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Pennsylvania Chemical Industry Council
Your Advocate for the Business of Chemistry

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February 12, 2010

Honorable John Hanger
Chairman
Environmental Quality Board
16th Floor, Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101

Re: Revisions to 25 Pa. Code Chapter 95 – Wastewater Treatment Requirements

Dear Chairman Hanger:

The Pennsylvania Chemical Industry Council (PCIC) submits the following comments regarding the draft proposed changes to the Chapter 95 – Wastewater Treatment Requirements as they relate to Total Dissolved Solids. (TDS)

The proposed regulations were formally submitted to the Environmental Quality Board (EQB) on November 14, 2009. PCIC appreciates the efforts of the Department of Environmental Protection to create a task force through the Water Resources Advisory Committee. (WRAC) The premise for creating the task force was to bring together diverse groups interested in the subject matter given the unusually large impact of the proposed regulation across industry sectors.

The task force has heard from a variety of experts and a great deal of information has been provided to the department on the significant negative impact the proposed TDS could have on the chemical industry and across the board on Pennsylvania's economy without commensurate environmental benefit. Unfortunately the department's November 2009 submittal to the EQB on the Ch. 95 –

Wastewater Treatment Requirements for Total Dissolved Solids continues to retain many areas of concern to the chemical industry.

The task force continues to meet and it is our hope that ***if*** the regulatory process advances, the work of the task force will be incorporated into the regulation; however, it is the proposed regulations as submitted to the EQB upon which the comments below are based.

1. **Absence of data to justify the proposed 500 mg/L standard**: The proposed regulations seek to limit new discharges of Total Dissolved Solids (TDS) to all waterbodies to 500 mg/L on a monthly average. This amendment to the Ch. 95 regulations was contemplated without sufficient data upon which to propose a statewide blanket limitation given the wide range of sources for TDS.

   The proposed regulation was contemplated after a prolonged low-flow situation occurred in one waterbody which has historic mining impacts and without information from a variety of waterbodies across the state. As the department itself has acknowledged, the makeup of waterbodies varies and therefore the existing TDS loading and ability to absorb TDS varies across waterbodies. For example, one PCIC member tested their well water last year and found the TDS content prior to use to be 477 mg/L.

2. **Costly and infeasible treatment options**: The task force has provided information to WRAC from a number of different industry sectors, including input from the chemical industry representatives. The task force has verified significant cost concerns, technology limitations and energy usage concerns in meeting a 500 mg/L standard with the technologies contemplated in the proposed regulations – evaporation, crystallization and reverse osmosis.

   For example, an evaporation/crystallization facility designed to handle 1,000,000 gallons per day of brine would require some 87 million kilowatt hours of electricity annually (the equivalent electric demand of some 11,300 households); plus 262,800,000 cubic feet of natural gas annually, and would generate nearly 60,000 tons of greenhouse gas CO_2 emissions per year. Therefore a 500 mg/L standard would result in costly capital investment, very large increases in daily operating expenses, significant implications for energy usage and greenhouse gas emissions.

   Chemical manufacturers and refiners have various sources of TDS in their wastewater streams. One of the sources of TDS is the air pollution control devices, such as wet gas scrubbers, that have been or will be installed in the near future. These wastewaters have significant TDS and sulfate concentrations and are either processed through on-site wastewater treatment plants or conveyed to POTWs for additional treatment. Permits having limits greater than the proposed 500 mg/L for TDS and 250 mg/L for sulfates have been issued or are in the approval process for these wastewaters based on assimilative capacity and the chemical, flow, biological, and use designation characteristics of the receiving waters.

Requiring additional treatment of refinery or chemical plant TDS streams is not feasible since the current TDS technologies have not been demonstrated to be applicable to these wastewaters. Current TDS technologies are polishing unit operations only; significant additional treatment would also be required upstream of the TDS removal operations unit. Besides the lack of demonstrated success of TDS technologies for typical refinery and chemical plant wastewater streams, the costs associate with the existing technologies would be excessive and prohibitive and have the potential to impact pollution control devices with an environmental benefit.

In addition, recirculating cooling towers are utilized throughout the chemical and refining industry and would result in the same 316b issues and concerns as detailed in the electric power generation section and also noted in the comments submitted by the PA Chamber of Business and Industry.

The department has estimated that the cost of treating TDS is $0.25/gallon. Assuming that this is an accurate cost estimate, one PCIC member that operates its own industrial wastewater treatment facility estimates that based on the department's cost information, it would incur an additional $200 million per year in treatment costs without a clear, commensurate environmental benefit.

One of the most basic questions that must be asked when a regulation is proposed is what will be the actual environmental benefit versus the cost of implementation and ability to comply for dischargers of all sizes. For example, smaller chemical manufacturers often have wastewater discharges with TDS concentrations greater than 2000 ppm, but with loadings of only a few hundred pounds of TDS per day to receiving streams. In many cases these small TDS loadings would not have any impact on the receiving stream, however, arbitrarily regulating small TDS discharges would put an undue economic burden on struggling small businesses. At the department's estimated cost of $0.25/gallon, a small chemical manufacturer with an average flow of 20,000 gallons/day could incur annual treatment costs of $1,825,000/yr. This type of increase in cost would make it extremely difficult to continue operations in Pennsylvania.

3. **Costly residual disposal concerns**: Each known treatment option leaves a residual waste product which requires further disposal adding to the cost of treatment for an issue that has not been identified as a statewide or even prevalent concern.

   Reverse osmosis presents a wastewater that must be treated; evaporation and crystallization create sludge that will ultimately be taken to a landfill. Information presented to the task force from the waste industry indicated that there is not sufficient disposal capacity in the Commonwealth to handle the additional volume. This could lead to landfill expansions.

4. **New discharge definition concern with costly consequences**: Section 95.10(a) of the proposed regulation states "for the purpose of implementing this section, a new discharge of High-TDS wastewater is a discharge that did not exist on April 1, 2009, and includes a TDS concentration that exceeds 2,000 mg/L or a TDS loading that exceeds 100,000 pounds/day. The term "new discharge" shall include an additional discharge, an expanded discharge or an increased discharge from a facility in existence prior to April 1, 2009.

Within the chemical industry many facilities operate batch processes in campaign operations. Campaigns are dictated by product demand and the introduction of new product lines.

Including increased discharges from existing facilities does not take into consideration those facilities operating a variety of campaign type productions and limits the opportunity for economic growth at an existing facility.

For example, a process which generates wastewater with TDS concentrations greater than 2,000 mg/L that had been produced by past campaigns, but which was not in operation on April 1, 2009 and subsequently restarted, would be considered a new discharge and subject to the treatment requirements under Ch. 95.

Additionally, facilities that operate batch processes and campaigns could be limited from receiving new products that may result in High TDS wastewater regardless of whether the receiving waterbody can absorb additional TDS loading.

As currently proposed, the regulation will severely impact economic development opportunities for facilities in Pennsylvania without a clear, commensurate environmental benefit. Expansions or resumption of product lines will be awarded to or moved to competing sister facilities in other states.

5. **Unnecessary addition to secondary drinking water standards**: The proposed changes to Ch. 95 to limit TDS discharges would require that such discharges meet secondary drinking water standards for TDS, sulfates and chlorides. This level of treatment is not required through Ch. 95 as the department already has regulatory mechanisms in place to ensure that public water supplies are protected.

   The department uses the PENTOX model to predict if water quality based effluent limits are necessary to protect the public water supply use of receiving waterbodies. This model uses in-stream water quality criteria specified in Ch. 93. This modeling is conducted by department engineers with every NPDES permit application.

   In cases where influent water to water suppliers exceeds Ch. 93 water quality criteria, the department already has the authority to require implementation of a Total Maximum Daily Load in the watershed.

   The department has been very successful in protecting water supplies using the existing standards and there does not appear to be justification based on current data to revise the Ch. 95 regulations.

The members of PCIC appreciate the opportunity to comment on the proposed high-TDS amendments to the Ch. 95 regulations and look forward to continuing to work through the task force and the Water Resources Advisory Committee to seek ways to ensure that, if changes to the existing regulations regarding TDS are determined to be necessary, the changes take into consideration:

1. The diverse types of operations within the chemical and related industries;
2. Actual TDS loading data from across the state;

3. The assimilative capacity of receiving waters;
4. Technological challenges to meet treatment requirements;
5. Unintended disposal concerns;
6. Economic feasibility of meeting the regulation;
7. Appropriate timeframes to meet the regulatory mandates; and
8. Actual environmental improvement of the regulation.

Thank you for the opportunity to comment on the proposed high TDS amendments to the Ch. 95 Wastewater Treatment Requirement regulations.

Sincerely

Pamela A. Witmer

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President