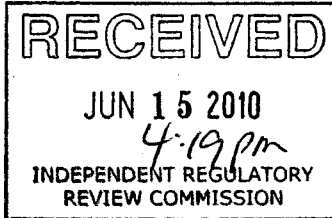




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Pennsylvania Waste Industries Association
P.O. Box 968, Harrisburg, Pennsylvania 17108

June 14, 2010

By FedEx and e-mail to RegComments@state.pa.us

Environmental Quality Board
Rachel Carson Building
16th Floor
400 Market Street
Harrisburg, PA 17105-2301

Re: Proposed Rulemaking
25 PA Code Chapter 93, Ambient Water Quality Criterion; Chloride (Ch)

Dear Board Members:

The Pennsylvania Waste Industries Association (PWIA¹) recognizes and fully supports the protection of all surface water and groundwater within the Commonwealth of Pennsylvania, while advocating rational environmental policies and sound science based approaches in regulating our members' ability to safely and economically manage the Commonwealth's solid waste.² PWIA appreciates that the Chapter 93 proposed rulemaking was prompted by concerns with levels of chlorides in the Monongahela River basin in the fall of 2008, during a period of seasonal low flow, and the ensuing fear that levels could potentially be increased in that basin and, possibly, in other stream segments in the state (presumably by significant new discharges from the expanding Marcellus Shale gas extraction activities). However, PWIA is concerned that the proposed rulemaking was presented without appropriate evaluation of the significant impacts or expansive ramifications of the proposed limitations. Further, PWIA questions whether the measures that are under review by the Independent Regulatory Review Commission to strictly regulate significant new discharges with high total dissolved solids (TDS), obviates the need for the proposed chloride limitations. PWIA appreciates the opportunity to provide these comments to the Environmental Quality Board.

¹ PWIA is the Pennsylvania chapter of the National Solid Wastes Management Association, a non-profit organization that represents the interests of the North American waste service industry. PWIA members include both privately-held and publicly-traded companies that own and operate numerous commercial solid waste facilities throughout the Commonwealth. In addition to solid waste landfills, our members operate resource recovery facilities, recycling facilities, transfer stations and collection operations. Two of PWIA's primary missions are to advance the safe, efficient and environmentally responsible management of solid waste, and to promote sound public policy in rulemaking that affects the management of solid waste.

² PWIA notes that the EPA study relied upon by the Department in support of the proposed chloride limits is relatively old, and may be outdated (1988). Refer to the comments being submitted by the Pennsylvania Chamber of Business and Industry.

By way of background, the solid waste industry contributes \$3 billion dollars per year to Pennsylvania's economy, and accounts for 31,500 jobs, \$904 million in annual employee earnings and in excess of \$131 million in state refuse taxes and approximately \$49 million in municipal host payments.³ There are 47 permitted and operating landfills in the Commonwealth, each of which is a highly engineered and heavily regulated system designed to protect the environment. Each has significant capital investments in land, equipment and improvements, including air, water and leachate monitoring, handling and treatment features and facilities.⁴ The quantity and quality of wastewater effluent from these operations is well documented, well managed and appropriately treated to ensure protection of the environment, all in accordance with existing state and federal regulatory best available technology requirements and effluent limit guidelines applicable to the sector. See, 40 C.F.R. Part 445, Subpart B – RCRA Subtitle D Non-Hazardous Waste Landfill.

I. Chloride Loading from Landfill Discharges are Relatively Small.

PWIA has analyzed the chloride levels in the discharges from the permitted and operating landfills in the Commonwealth and has concluded that even taking all Pennsylvania landfills together, only about 13 tons of chloride loading is attributable daily to the industry. Moreover, this small cumulative loading is spread across the Commonwealth, with no discharge dominating any particular watershed.

Total Chloride in Discharges from Pennsylvania Landfills

	Concentration (mg/L)			Loading (tons/day)	
	Low	High	Average	Average	Total all 47
Chloride	11	5,250	1,400	0.27	13

NOTE: Monitoring data from each of the 47 landfills was reviewed, and average loading calculations have been flow weighted, where data was available. One outlier has been excluded from the data set.

While chloride loadings associated with landfill discharges are individually and collectively small contributors of chloride into Pennsylvania's streams, it is worth noting that leachate generation volumes at Pennsylvania landfills are directly related to rainfall – i.e., the amount generated goes up when the amount of rainfall goes up, and the amount generated goes down when the amount of rainfall goes down. As such, periods of high landfill discharges correlate to periods of high stream flows, and the correspondingly greater assimilative capacity in those streams to handle any increased chloride loadings.⁵ Conversely, low

³ See, *The Economic Impacts of the Municipal Waste Collection Transportation, and Disposal Industry in Pennsylvania* Report, dated December 2007, prepared by Econsult, Inc. for PWIA, available at http://www.pawasteindustries.org/economic_impact.asp.

⁴ See, Typical Sanitary Landfill Design at http://www.pawasteindustries.org/landfill_design.asp.

⁵ The Department has acknowledged that chloride concentrations have not been an issue in the two stream segments of the Monongahela River basin during periods other than the noted low flow conditions.

stream flow conditions (as was the case in the Monongahela River basin during the period of concern) occur during periods of less rainfall. Less rainfall corresponds to less landfill discharge, and a resultantly lower loading to the stream receiving the discharge. In other words, the average landfill generates less than the average 0.27 tons of chloride per day during periods of low stream flow, when the assimilative capacity of the receiving water body might be of concern. As such, there is no apparent need to include the landfill industry within the proposed rulemaking.

To better understand the limited amount of chloride loading from the landfill industry, compare that, in 2009, Pennsylvania applied to the 40,000 miles of state roadways approximately 914,000 tons of road salt – sodium chloride – in addition to the massive quantities used by counties, local municipalities and homeowners.⁶ This produces a loading to streams on the order of 2,500 tons per day on average. When compared to the 13 tons per day from landfill discharges, clearly, road salt is a far more significant concern for chloride loadings to the waters of the Commonwealth. Yet, the proposed Chapter 93 standards do nothing to regulate the much more significant and pervasive source of chloride from roadway runoff, and as such, the proposed standards are not likely to result in the claimed benefit that the rule will “provide the appropriate level of protection to preserve the integrity of existing and designated uses of surface waters in this Commonwealth.” Preamble to Proposed Rulemaking, Ambient Water Quality Criterion; Chloride (Ch), 40 Pa. B. 2264, May 1, 2010, Section E. Benefits, Costs and Compliance, paragraph 1.

Simply put, landfills are neither the source of nor the fix to chloride issues that may exist in select surface waters.

II. PADEP’s Proposed Chloride Standards Have Profound Technical and Economic Feasibility Issues, and Will Likely Result in Significant Energy and Air Impacts.

PWIA understands that the proposed chloride standards are water quality based effluent limitations, and as such, are less directly influenced by the availability of treatment technologies and relative costs. Nonetheless, these factors are important considerations for all regulations, and the description of compliance costs in the proposed Rulemaking should more fully discuss the real and significant impacts of these factors. This information should be used by the Department and the Board in determining whether and how best to address chloride risks from wastewaters. In particular, the Department acknowledges that available treatment methods for chloride, like TDS, include only reverse osmosis and crystallization/evaporation. However, the discussion of cost implications in the proposed rulemaking fails to provide the practical perspective that these methods impose very large capital and operating costs on an industry which contributes very little to the chloride loading equation. Based on estimates provided by vendors, the capital costs for reverse osmosis (RO) treatment of landfill discharges of between 0.025 million gallons per day (MGD) to 0.10 MGD range from \$1.4 to \$3.1 million, with annual operation and maintenance costs ranging from \$259,000 to \$665,000. Obviously, multiplying these estimates across the 47 permitted

⁶ News article in the Times Leader, Wilkes-Barre, Pennsylvania, dated December 15, 2009.

and operating landfills in Pennsylvania imposes a huge financial cost to the industry – again, without addressing a source with far greater impact – road salt treatment.

As conventional treatment processes in place would need to remain, an RO treatment system would represent significant new capital and operating costs to handle the relatively small loadings associated with the landfill wastewater discharge.

When the Environmental Protection Agency (EPA) issued its final rulemaking for Effluent Limitations Guidelines, Pretreatment Standards and New Source Performance Standards for the Landfills Point Source Category on January 19, 2000, 65 Fed Reg. 3008 – 3051, the agency rejected reverse osmosis as a potential treatment technology for landfills due to the high associated potential increase in the cost of operating such systems and correspondingly small incremental removal benefits created.⁷ Worth noting, the EPA made the determination that the costs outweigh the benefit, without even considering the additional costs to treat the liquid concentrate (reject) that results from the reverse osmosis process. Treatment of that reject, which by volume is in the range of 40% of the initial flow, requires significant additional capital and operating costs (and raises very real concerns with secondary energy and air impacts, discussed below.) Specifically, following RO processing, the residuals need to be properly stored, managed, treated and disposed. Treatment of RO residuals is limited to one option - evaporation. Evaporation systems have high capital costs, in the range of \$2 million for a small 0.02 MGD. The cost of operating an evaporation system is projected in the range of \$1 million annually to evaporate a 0.02 MGD discharge volume. These costs are approximately five times higher for a landfill with a 0.10 MGD discharge volume.

The Department's evaluation of costs as presented in the proposed rulemaking omits the significant capital and operating costs required to further treat reject from the reverse osmosis treatment system.

However, evaporation systems are even more problematic for the Pennsylvania municipal waste industry in that the obvious fuel capable of being utilized for an evaporation system, landfill gas, is often unavailable for that use due to existing contracts that dedicate this resource for renewable energy projects. As such, to operate the evaporators, a Pennsylvania landfill operator would likely be required to obtain an alternative fuel source – e.g., natural gas. Combustion of an alternative fuel, even natural gas, results in air emissions that should be considered. PWIA estimates that the air emissions associated with evaporation of 0.02 MGD of concentrate from an RO process would be in the range of 6 tons per year (tpy) of NOx emissions, 5 tpy of CO, 0.33 tpy of VOCs, 0.036 tpy of SO₂, 0.139 tpy of Methane (3.46 tpy as CO₂ equivalent) and 7,227 tpy of Carbon Dioxide.⁸ Again, PWIA questions

⁷ See, *Economic Analysis of Final Effluent Limitations Guidelines and Standards for the Landfills Point Source Category*, EPA-821-B-99-005 (November 1999), at page 1-15, available at: (<http://yosemite.epa.gov/eepa/ria.nsf/vwRef/W.99.11?OpenDocument>).

⁸ Based on boiler emission estimates of Conventional Pollutants and Green House Gases, per AP-42 5th Edition, Section 1.4, Tables 1.4-1 and 1.4-2.

whether these effects on the Commonwealth's natural resources were adequately considered by the Department in connection with the proposed rulemaking.⁹

Such potential energy and air impacts were considered by the US EPA when issuing the Effluent Limitations Guidelines. Those guidelines properly do not impose discharge limitations for chloride on the municipal waste landfill sector.

II. Pending Rulemaking Obviates the Need for The Proposed Chapter 93, Ambient Water Quality Criterion for Chloride.

PWIA understands that the Department is concerned with potential increases in chloride levels in Pennsylvania streams. However, the Department has already proposed, and the Environmental Quality Board has recently recommended new rulemaking, entitled 25 PA Code Chapter 95, Wastewater Treatment Requirements, which will impose stringent new technology based effluent limitations on new significant discharges of chloride.¹⁰ Of note, the effluent limitation that would be imposed by that rule will set the chloride discharge concentration at 250 mg/l. When considered against the 230 mg/l level allowed under the Chapter 93 rules, which take into consideration the assimilative capacity of the receiving stream, it is apparent that the Chapter 95 rules will dictate the limit for almost all substantial new chloride loadings. As such, the Chapter 95 rulemaking would appear to provide adequate protection of Pennsylvania's streams, without excessive or duplicative regulation.

PWIA offers the following conclusions:

- The principal sources of chloride in Pennsylvania streams (road salt) is not being addressed by the proposed rulemaking.
- Pennsylvania municipal solid waste landfills, individually and collectively, contribute relatively small loadings of chloride.
- The proposed rulemaking does not adequately identify the significant capital and operating costs to treat landfill effluent using reverse osmosis and evaporation systems.
- The proposed rulemaking does not adequately identify the ancillary impacts to air and water resources associated with the treatment of landfill effluent using reverse osmosis and evaporation systems.

⁹ Equally troubling is the idea that a potential outlet for the solid residue generated from the evaporation of the RO reject would be as a substitute road salt material used for highway de-icing – as this very costly removed chloride load would end up simply being washed into the Commonwealth's streams during runoff events, like so much of the current road salt. PWIA assumes that this odd result is not the preferred approach to managing chloride loadings to the Commonwealth's streams.

¹⁰ The pending Chapter 95 rules will also impose effluent limits on new significant discharges of total dissolved solids and sulfates.

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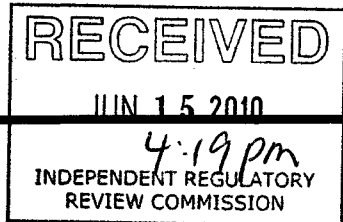
- The currently proposed Chapter 95 regulations adequately protect Pennsylvania streams from potential increases in in-stream chloride concentrations that may result from significant new sources of chloride loading.

Based on the foregoing, PWIA recommends that the EQB suspend review of this rulemaking, and that the Department continue to work with the Water Resources Advisory Committee to gather the necessary background information to properly identify whether the proposed regulation of chloride is appropriate, and if so, what limitations might be applicable based on more up to date information. More representative costs and potential treatment impacts should be considered in determining whether and to what extent additional regulation is needed.

Thank you for the opportunity to comment on the Proposed 25 PA Code Chapter 93 Rulemaking. Please feel free to contact me directly should you wish to discuss our comments in more detail.

Tim O'Donnell, P.E.
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From: Buzzell, David W. [David.Buzzell@dbr.com]
Sent: Monday, June 14, 2010 5:22 PM
To: EP, RegComments
Cc: Tim.O'Donnell@republicservices.com
Subject: Proposed Rulemaking - 25 PA Code Chapter 93, Ambient Water Quality Criterion; Chloride (Ch)
Attachments: PWIA - Comments to Chapter 93 Chloride.pdf

Please find attached comments submitted on behalf of the Pennsylvania Waste Industries Association to the Proposed Rulemaking, 25 PA. Code Chapter 93, Ambient Water Quality Criterion; Chloride (Ch). Kindly confirm receipt by reply email. Thank you for your assistance in this regard.

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Thank you very much.
