demonstration requirements to show the economic hardship are waived. Minnesota has several facilities with current permits that require additional testing or monitoring for mercury in their effluent using Method 1631 but no permit limits for mercury that require Method 1631 for compliance assessment. Although Minnesota has no state laboratory currently available, they have arranged with outside laboratories to run Method 1631. Facilities that are mandated to use Method 1631 for monitoring in their permits have been shipping their samples to west coast laboratories for low level mercury analysis.

#### Method 1631 in NPDES Permits

Several factors were considered in developing this proposed implementation strategy for the use of Method 1631 in NPDES permits. These include:

1. The USEPA's promulgation of Method 1631 authorizes but does not require use of this method in all situations for compliance monitoring. However, when low level measurement sensitivity is necessary to assess compliance with a mercury WQBEL, the USEPA expects Method 1631 will be used.
2. Michigan is a state authorized to administer the NPDES program, and must require the use of methods listed in 40 CFR 136, including Method 1631 for compliance monitoring. The USEPA regulations do not require that permits be reopened to include a new analytical method. Instead, states have the option to reopen the permit, or wait until the permit is reissued to include a new, more sensitive method where applicable.
3. Method 1631 requires the use of clean laboratory techniques to preclude contamination at the low levels necessary for mercury determination. Presently, there are relatively few laboratories that have the expertise and infrastructure available to conduct analyses using Method 1631. However, as demand increases and familiarity with the method and techniques increases, laboratory capacity is expected to increase. The MDEQ's laboratory anticipates the purchase of a low level mercury analyzer and availability of this analysis in FY2000.
4. R 323.1201 indicates that Michigan does not intend to require extraordinary end-of-pipe treatment to meet the low mercury WQBELs, unless it is determined to be the most

cost-effective means or only means to achieve the WQBEL. Instead, Michigan is committed to and strongly encourages the use of pollution prevention, source control, and other waste minimization programs to achieve low level WQBELs.

5. Michigan develops WQBELs for mercury following the requirements of the Part 8 rules. In this approach, a permit limit is needed if a determination is made that mercury is being discharged at a level that has the reasonable potential to cause or contribute to an exceedance of the mercury WQS. This determination requires the use of representative facility specific effluent samples for mercury.
6. At this time, there are 38 individual NPDES permits that contain mercury limits. As previously noted, these permits treated the mercury WQBEL as less than quantifiable and subject to the requirements put forth in R 323.1213. With the availability of Method 1631, which has a quantification level lower than the mercury WQS, mercury will no longer fit the conditions to be regulated under R 323.1213 when these permits are reissued.
7. Based on existing information, there is a very high likelihood that, at this time, most facilities with mercury in their discharge will not be able to comply with the mercury WQBEL in a cost effective manner due to the presence of ubiquitous mercury.
8. Available information using low-level mercury analyses indicates that over 90 percent of all discharges are less than 30 ng/l (see Table 1).

#### Proposed Strategy

Based on consideration of the factors above, the MDEQ has decided to invoke the multiple discharger variance (MDV) provision in subrule (9) of R 323.1103 for use in the FY2000 and FY2001 permit issuances for reviewing individual municipal and industrial permits. The MDEQ believes this decision is appropriate because of the ubiquitous nature of high background mercury levels in Michigan and the widespread compliance problems that Method 1631 will surface. Immediate enforcement of a 1.3 ng/l WQBEL for mercury would force end-of-pipe treatment at many existing facilities which may be extraordinary or beyond that which would be necessary if not for the low mercury limitation. This end-of-pipe treatment may result in an unreasonable economic burden for these permittees. As stated in R 323.1201, the MDEQ is committed to the use of pollution prevention, source control, and other waste minimization programs to achieve compliance with these types of low WQBELs. Where a reasonable potential analysis indicates that a mercury WQBEL is necessary in a permit, the MDV will require that a limit for mercury be set at a level currently achievable (LCA) and that reasonable progress be made during the term of the permit toward achieving the WQBEL. A Pollutant Minimization Program will be included in the permit to address the reduction efforts for mercury. For the MDV, the MDEQ has determined that a value of 30 ng/l as a rolling 12-month average will be used as the LCA for the FY2000 and FY2001 permit issuances. Dischargers which desire a higher LCA will need to submit representative data using Method 1631 covering a 12-month period.

Laboratory capability for Method 1631 is a valid concern. Therefore, for FY2000 permits, this strategy will include a one-year period from permit issuance before the requirement to use Method 1631 is effective. However, dischargers will be encouraged to use Method 1631 during the year 2000 if laboratory capacity exists. This action will establish the need and laboratory capability will follow. Issues regarding the availability of laboratories will be addressed on a case-by-case basis.

The following specific actions are proposed for NPDES permits issued during FY2000 and FY2001:

#### **For reissuance of permits with existing mercury limits:**

#### FY2000 Permits

- For the first two years of the permit, set the mercury limit at a not to be exceeded value of 200 ng/l, based on the present permit compliance level. Require monitoring in Year 1 recommending Method 1631 if laboratory capacity is available, but allowing Method 245.1 if not. In Year 2, require monitoring using Method 1631.
- In Year 3 and the remainder of the permit, set the mercury limit at the LCA of 30 ng/l (rolling 12-month average), with monitoring required using Method 1631. If the facility desires an LCA that is greater than 30 ng/l, the facility will need to submit data using Method 1631 representative of a 12-month period.
- Require the continuation of a mercury minimization plan for the duration of the permit so that reasonable progress is made toward attaining the WQS.

#### FY2001 Permits

- For Year 1 of the permit, set the mercury limit at a not to be exceeded value of 200 ng/l, based on the present permit compliance level. Require monitoring using Method 1631.
- For Year 2 and the remainder of the permit, set the mercury limit at the LCA of 30 ng/l. Require monitoring using Method 1631. If a facility desires an LCA that is greater than 30 ng/l, the facility will need to submit data using Method 1631 representative of a 12-month period.
- Require the continuation of a mercury minimization plan for the duration of the permit so that reasonable progress is made toward attaining the WQS.

#### **For reissuance of permits with reasonable potential but without previous mercury limits:**

##### FY2000 Permits

- Recommend monitoring with Method 1631 in Year 1 of the permit dependent on laboratory capacity.
- Require monitoring with Method 1631 for two years beginning with Year 2 of the permit.
- Set the mercury limit at the LCA of 30 ng/l effective at Year 4. Require monitoring using Method 1631. If a facility desires an LCA that is greater than 30 ng/l, the facility will need to submit data using Method 1631 representative of a 12-month period.
- Require a mercury minimization plan for the duration of the permit so that reasonable progress is made toward attaining the WQS.

##### FY2001 Permits

- Monitor with Method 1631 for the first two years of the permit.
- Set the mercury limit at the LCA of 30 ng/l effective at Year 3. Require monitoring using Method 1631. If a facility desires an LCA that is greater than 30 ng/l, the facility will need to submit data using Method 1631 representative of a 12-month period.
- Require a mercury minimization plan for the duration of the permit so that reasonable progress is made toward attaining the WQS.

#### **For reissuance of permits with insufficient data for mercury limit determination:**

##### FY2000 Permits

- Recommend monitoring with Method 1631 in Year 1 of the permit dependent on laboratory capacity.
- Require monitoring with Method 1631 to start at Year 2 and continue for the permit duration.
- Include a Special Condition that triggers a mercury minimization program if the monitoring data after Year 2 indicate the presence of mercury at levels indicating the reasonable potential to cause or contribute to exceedances of WQS.

- Evaluate the need for a permit modification to include a mercury limit or include a mercury limit at the time of permit reissuance if reasonable potential exists.

#### FY2001 Permits

- Require monitoring with Method 1631 to start at Year 1 and continue for the permit duration.
- Include a Special Condition that triggers a mercury minimization program if the monitoring data after Year 1 indicate the presence of mercury at levels indicating the reasonable potential to cause or contribute to exceedances of WQS.
- Evaluate the need for a permit modification to include a mercury limit or include a mercury limit at the time of permit reissuance if reasonable potential exists.

### **For issuance of new discharge permits with mercury limits or monitoring:**

#### FY2000 Permits

- Include the actual WQBEL (1.3 ng/l) for mercury as a monthly average with monitoring using Method 1631 effective upon issuance, unless the facility meets the test for a variance in Rule 103(1)(b). Variances will need to be considered on a case-by-case basis. All variances will include mercury minimization plans.
- If there is reason to believe that mercury may be present in the discharge but there are insufficient data to make a reasonable potential determination:
  - Recommend monitoring with Method 1631 in Year 1 dependent on laboratory capacity.
  - Require monitoring with Method 1631 to start at Year 2 and continue for the permit duration.
  - Include a Special Condition that triggers a mercury minimization program if the monitoring data after Year 2 indicate the presence of mercury at levels indicating the reasonable potential to cause or contribute to exceedances of WQS.
  - Evaluate the need for a permit modification to include a mercury limit or include a mercury limit at the time of permit reissuance if reasonable potential exists.

#### FY2001 Permits

- Include the actual WQBEL (1.3 ng/l) for mercury as a monthly average with monitoring using Method 1631 effective upon issuance, unless the facility meets the test for a variance in Rule 103(1)(b). Variances will need to be considered on a case-by-case basis. All variances will include mercury minimization plans.
- If there is reason to believe that mercury may be present in the discharge but there are insufficient data to make a reasonable potential determination:
  - Require monitoring with Method 1631 to start at Year 1 and continue for the permit duration.
  - Include a Special Condition that triggers a mercury minimization program if the monitoring data after Year 1 indicate the presence of mercury at levels indicating the reasonable potential to cause or contribute to exceedances of WQS.
  - Evaluate the need for a permit modification to include a mercury limit or include a mercury limit at the time of permit reissuance if reasonable potential exists.

Table 1. Total Mercury Point Source Values Reported From: a) Maine Facilities' Effluents (1998); b) Great Lakes Basin POTWs (1994); c) Detroit Water and Sewerage Department (1998); and d) USEPA Application Study for Method 1631 (1999).

a) Mean Total Mercury Concentrations in Maine Effluents (1998).

Facility	Total Hg (ng/l)	Facility	Total Hg (ng/l)
Pratt & Whitney	0.30	Mars Hill Utility District	6.21
Champion International Paper Co	1.10	Bar Harbor-Main Facility	6.98
Oakland WWTF	1.32	PWD-Westbrook WWTP	7.41
Control Devices, Inc.	1.33	Kennebunkport WWTP	7.88
Dover-Foxcroft WWTF	1.41	Wells Sanitary District	7.88
Sanford Sanitary District	1.49	Kennebec Sanitary Treat. District	7.96
Mechanic Falls Sanitary District	1.55	Machias WWTF	8.51
York Sewer District	1.67	Guilford Sangerville Sanitary District	9.00
Bowater-NGP-Millinocket	1.73	PWD-Portland	9.01
Houlton Water Company	1.84	Millinocket WWTF	9.66
Berwick Sewer District	1.86	Fort Fairfield Utility District WTP	9.84
North Berwick Sanitary District	2.08	Gardiner WWTF	9.88
Limestone Water & Sewer District	2.23	Bangor WWTP	9.94
Loring Development Corp.	2.34	Robinson Manufacturing	10.01
Corinna Sewer District	2.49	Biddeford WWTF	10.17
Lewiston-Auburn WPCA	2.49	Rumford-Mexico SDTP	10.40
Canton WPCF	2.58	Southeast Harbor WWTF	10.67
Sabattus Sanitary District	2.75	Boothbay Harbor Sewer District	10.75
Ashland Water & Sewer District	2.83	Camden WPAF	10.75
Brewer WWTP	2.96	Caribou Utilities District	10.79
Skowhegan WPCF	3.03	Paris Utility District	10.98
South Berwick Sewer District	3.09	Lincoln Sanitary District	11.85
Old Orchard Beach WWTF	3.15	Old Town PCF	13.62
PWD-Cape Elizabeth WWTF	3.21	I.P. Androscoggin	13.68
North Jay WWTF	3.26	Warren Sanitary District	14.85
Saco WWTP	3.68	Fort James Paper Co.	14.95
Anson-Madison Sanitary District	4.05	Falmouth-R.B. Goodenow, PCF	15.32
Presque Isle WWTF	4.11	Wilton WPCF	16.80
Norway WWTF	4.15	Fort Kent Utility District	16.82
Newport Sanitary District	4.31	Ogunquit Sewer District	22.24
Frasier Paper Co.	4.43	Scarborough Sanitary District	26.17
Thomastown WWTF	4.79	Farmington WPCF	27.93
South Portland WPCF	4.85	Freeport Sewerage District	27.99
Bath WPCF	4.93	Belfast WWTF	30.83
Rockland WWTF	5.00	Milo Water District	31.82
Washburn WWTF	5.13	Ellsworth PCF	32.42
Madawaska PCF	5.24	Kennebunk Sewer District	33.15
Yarmouth WWTP	5.31	Lisbon PCF	35.57
Hartland PCF	5.44	SAPPI-Hinckley	39.10
Augusta Sanitary District	5.46	Brunswick Sewer District	41.67
Calais WWTP	5.56	Waldoboro Sewer District	59.56
Kittery WPCF	5.65	OSRAM-Sylvania	246.80
Orono WPCF	5.74		



b) Great Lakes Basin POTWs (1994)\*

<u>Total Mercury (ng/l)</u>	<u>Location of POTW</u>
36.16	Village of Perry
8.25	City of Erie
4.83	City of Clyde
<0.24, ND	City of Delphos
<0.24, ND	City of Buchanan
4.22	City of Battle Creek
<0.24, ND	West Bay
<0.24, ND	Ludington
2.72	Milwaukee MSD

\* "An Analytical Survey of Nine POTWs from the Great Lakes basin." Draft Report. Analytical Methods Staff, Engineering and Analysis Division, Office of Science and Technology, Office of Water, United States Environmental Protection Agency, Washington, DC, December 15, 1994.

c) Detroit Water and Sewerage Department's Total Mercury Results from Unfiltered WWTP Effluent, 1998. (Taken from pages 4-78, Figure 4-49)\*

<u>Total Mercury - ng/l</u>			
4/16/96	29	9/1/96	11
	20		12
	10		33
	20		32
	22		19
6/1/96	21	10/1/96	21
	21		10
	18		11
	38		7
	23		8
7/1/96	31	10/28/96	21
	39		7
	22		30
	16		19
	22		
8/1/96	32		
	18		
	42		
	21		
	23		
	18		
	10		
	12		
	11		
	22		
	12		

\* "Atmospheric Deposition Study of PCBs, Mercury, and Cadmium. Contract No. CS-1226. Phase I Final Report: Project Summary and Recommendations." Detroit Water and Sewerage Department, December 1998.

d) Total Mercury Results from a USEPA Application Study for Method 1631 (1999)\*

Field Sample Number <sup>1</sup>	Dilution	Matrix Type	Lab	Amount (ng/L) (corrected for bubbler and reagent blanks)	Amount (ng/L) (corrected for bubbler blanks)
52014	1x	Municipal sewage effluent 1	1	11.57	12.28
52015	1x	Municipal sewage effluent 2	1	2.25	2.86
52016	1x	Paper mill effluent	1	3.22	3.92
52017	1x	Base metal mine effluent	2	30.54	30.67
52019	1x	Paper mill effluent	2	7.72	8.00
52020	1x	Sewage influent	3	752.34	752.47
52021	1x	Secondary sewage effluent	3	24.63	24.76
52022	1x	Power plant effluent	4	7.46	7.46
52023	1x	Wastewater treatment plant effluent	4	5.44	5.44
52024	1x	Pulp mill biologically treated final effluent	5	6.70	6.71
52025	1x	Municipal wastewater effluent	5	6.28	6.28
52026	1x	Industrial wood treatment effluent	5	70.90	70.90
52014D	5x	Municipal sewage effluent 1	1	1.92	2.49
52015D	NA	Municipal sewage effluent 2	1	NA	NA
52016D	2x	Paper mill effluent	1	1.82	2.41
52017D	20x	Base metal mine effluent	2	1.52	1.53
52019D	5x	Paper mill effluent	2	1.47	1.53
52020D	337x	Sewage influent	3	2.12	2.25
52021D	10x	Secondary sewage effluent	3	2.63	2.76
52022D	3x	Power plant effluent	4	2.20	2.20
52023D	2x	Wastewater treatment plant effluent	4	2.77	2.77
52024D	3x	Pulp mill biologically treated final effluent	5	2.30	2.31
52025D	3x	Municipal wastewater effluent	5	2.09	2.10
52026D	30x	Industrial wood treatment effluent	5	2.21	2.25

<sup>1</sup> Field sample numbers followed by a "D" indicate that the sample has been diluted as part of Task 2b of the Study. Values shown are not corrected for the dilution.

\* "Results of Method 1631 Application to Effluent Matrices." USEPA, Office of Water, Engineering and Analysis Division, Washington, DC, 1999.

## Attachment 1

### Mercury Strategy Comments February 3, 2000

#### Commenters:

Detroit Water and Sewerage Department (DWSD)  
Kalamazoo WWTP (KWWTP)  
Michigan Manufacturers Association (MMA)  
Michigan Municipal League (MML)  
National Wildlife Federation (NWF)  
Owosso WWTP (OWWTP)

1. **Comment:** Support the use of the Multiple Discharge Variance (MDV). (KWWTP, ML, OWWTP, DWSD, MMA)

**Response:** The Michigan Department of Environmental Quality (MDEQ) agrees.

2. **Comment:** The MDEQ should reconsider using the MDV since some waters meet the mercury Water Quality Standard, and discharger noncompliance is speculative. (NWF)

**Response:** The data presented in the strategy indicate that the vast majority of dischargers in Michigan will not comply with the mercury water quality-based effluent limit. Therefore, use of the MDV at this time is appropriate.

3. **Comment:** The first two years of the permits should adopt mercury limits less than 200 ng/l. (NWF)

**Response:** The current compliance limit is 200 ng/l. This limit was kept for the first two years as a transition to the Level Currently Achievable (LCA), which is expected to be lower than 200 ng/l. In addition, establishing a limit lower than 200 ng/l would require the establishment of a compliance schedule of at least two years, which would be counterproductive.

4. **Comment:** The methodology to derive the LCA of 30 ng/l should be presented. (DWSD, KWWTP)

**Response:** The general methodology was presented in the strategy. The 30 ng/l represents the 90th percentile of the currently available point source discharge data and the MDEQ considered this value to be a reasonable LCA. A table of the data will be given in the final strategy document.

- 5a. **Comment:** The LCA of 30 ng/l may be too low. (DWSD)

- 5b. **Comment:** The LCA of 30 ng/l is too high, and there is no justification. (NWF)

**Response:** The LCA was chosen to be a level as low as possible that would not cause widespread noncompliance.

6. **Comment:** A facility-specific LCA greater than 30 ng/l should be allowed without going through the individual variance process. (DWSD, MMA, MML, OWWTP)

**Response:** The MDEQ agrees. The strategy will be revised to reflect this concept.

7. **Comment:** The LCA mercury limit should be expressed as a rolling 12-month average. (MMA, MML, OWWTP)

**Response:** The MDEQ agrees. The strategy will be revised to reflect this concept.

8. **Comment:** On page 6, clarify the heading for permits without previous mercury limits to include a reasonable potential determination. (MML, OWWTP)

**Response:** This clarification will be made.

9. **Comment:** Consider the insignificance of the mass loading of mercury from small dischargers when determining who should get permit limits. (MML, OWWTP)

**Response:** Permit limits are set following established state rules and federal regulations which treat all dischargers equally in regards to reasonable potential considerations.

10. **Comment:** Reducing concentration limits will reduce the mass loading of mercury, which is very important to some waters. (NWF)

**Response:** The MDEQ agrees. The strategy will assist in the gathering of data on low level mercury concentrations to show progress toward meeting water quality standards.

11. **Comment:** Can a 24-hour composite sample be used with the low level monitoring? (MML, OWWTP)

**Response:** When the United States Environmental Protection Agency promulgated Method 1631, it was indicated that automated compositing equipment could be used, but precluding contamination was more difficult than using grab samples.

12. **Comment:** A higher quantification level should be allowed if due to sample matrix interference. (MML, OWWTP, MMA)

**Response:** The MDEQ agrees and this concept will continue to be included in permits, although this should not be an issue at concentrations as high as 30 ng/l.

13. **Comment:** The legal authority to use Method 1631 is not provided in Rule 1213. (KWWTP)

**Response:** As explained in the strategy, mercury water quality-based effluent limits are now greater than the quantification level. Therefore, Rule 1213 is not applicable.

14. **Comment:** Noncompliance will occur in Year 2 as a result of a lack of labs. (DWSD)  
The requirement to use Method 1631 should be moved back one year. (MMA)

**Response:** The MDEQ has reviewed lab capability and does not anticipate this to be an issue. This issue will continue to be evaluated.

15. **Comment:** There is a need for a survey of lab capabilities to run Method 1631. (NWF)

**Response:** The MDEQ has conducted an informal survey in the regard. The results are attached as Appendix 1.

16. **Comment:** Guidance needs to be developed for mercury minimization plans. (MMA)

**Response:** Guidance for mercury minimization plans is already provided in Rule 1213(d), which is referenced by Rule 1103(6).

17. **Comment:** The mercury minimization program should reference 1213(1)(d) regarding cost effectiveness. (DWSD, KWWTP)

**Response:** This concept is already included in Rule 1103(6)(b).

18. **Comment:** Don't discourage innovative end-of-pipe treatment. (NWF)

**Response:** Dischargers have the option of using innovative end-of-pipe treatment to meet low water quality-based effluent limits for bioaccumulative chemicals of concern, however, the MDEQ is not aware of any demonstrated cost effective end-of-pipe treatment for mercury. We will continue to consider this as new information develops.

19. **Comments:** The strategy should be public noticed. (KWWTP)

**Response:** The draft strategy was sent to all National Pollutant Discharge Elimination System permittees with mercury limits, plus five key stakeholder groups: MUCC, NWF, MMA, MCC, and MML. A meeting was scheduled these stakeholder groups on December 13, 1999, and the availability of the draft strategy was also given in the December 20, 1999 MDEQ Calendar.

20. **Comment:** The strategy needs to consider the impact of mercury Total Maximum Daily Loads (TMDLs). (MML, OWWTP)

**Response:** Mercury TMDLs are scheduled by the MDEQ for 2010 and 2011, and are not available at this time for the strategy to consider. However, we do not believe this strategy to be inconsistent with the MDEQ's approach to control mercury.

**Appendix 1**  
**Laboratories Currently Providing Contract Analytical Services**  
**Using EPA Method 1631 for Mercury**

This list is based on information as of January 17, 2001. It does not represent a quote for analytical services. The laboratories are identified for informational purposes only. This may not be an exhaustive list, and it does not constitute an endorsement.

Alberta Research Council  
Analytical Chemistry  
Highway 16A, 75 Street  
P.O. Bag 4000  
Vegreville, Alberta T9C 1T4 Canada  
Phone: 780-632-8211  
Contact: Xin Banj Feng  
E-Mail: [bond@arc.ab.ca](mailto:bond@arc.ab.ca)

Battelle/Marine Sciences Laboratory  
1529 West Sequim Bay Road  
Sequim WA 98382  
Contact: Brenda Lasorsa  
Phone: 360-681-3650  
E-Mail: [brenda.lasorsa@pnl.gov](mailto:brenda.lasorsa@pnl.gov)

Cebam Analytical Inc  
3927 Aurora Avenue N.  
Seattle WA 98103  
Contact: Steve Nazosf  
Phone: 206-632-9097

Flett Research Ltd.  
440 DeSalaberry Ave.  
Winnipeg, Manitoba R2L 0Y7 Canada  
Phone: 204-667-2505  
Contact: Bob Flett  
E-Mail: [flett@cc.umanitoba.ca](mailto:flett@cc.umanitoba.ca)

Ginosko Laboratory Inc  
17875 Cherokee St.  
Harpster OH 43323-9302  
Contact: Bill Pfeiffer  
Phone: 740-496-4571

KAR Laboratories, Inc.  
4425 Manchester Road  
Kalamazoo, MI 49001  
Contact: Mike Jaeger  
Phone: 616-381-9666, Ext. 218  
Fax: 616-381-9698  
E-Mail: [jaeger@karlabs.com](mailto:jaeger@karlabs.com)

The Academy of Natural Sciences  
Estuarine Research Center  
10545 Mackall Rd.  
St. Leonard, MD 20685  
Phone: 410-586-9700  
Fax: 410-586-9705

Brooks Rand Ltd.  
3950 Sixth Ave. NW  
Seattle WA 98107  
Contact: Rebecca Wood  
Phone: 206-632-6206  
E-Mail: [rebecca@brooksrand.com](mailto:rebecca@brooksrand.com)  
Web Page: [www.brooksrand.com](http://www.brooksrand.com)

Chesapeake Biological Laboratory  
1 Williams St., P.O. Box 38  
Solomons MD 20688  
Contact: Robert Mason  
Phone: 410-326-7387  
E-Mail: [mason@cbl.umces.edu](mailto:mason@cbl.umces.edu)  
Web Page: [www.cbl.umces.edu/mason-n.html](http://www.cbl.umces.edu/mason-n.html)

Frontier Geosciences  
414 Pontius Ave North  
Seattle WA 98109  
Contacts: Nicholas Bloom, Eric Vondergeest  
Phone: 206-622-6960  
Web Page: [www.frontiergeosciences.com](http://www.frontiergeosciences.com)

Jones & Henry Labs, Inc.  
2567 Tracy Road  
Northwood, OH 43619  
Contact: Dave Collins  
Phone: 419-666-0411

Northern Lake Service  
400 North Lake Avenue  
Crandon, WI 54520  
Contact: Mal Gross  
Phone: 715-478-2777  
E-Mail: [mcglns@newnorth.net](mailto:mcglns@newnorth.net)

Skidaway Institute of Oceanography  
10 Ocean Science Circle  
Savannah GA 31411  
Contact: Herb Windom  
Phone: 912-598-2490  
E-Mail: [herb@skio.peachnet.edu](mailto:herb@skio.peachnet.edu)

United States Geological Survey\*  
8505 Research Way  
Middleton, WI 53562  
Contact: David Krabbenhoft  
Phone: 608-821-3843  
E-Mail: [dpkrabbe@usgs.gov](mailto:dpkrabbe@usgs.gov)

Trace Analytical Laboratories, Inc.  
2241 Black Creek Road  
Muskegon, MI 49444-2673  
Phone: 231-773-5998  
Fax: 231-773-6537  
E-Mail: [traceanalytical@mad.scientist.com](mailto:traceanalytical@mad.scientist.com)

North Shore Analytical  
5612 Miller Trunk Highway, Suite 1  
Duluth, MN 55811  
Contact: Linda Christensen/Christopher Gross  
Phone: 218-729-4658  
Fax: 218-729-4659  
E-Mail: [info@northshoreanalytical.com](mailto:info@northshoreanalytical.com)

Severn Trent Laboratories (STL) Michigan  
6095 Jackson Road  
P.O. Box 3726  
Ann Arbor, MI 48103  
Phone: 734-205-2530  
Fax: 734-205-2533  
E-Mail: [stl-inc.com](mailto:stl-inc.com)

Katahdin Analytical Services, Inc.  
340 County Road #5  
Westbrook, ME 04092  
Phone: 207-874-2400  
Fax: 207-775-4029  
Contact: W. Michael Cooney  
E-Mail: [mcooney@katahdinlab.com](mailto:mcooney@katahdinlab.com)

\*Available to government entities only

Summit Environmental Technologies, Inc  
595 East Tallmadge Avenue  
Akron OH 44310  
Contact: Mo Osman  
Phone: 330-253-8211  
E-Mail: [set3746@apk.net](mailto:set3746@apk.net)

Wisconsin State Lab of Hygiene  
465 Henry Hall  
Madison, WI 53706-1578  
Contact: Alan Cleary  
Phone: 608-224-6279

AEP Pro Serv Analytical Chemistry Services  
4001 Bixby Road  
Groveport, OH  
Contact: Lannie Rowe  
Phone: 614-836-4214  
Fax: 614-836-4168  
E-Mail: [ldrowe@aep.com](mailto:ldrowe@aep.com)

Northern Lake Service, Inc.  
400 North Lake Avenue  
Crandon, WI 54520-1298  
Contact: Mal Gross, Sales/Marketing Director  
Phone: 715-478-2777/1-800-278-1254  
Fax: 715-478-3060  
E-Mail: [norlake@northernlakeservice.com](mailto:norlake@northernlakeservice.com)

Environmental Quality Labs  
44075 Phoenix Drive  
Sterling Heights, MI 48314  
Phone: 586-731-1818  
Fax: 586-731-2590  
Contact: Tom Megna  
E-mail: [Tmegna@ameritech.net](mailto:Tmegna@ameritech.net)

The following laboratory participated in the Method 1631 Validations Study for EPA, and may also provide contract analytical services using Method 1631.

Environment Canada  
Centre Saint-Laurent  
105 McGill  
Montreal, Quebec H2Y 2E7 Canada  
Phone: 514-496-7101