Draft Highest Attainable Condition Procedure

Water Quality Standards and Assessment

Presentation to Willamette Basin Mercury MDV Advisory Committee
April 4, 2019
DEQ Headquarters, Portland, OR

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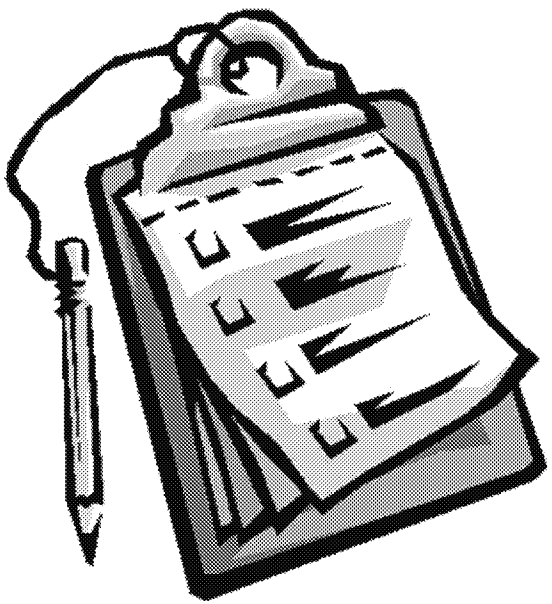
Topics

- Review of HAC concept
- New, improved flow chart!
- Rationale



- Simplified process that applies to industrial and municipal dischargers.
- Prioritizes MMP implementation
  - Source reduction can achieve similar Hg reductions at lower environmental harm

Highest Attainable Condition

2. Effluent condition with greatest pollutant reduction achievable

or

3. Effluent condition that optimizes current technology + pollutant reduction program

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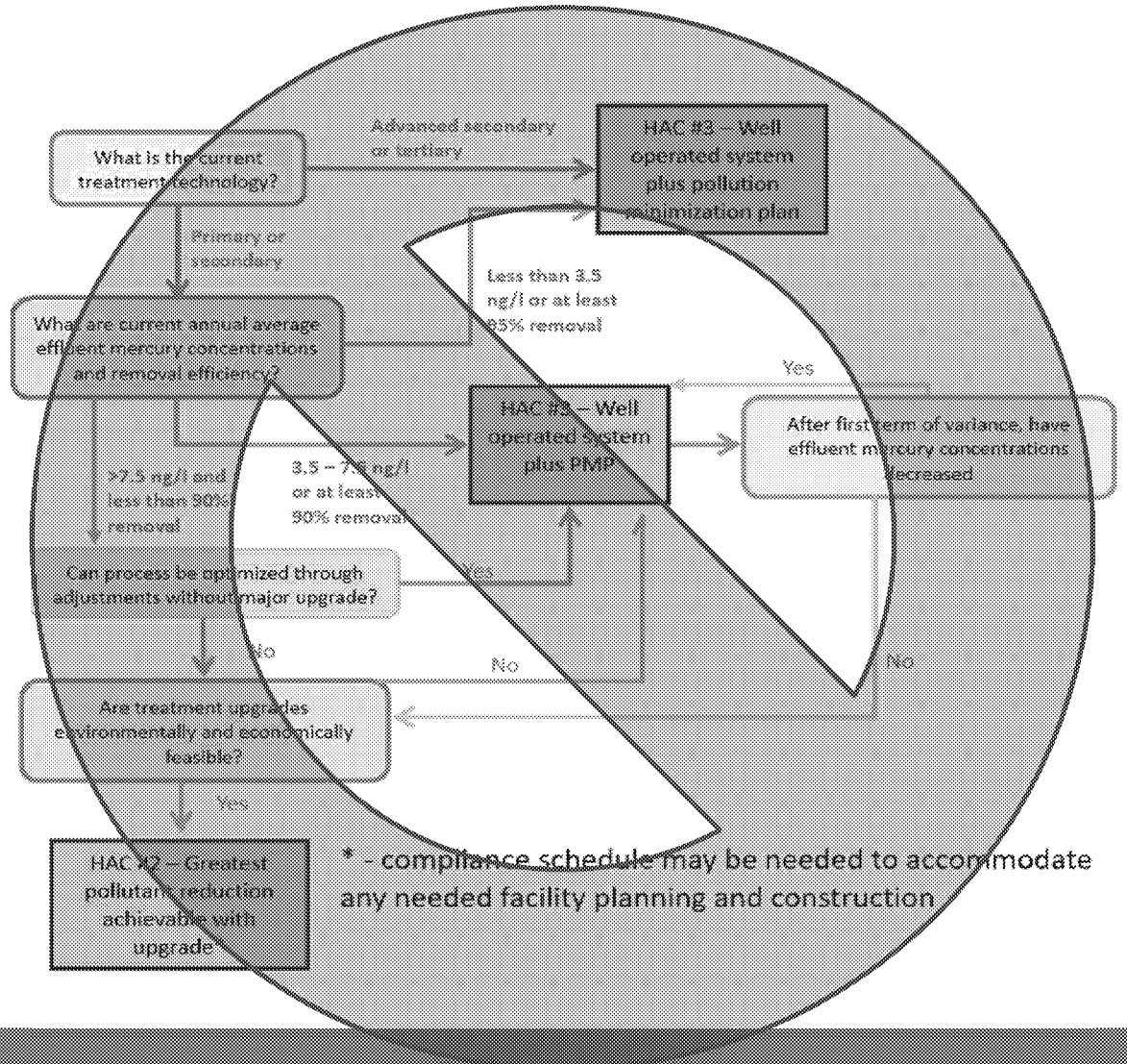
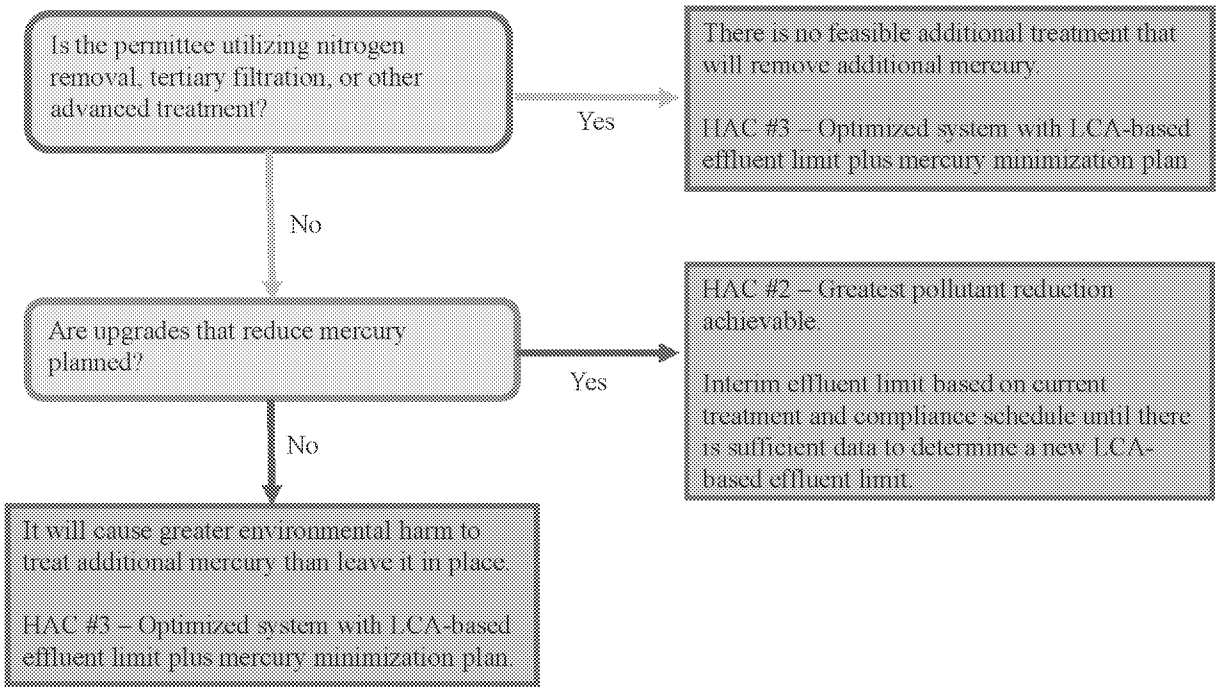


* - compliance schedule may be needed to accommodate any needed facility planning and construction


Is the permittee utilizing nitrogen removal, tertiary filtration, or other advanced treatment?
Yes
There is no feasible additional treatment that will remove additional mercury.
HAC #3 – Optimized system with LCA-based effluent limit plus mercury minimization plan
No
Are upgrades that reduce mercury planned?
Yes
HAC #2 – Greatest pollutant reduction achievable.
Interim effluent limit based on current treatment and compliance schedule until there is sufficient data to determine a new LCA-based effluent limit.
No
It will cause greater environmental harm to treat additional mercury than leave it in place.
HAC #3 – Optimized system with LCA-based effluent limit plus mercury minimization plan.

Advanced systems

Is the permittee utilizing nitrogen removal, tertiary filtration, or other advanced treatment?

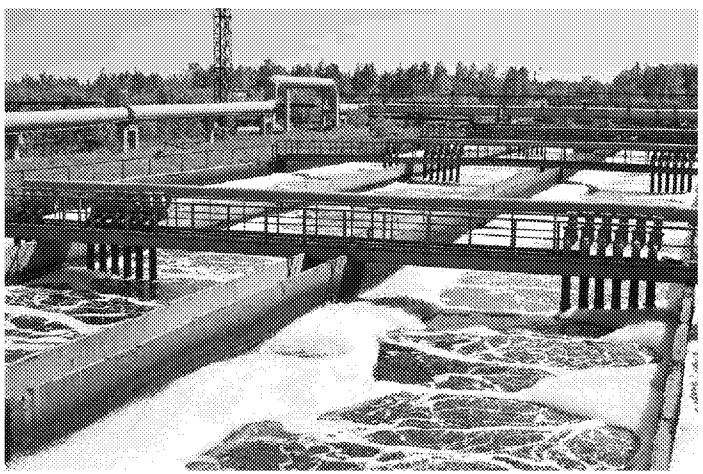
Yes →

There is no feasible additional treatment that will remove additional mercury.

HAC #3 – Optimized system with LCA-based effluent limit plus mercury minimization plan

Rationale

- No proven treatment that can achieve additional mercury reductions
- DEQ will revisit technology every five years to determine if there are any feasible technological advances.



Systems undergoing upgrades

Are upgrades that reduce mercury planned?

Yes

HAC #2 – Greatest pollutant reduction achievable.

Interim effluent limit based on current treatment and compliance schedule until there is sufficient data to determine a new LCA-based effluent limit.

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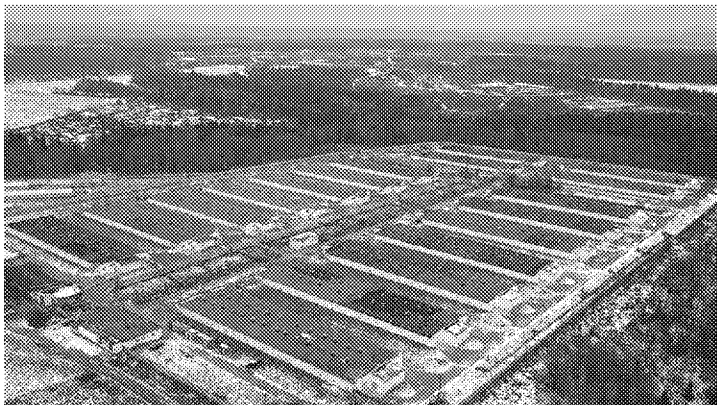
Rationale

- Upgrades can address multiple pollutants.
- Provide facility sufficient time to collect data to develop LCA under new treatment.



All Other Facilities

Are upgrades that reduce mercury planned?

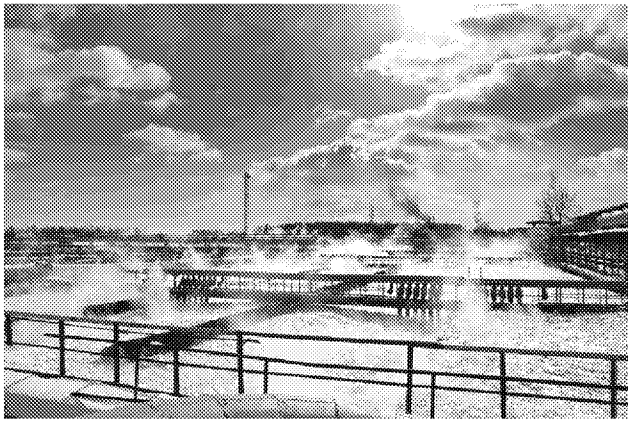
No

Source reduction will result in similar mercury levels and cause less environmental harm than treatment.

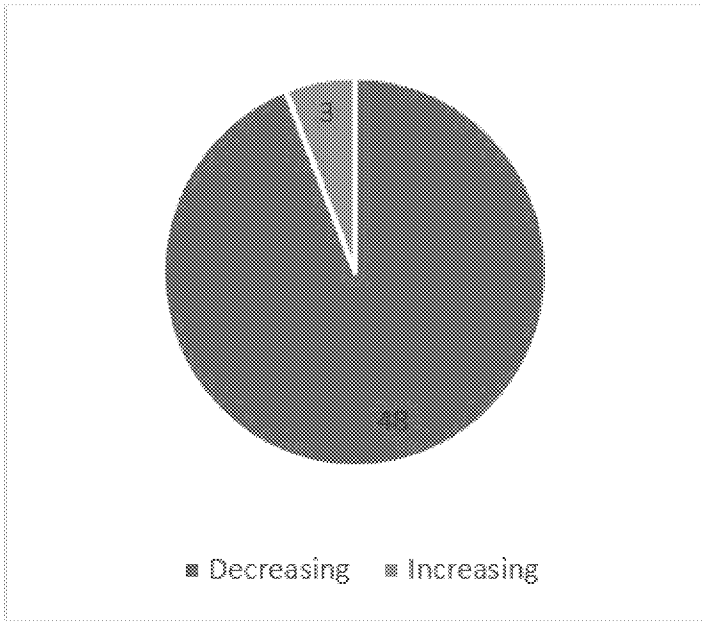
HAC #3 – Optimized system with LCA-based effluent limit plus mercury minimization plan.

Rationale

- MMP implementation will lead to similar Hg reductions as treatment.
- Treatment causes more environmental harm than MMP implementation.

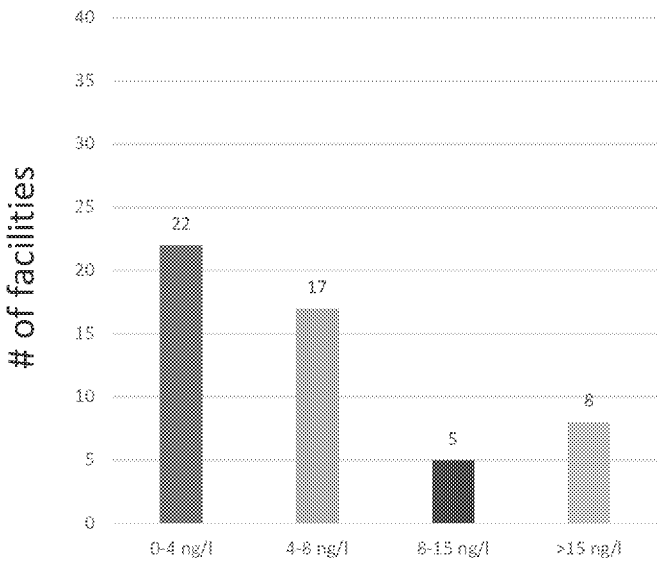


Wisc. POTWs 2004-2018

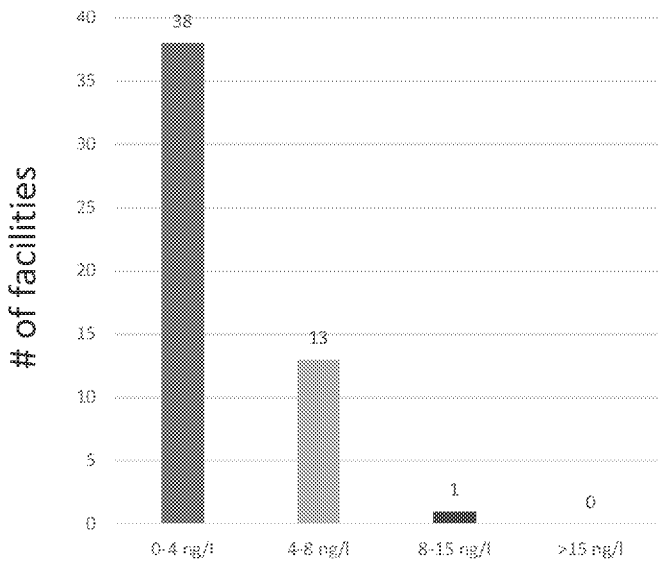


# of facilities with increasing or decreasing trend in annual average mercury effluent concentrations 2004-2008 vs. 2014-2018

Wisc. POTWs 2004-2018

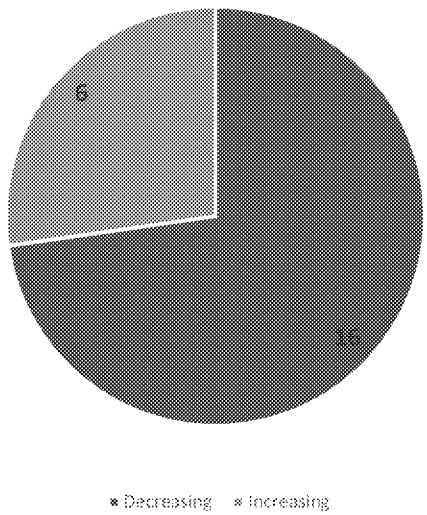


Level currently achievable, 2004-2008



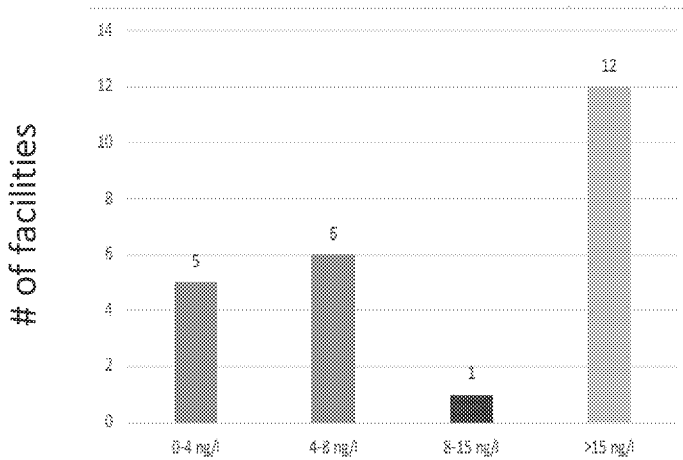
Level currently achievable, 2014-2018

Wisc. Industrials 2004-2018

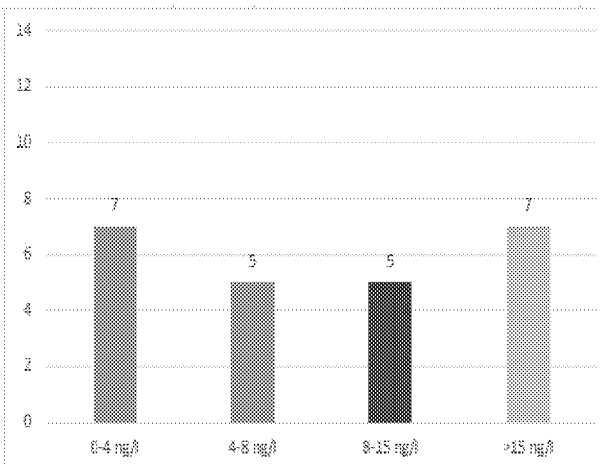


# of facilities with increasing or decreasing trend in annual average mercury effluent concentrations 2004-2008 vs. 2014-2018

Wisconsin Industrials 2004-2018



Annual average mercury effluent concentrations, 2004-2008



Annual average mercury effluent concentrations, 2014-2018

Environmental Harm of Treatment

- MMP: No incremental cost
- Upgrades:
  - >200 MWh/MGD/yr compared to secondary
  - Equiv. to 125 tons CO_2 equiv/yr/MGD.
  - Additional cost of transporting waste, plus risk to reintroduce waste to environment.
- Need to weigh harm of treatment vs. harm of leaving pollution in place for a few years.

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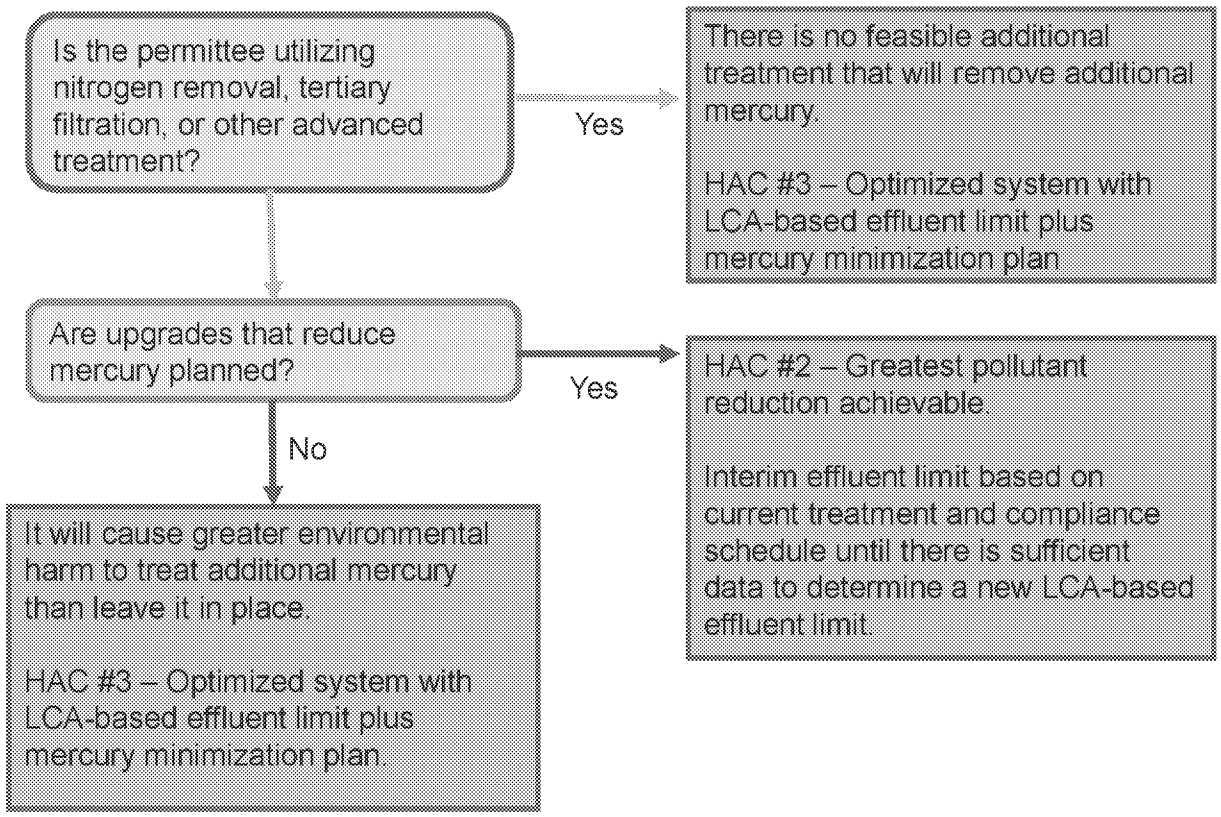
Comments and discussion



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