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RE: Comments on Proposed Total Dissolved Solids (TDS)/Wastewater Discharge Regulations

On behalf of the Allegheny Conference on Community Development, thank you for the opportunity to comment on the proposed rule that was released in the Pennsylvania Bulletin, Volume 39, Number 45 on November 7, 2009 (with a technical update in Volume 39, Number 46 on November 14, 2009), which proposes to amend 25 Pa. Code Chapter 95 (39 Pa. B. 6467), relating to total dissolved solids wastewater treatment requirements, and to establish new standards.

The Allegheny Conference on Community Development and its affiliates – the Greater Pittsburgh Chamber of Commerce, the Pennsylvania Economy League of Southwestern Pennsylvania, and the Pittsburgh Regional Alliance – work in collaboration with public- and private-sector partners to stimulate economic growth and enhance the quality of life in southwestern Pennsylvania. The Conference is a private sector leadership organization with more than 300 Regional Investors. These Regional Investors provide the civic leadership to execute a focused agenda for regional improvement.

The Conference appreciates the Department's concern for water quality in the Commonwealth's waterways. However, the Conference strongly believes that the proposed TDS rule should not be advanced as written. We would like to focus our comments on four specific areas:

- The absence of detailed data to support this regulation;
- The recommendation by the DEP's Water Resources Advisory Committee to halt the implementation of this proposed rule;

- Historical DEP water quality monitoring data that show that spikes in TDS levels in the Monongahela River and other major waterways in the state are the norm; and
- The lack of competitive, cost-effective treatment options.

Absence of Scientific Data to Support this Regulation

We believe that the DEP is moving forward to implement regulations on TDS without sufficient scientific data to support the proposal.

As stated in the November 7, 2009 publication of the proposed regulation, “TDS can be naturally present in water or the result of runoff, mining or industrial or municipal treatment of water. ... The concentration and composition of TDS in natural waters is determined by the geology of the drainage, atmospheric precipitation and the water balance (evaporation/precipitation).” It is necessary to understand the magnitude of discharge from each of these various sources before any sort of limit should be imposed, and DEP has not done the analysis necessary to understand the current conditions.

For example, we know that in the Monongahela River Watershed alone, there are:

- 4 electricity generators;
- 1,336 active mines;
- 1,292 abandoned mines whose discharge is the responsibility of the Department;
- More than 30 NPDES-permitted industrial sources;
- 25 major NPDES-permitted sewage treatment facilities;
- 1,625 active shallow oil/gas wells with permits issued in 2008 and year-to-date 2009;
- 388 active Marcellus Shale wells with permits issued in 2008 and year-to-date 2009;
- Storm water run-off that affects the entire watershed; and
- Road salt run-off that affects the entire watershed in the winter months.

All of the above sources contribute to TDS levels in the Monongahela River, but it is not known how much each of these sources contributes to the situation. It is not good policy to arbitrarily regulate an end-of-pipe limit on all new TDS discharges when there is insufficient data to adequately define the current conditions.

Furthermore, the rule does nothing to account for the condition of river water as it enters Pennsylvania. A January 2009 report released by Tetra Tech cited TDS levels well over 500 parts per million at the Point Marion Lock – which lies at the border of Pennsylvania and West Virginia – during multiple occasions in late 2008. Currently, West Virginia does not regulate TDS discharges, and regulating the water in Pennsylvania may have little impact if the flow coming into our state is already being recorded at levels above 500 parts per million.

In the preamble to the proposed rule, the Department cites studies and analyses of TDS conditions from six rivers across the Commonwealth (the Monongahela, the Beaver, the Shenango, the Neshannock, the West Branch of the Susquehanna, and the Moshannon). However, the Department has failed to release to interested parties the data, analysis, and conclusions of these studies to demonstrate how they justify the proposed rule.

Consideration of the Water Resources Advisory Committee Recommendations

The Conference is not alone in believing that DEP lacks sufficient data and analysis to develop an effective and appropriate TDS regulation. The Department's own Water Resources Advisory Committee (WRAC), made up of environmental interest group representatives, academics, industry representatives, and others recommended to DEP at its July 15, 2009, meeting, that the Department *not* proceed with the rule as proposed. Quoting from the minutes of that meeting:

“WRAC believes the ramifications of the draft... regulations are wide ranging and have not been adequately analyzed by the Department.”

“WRAC believes that the draft regulation needs to be supported by science.”

And “WRAC recommends that the Department ...form a statewide stakeholders group to analyze the issues and develop appropriate solutions.”

A stakeholders group has been formed and has been working to understand the rationale for the proposed regulation, describe the impact it would have on jobs and investment in the Commonwealth, and to develop alternatives to the Department's proposed rule. However, to collect sufficient data to understand current river conditions and develop an appropriate regulation -- if it is necessary -- will take far longer than the time allotted for the public comment on this proposed rule. We strongly encourage the Department to follow its own Advisory Committee's recommendations and collect and analyze the suggested data before moving forward with any TDS rule.

Historical DEP Water Quality Monitoring Data Shows No Recent Increase in TDS Trends

The Department has reported numerous times that it has been monitoring TDS levels on the Monongahela River and other state waterways for 30 years. What the Department has not reported is that occasional increases in TDS levels above 500 parts per million have occurred routinely in these waterways during that time. Since 1973, DEP has collected 955 samples from four monitoring stations along the Monongahela River. Roughly 3% of those samples, dating back 38 years have exceeded 500 parts per million. However, in no month has the 38 year average come close to exceeding the 500 parts per million level, with the worst performing month, October, averaging under 300 parts over those 38 years.

Significantly, there does not appear to be any obvious increase in TDS concentrations in recent years compared to historical performance. For instance, the TDS levels discovered in the Monongahela River last year are far less than those recorded in 1997. The spikes recorded in 2007-2009, after a decade of readings below 500 parts per million, indicate a condition worth studying to understand its nature and its severity, but a handful of samples is not enough to justify a new set of regulations for the entire state.

Over the past five years, the Department of Environmental Protection has collected 105 samples from the three active monitoring stations along the Monongahela River in the Department's Water Quality Network. That is an average of only seven samples per station per year, not nearly enough data to adequately determine a problem, nor justify a statewide regulation.

TDS readings in other Pennsylvania waterways are even less convincing. In the preamble to the proposed rule, the Department states that analysis of the Beaver River shows an upward trend in TDS concentrations. Yet according to the Water Quality Network data provided to us by the Department, TDS in the Beaver River has not exceeded the 500 parts per million level since August 20, 1998. Along the West Branch of the Susquehanna River, the department has Water Quality Network data reaching back to 1973. Of the 588 samples tested, only 5 – less than one percent – exceeded 500 parts per million, the most recent in 2005. Analysis of DEP Water Quality Network data demonstrated similar conditions in other of the state's major watersheds:

- Of the 1,264 samples collected from the Allegheny River beginning in 1968, 11 samples (0.87%) have been measured at or above 500 parts per million, the most recent recorded in 2007;
- Of the 312 samples collected from the Conemaugh River beginning in 1969, 80 samples (25.6%) have been measured at or above 500 parts per million, the most recent recorded in 2008;
- Of the 504 samples collected from the Delaware River beginning in 1972, 25 samples (4.9%) have been measured at or above 500 parts per million, the most recent recorded in 2009;
- Of the 343 samples collected from the Juniata River beginning in 1975, 2 samples (0.58%) have been measured at or above 500 parts per million, the most recent recorded in 1991;
- Of the 261 samples collected from the Ohio River beginning in 1975, 4 samples (1.56%) have been measured at or above 500 parts per million, the most recent recorded in 1997;
- Of the 1113 samples collected from the Schuylkill River beginning in 1972, 65 samples (5.8%) have been measured at or above 500 parts per million, the most recent recorded in 1998;
- Of the 891 samples collected from the Shenango River beginning in 1969, 4 samples (0.44%) have been measured at or above 500 parts per million, the most recent recorded in 1991; and
- Of the 1,430 samples collected from the Susquehanna River beginning in 1972, 13 samples (0.9%) have been measured at or above 500 parts per million, the most recent recorded in 2005.

This data collected by DEP show no new crisis, no need to rush. There is a need, however, to take time, collect and analyze data, and if necessary, craft a regulation that adequately and appropriately addresses the TDS conditions.

Lack of Competitive, Cost-Effective Treatment Options

Of particular concern is how this regulatory approach has the potential to seriously damage the state's economy. The preamble to the rule states that treatment costs should not exceed 25 cents per gallon, yet the Department has not provided interested parties with the technology testing data, vendor pricing information, and staff analysis which led the Department to this conclusion.

According to industry investigations undertaken as part of the Water Resource Advisory Committee process, treatment options available for addressing TDS have not been proven to be cost-effective. Specific sector analyses have been generated in the manufacturing, coal, natural gas, and electric utility industries. These industries evaluated the potential impact

that imposing TDS treatment options would have on them and reported their findings to the WRAC over the past few months. The conclusion reported from all sectors is that the current approach is financially ruinous to Pennsylvania. Reported below are some examples from the sector analyses:

Electric Utility Industry

The electric utilities presented a preliminary sector analysis to DEP's WRAC on October 16, 2009. The industry noted that a variety of treatment options were examined, but evaporation was shown to be the most viable in Pennsylvania. The estimated capital cost to implement treatment options on 15 electric utility plants in the Commonwealth would cost the industry \$1 billion. The annual operating and maintenance costs for those 15 plants would be about \$70 million annually. Electric utilities estimate that they would need several years of lead time to implement the treatment systems, again surpassing the proposed implementation date.

Manufacturing (Case Study: Pharmaceutical Industry)

The pharmaceutical industry presented a preliminary sector analysis to DEP's Water Resources Advisory Committee TDS working group on October 16, 2009. The industry reported that several treatment options were studied, including microfiltration; granular activated carbon adsorption; reverse osmosis system; and brine concentrator and crystallizer. The estimated cost of implementing one of these treatment options on just one of the many facilities in Pennsylvania was \$13.2 million for the installation and start-up capital cost. The total annual operating cost was reported to be \$5.8 million (with the solid waste disposal cost component estimated at \$456,000 per year and the annual electricity cost estimated at \$400,000).

Coal Industry

On September 29, 2009, the coal industry presented a preliminary sector analysis to DEP's WRAC. The industry indicated that though a variety of treatment options were examined; reverse osmosis was shown to be the most viable option for Pennsylvania. The estimated capital expense for treating just the volume of water reported in one survey estimate would cost the mining industry \$1.325 billion. Annual operating and maintenance costs would be close to \$133 million. The coal industry also estimated that it would take about 2 ½ - 3 years to implement the reverse osmosis treatment option (assuming no difficulties or delays). That time line already surpasses the implementation date of the proposed rule (Jan. 1, 2011.)

Natural Gas Industry

The natural gas industry presented a preliminary sector analysis to DEP's WRAC on November 10, 2009. The industry reported that several residual produced water treatment and disposal options were available including conventional/pre-treatment – metals and suspended solids (TSS) removal, mechanical evaporation, TDS brine concentrator, and deep well injection. The estimated cost of implementing a solution could cost as much as \$50 million annually. The industry estimated that lead times of at least one year would be needed for permitting and equipment orders. It should also be noted that significant advances in recycling wastewater have been made, and though the industry intends to invest further in exploration and innovation, natural gas producers understand the need to continue to treat a growing wastewater stream.

As indicated above, it would cost billions of dollars in capital investment and hundreds of millions of dollars more in annual operating costs to implement TDS treatment systems. Additionally, any TDS treatment would generate much higher CO₂ and air emissions if the treatment systems were applied, and they would create increases in landfill disposals. This is especially concerning since there has been very limited data collection and analysis of the problem and clarity into the environmental benefits.

Additionally, it is important to consider the affect that this regulation will have on municipal sewage treatment facilities. Systems that do not upgrade their facilities at significant cost would be prohibited from accepting natural gas production wastewater, eliminating any role that this existing public infrastructure might potentially play in addressing the TDS issue.

The impact of the proposed rule would create potential “shut down” conditions for many affected employers and would mean a loss of jobs and investment in the state. The lack of cost-effective treatment options severely hinders the competitiveness of many industries that do business inside the Commonwealth. These regulations would have a severe implication on municipal sewage treatment facilities and their ability to afford treatment options. Thus we urge the Department to consider the high cost of compliance to not only businesses, but also local governments, when considering the proposed regulation.

Summary

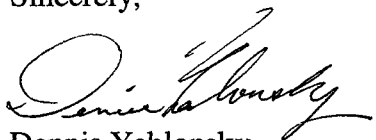
The Department should not proceed with advancing the proposed rule and should conduct more extensive data collection and analysis in order to determine the nature of the problem. We strongly encourage the Department to follow its own Advisory Committee’s recommendations and not move forward with any rule until that analysis is complete. The Department’s own Water Quality Network data indicate TDS spikes are not a new condition that requires a crisis response. If a problem is adequately defined and a new regulation is necessary, we recommend that the Department not arbitrarily regulate a 500 parts per million end-of-pipe limit on all new TDS discharges, which would require industrial discharges to meet drinking water quality for TDS. Instead, the Department should identify and implement more effective and appropriate techniques, which could include:

- Real-time management of discharges where possible;
- A pounds-per-day discharge limit;
- A chemical approach that regulates hardness;
- Allowing publicly owned wastewater treatment to participate in treating oil and gas discharge water where appropriate.

There are likely other concepts and ideas that could be identified if a stakeholder process with sufficient time and resources were undertaken.

Thank you once again for the opportunity to comment on the proposed permitting strategies regarding the TDS wastewater discharges. If you have any questions, please feel free to contact me at dyablonsky@alleghenyconference.org or (412) 281-4783 x3125.

Sincerely,

A handwritten signature in cursive script, appearing to read "Dennis Yablonsky".

Dennis Yablonsky
Chief Executive Officer
Allegheny Conference on Community Development

