CERESTAR USA, INC.
1100 Indianapolis Boulevard
Hammond, Indiana 46320-1094

Cerestar

Subject: Comments on First Notice - Development of a New Rule Concerning Statewide Mercury Variance {#02-138(WPCB) [Mercury Variance]}

Cerestar USA strongly endorses initiating a rulemaking for establishing a statewide mercury variance. Cerestar believes that a statewide mercury variance from the wildlife criterion of 1.3 ppt (ng/L) and the human health criterion 1.8 ppt (ng/L) is warranted.

Cerestar's Hammond, Indiana facility, as part of an update to its NPDES Permit Renewal Application, sampled[1] and tested[2] for total mercury our Lake Michigan intake and Outfall 001 that discharges to Lake Michigan. The intake geometric mean mercury level was 1.94 ppt and the geometric mean of the Outfall 001 mercury data was 3.30 ppt. These results indicate that Lake Michigan waters are above the wildlife and human health criteria for total mercury. Therefore, Cerestar would be required to request a variance for these water quality standards.

Cerestar, in preparing for renewal of the NPDES Permit, preliminarily determined that sources of mercury to Outfall 001 include Lake Michigan intake water (and cycling up of intake water in operations of boilers, cooling systems) and the extracts from the raw material (corn). As Cerestar has no control over these sources, a preliminary estimate of controlling mercury at Outfall 001 using ion exchange resin[3] was developed. Based on an average Outfall 001 flow of 10 mgd and assuming a 75 percent removal efficiency of total mercury using ion exchange, the annualized cost[4] would be $136 million per pound of mercury removed (e.g., $136,000,000/1 lb of mercury removed). In addition, there would be significant multi-media impacts from adding this tertiary treatment to the Cerestar wastewater treatment system. For instance, an additional 1,000 cubic yards per year would be consumed at a landfill and an additional electrical demand of 3,200,000 kW-hr/yr would be required. The total carbon dioxide (CO_2) emissions from operating this additional treatment system would be 3,500 tons/yr. However, of most concern is that the additional electrical requirements would generate 0.66 lb/yr of mercury[5] discharged to the air. It is safe to assume that the majority of this mercury would be deposited into water. On average the additional wastewater treatment step will remove 0.075 lb/yr of total mercury from being directly discharged into Lake Michigan, but in conducting the removal from wastewater, 0.66 lb/yr of mercury could be added into Lake Michigan via air deposition from the additional electrical demands of the tertiary treatment. This preliminary evaluation of mercury control highlighted several issues that would be common to many facilities:

- Mercury background levels in intake water are greater than criteria.
- Mercury sources to a wastewater treatment plant are not directly controllable.
- Removal of mercury from wastewater will not remove mercury from the environment, i.e., mercury will be shifted to either air, land.
- Removal of mercury from wastewater using the "best" theoretical technique[6] would result in an overall net increase of mercury emissions to the environment.
- Mercury treatment is absurdly expensive.

---

[1] Using Method 1669 techniques
[2] Using Method 1631 Rev B
[3] For example, Rohm and Haas Duolite GT-73. Effectiveness or applicability of technology to industrial wastewaters is not proven, just theoretical.
[4] $46 million capital, $5.2 million O&M annualized over 10 years
[5] Coal-fired electrical plant emission of 0.21 ppm Hg per 1.02 Kw-hr/lb coal
[6] Sand filtration followed by Granular Activated Carbon followed by Ion exchange resin

A company of CERESTAR SA
JUL-01-2002 17:12 CERESTAR USA INC 2194736603 P.02/03

Even though the above facts would support the request for an individual variance from the mercury criteria for Cerestar, there is a lack of clarity in the benchmarks to be attained for a successful issuance of individual variances and uncertainty in the administration of the process. In particular for industrial facilities, the lack of definition or thresholds for a successful technical and legal demonstration of "undue burden and hardship" to satisfy Indiana statute requirements and demonstration of "widespread social and economic impact" to satisfy federal requirements is of particular concern. Cerestar is also concerned that the IDEM does not have the resources[7] to review, in a timely manner, the number of individual variance applications that will be generated - given that Lake Michigan (as a source water for industrial facilities) can exceed the mercury criteria.

Cerestar believes that establishment of a statewide mercury variance would allow both facility and regulated resources to focus on attainable improvements to water quality and the environment. Other Great Lake states (particularly Ohio and Michigan) have implemented a statewide mercury variance approach in response to background levels of mercury compared to the 1.3 ppt and 1.8 ppt mercury criteria. Cerestar, as part of a Northwest Indiana coalition, commented on and generally supported Indiana's proposed (327 IAC 2-1.6-16) mercury variance. Since the proposal in February 1999, Indiana has available more data on the background levels of mercury in Indiana waters and access to information and data from other states on their mercury reduction efforts. None of this data or information would negate the needs identified in 1999 for a statewide mercury variance.

Cerestar would support a statewide mercury variance rulemaking that considered iterative pollution prevention or source reduction activities and effluent mercury monitoring to track changes to effluent quality. Cerestar considers that part of the rulemaking effort should focus on requiring IDEM to establish a program:

- to research the relationship between total mercury and mercury fish consumption advisories, mercury cycling resulting in bioavailable forms of mercury (e.g., methylation of mercury),
- to facilitate exchange of information on sources of mercury and possible controls or substitutes, and
- to compile source water (whether lake, stream, river, groundwater) mercury levels and make available from one point of contact.

Sincerely,

Joe Lynch
Operations Manager
Cerestar

[7] Technical resources needed to review individual variance applications would include process engineers, wastewater engineers, toxicologists, biologists, and economists.