FWEA Utility Council

Protecting Florida's Clean Water Environment

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June 1, 2016

Eric Shaw
Environmental Manager
Standards Development Section
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 6511
Tallahassee, FL 32399-2400

Re: Human Health Based Criteria

Dear Mr. Shaw:

The Florida Water Environment Association (FWEA) Utility Council submits the following comments in response to the Department's proposed Human Health Criteria as presented at the rule development workshops held May 10, 11 and 12, 2016.

The FWEA Utility Council is the voice of Florida's domestic wastewater treatment community. Its members operate domestic wastewater collection, treatment, disposal, and reuse facilities. Utility Council members provide essential infrastructure services to over 9 million Floridians. Utilities across the State have invested millions of dollars upgrading wastewater treatment systems to remove pollutants before safely discharging or reusing the treated effluent.

The Utility Council supports the Department's development of reasonable science-based surface water criteria where real and demonstrable environmental benefit will result from compliance costs incurred by Florida's wastewater utilities. Criteria that are not based on sound science result in unnecessary costs to wastewater utilities as they spend millions of dollars to meet criteria that will not result in tangible environmental benefit. Even a small change in an existing criterion could result in utility council members spending millions of dollars in capital projects to meet a new water quality target.

If the cost of compliance outweighs the environmental benefit, or the lack of science results in a criterion with little or no environmental relevance, the adoption of the new or amended criteria result in economic waste drawing limited, and most often public, resources away from more environmentally effective projects and investments. Utility Council members must be ever vigilant to ensure that funds expended will result in real benefit to their rate-paying customers.

To that end, the Utility Council has consistently worked with the Department to provide detailed comments and analyses as to the real world impact of the Department's regulatory initiatives.

As to the Department's proposed Human Health Criteria, the Utility Council provides the following comments.

Basis of Criteria

The Department has proposed new or revised Human Health Criteria in past rulemaking efforts that were never finalized. The Utility Council has consistently expressed concern as to the scientific basis of the Human Health Criteria. While the Department has stated that it is using the most recent data in its calculation of the new and revised criteria, it remains true that the criteria are the product of totally unrelated collections of data assembled for unrelated purposes.

Fish Consumption

In past efforts, the Department used fish consumption estimates from a telephone survey published in 1994. The Utility Council has questioned the relevance of that study in light of the proliferation of corner sushi bars and consumer access to fish from all over the world at modern supermarkets. For the criteria as recently proposed, the Department relied on newer information from the federal NHANES database. This data is also based primarily on telephone surveys drawing on an individual's recollection of recent seafood consumption and fish consumption habits. The NHANES dataset is not Florida specific and fish/seafood consumption is one of numerous parameters monitored by survey. In sum, as with the 1994 Degner study, the Department is still relying on information from telephone surveys that at best can provide a very gross and inaccurate estimate of real life fish consumption.

Toxicity – Carcinogenicity

The health risk presented by a particular parameter is determined by consulting EPA's IRIS database for information on its toxic nature or tendency to increase the risk of cancer in response to chronic exposure. While EPA updates the IRIS database as to particular parameters from time to time, the majority of the studies relied upon EPA are very dated and based on very limited data. For example, the toxicity assessment for bromoform, a common trihalomethane, was last updated by EPA in 1987; the cancer risk assessment for bromoform was last updated in 1990. The latest information as to any public health risk presented by bromoform is 25 to 30 years old. To derive an ambient criterion for surface waters, this very dated data is combined with inaccurate, at best, telephone survey information and then combined with either a biological concentration or biological accumulation factor.

Bioconcentration-Bioaccumulation

The Department relied upon EPA recommended bioaccumulation factors (BAF) and bioconcentration factors (BCF) for the majority of its proposed criteria. But EPA's numbers were based on a variety of sources in lieu of one specific scientifically robust methodology. The Department notes in its Technical Support Document:

> EPA reviewed the available data and information for 94 parameters and developed recommended national trophic level specific BAFs for 74 of the parameters. The agency had sufficient laboratory and field data across the three trophic levels to develop BAFs based on field measured BAFs for 11 parameters (priority A., above) and estimate BAFs from field measured BCFs for 4 parameters (priority B., above). The agency also developed trophic level-specific BAFs for an additional 59 parameters using the K_{ow} approach (priority C.). There were a remaining 21 parameters for which there were insufficient laboratory or field BCF/BAF data across all three trophic levels and the K_{ow} methods was not applicable per the decision framework, and for these parameters, BCF values were used.

In other words, EPA had limited field data supporting the BAF for only 11 parameters. The remainder were calculated by equation (the Kow approach) or based on dated BCF studies. The Department then modified some of the BAF and BCF factors to make them more Florida specific. In sum, none of the BAF or BCF factors are based on a sufficient set of real data relating the uptake of a particular pollutant by fish or other seafood and the resulting exposure to the public based on consuming that fish or seafood.

The Utility Council acknowledges that this approach to deriving Human Health Criteria is prescribed by EPA and the Department has attempted to adapt the procedure to derive more accurate criteria than those finalized by EPA in 2015. However, the fact remains that the purpose of the criteria are to protect human health by protecting the public from exposure to toxic and or carcinogenic materials discharged to surface waters, accumulated in fish and seafood, and consumed by individuals. The criteria purport to protect human health by establishing an ambient concentration of a particular parameter. Each of the three sets of data relied upon to derive the criteria are inherently crude and inaccurate. Combining these disparate sets of data compounds the error inherent to each database resulting in criteria that are far removed from the stated goal of protecting public health.

The Probabilistic Approach

The Department has applied a probabilistic approach to deriving its proposed criteria. The Utility Council supports such an approach in concept as a more scientifically sound method of deriving criteria. However, a probabilistic approach is only as good as the underlying data. As discussed herein, the Utility Council does not believe that the various sets of data relied upon by DEP can be combined to establish an ambient surface water criterion remotely related to human health.

Implementation of Criteria

Many if not most of the proposed criteria are below the minimum detection level (MDL) for the parameter. However, Department rules require that where a parameter is not detected, one-half the MDL, or half of the criterion concentration, is reported as if the substance were detected. The proposed criteria are expressed in concentrations so low that it would not be difficult to have a false positive, e.g. resulting from contamination during sampling or in the laboratory, at which point the reporting of one-half the MDL or criterion values become significant although none of the material was actually detected for those samples. In many cases, the facility would have to take an enormous number of samples for the effect of a single false positive to be placed in the proper context.

The following example illustrates the problem. The Class III marine criterion for Aldrin is $\leq$0.0000038 ug/L as an annual average with a single sample maximum of $\leq$1.3 ug/L. The MDL is 0.02 ug/L. By rule, non-detects of Aldrin would result in reporting a value of one half the MDL or one-half the criterion whichever is less. For Aldrin, a facility would have to report 0.0000019 ug/L, one half the criterion. If a facility measured a concentration on any one day of 0.0200001 ug/L, barely above the MDL, and every other daily sample for that year comes back undetectable with the facility reporting those values as 0.0000019 ug/L as required by rule, the annual average would still be above the limit at 0.0000567 ug/L. To comply with the <0.0000038 ug/L criterion, the facility would have to take an additional 10,256 samples—even though no Aldrin was actually detected.

If the exceedance was an error, it would take the facility over ten thousand samples to sample its way out of the error. If the exceedance were real, e.g., someone improperly disposed of the banned substance, the one sample would create the impression of a chronic problem because of the legacy effect of averaging the one exceedance with the artificial value of one half of the criterion.

During the Department's last triennial review, the Utility Council provided comments by letter dated October 13, 2015, requesting that the Department address a number issues created by the Department's reporting requirements linked to the MDL and PQL (practical quantification limit). The Department did not act on those requests and the latest proposed Human Health Criteria once again illustrate the problems created under DEP's current approach to addressing parameters that are not detected.

Bis-phthalate

The Utility Council must once again express its concerns with the proposed criteria for bis-(2-ethyl-hexyl)-phthalate also referred bis-phthalate or as DEHP. The Department has proposed a criterion of 1.5 ug/L for Class I waters and 2.1 ug/L for Class III. These numbers are the latest set of numerous sets of proposed criteria for bis-phthalate with some as high as 3.1 ug/L for Class I and 11.3 ug/L for Class III waters. The bis-phthalate criteria proposed now are much more conservative than those released by DEP in a technical support document in February of 2014 which the

Department maintained were protective of human health. Since 2012 there have been at least half a dozen different sets of criteria with each one said to be *the* criteria protective of human health.

Bis-phthalate is particularly problematic because the chemical is everywhere in the environment. The criteria as proposed are a fraction of the 6 ug/L maximum contaminant level (MCL) under the Safe Drinking Water Act which is the same concentration allowed by the federal Food and Drug Administration (FDA) in drinking water bottled in plastic bottles.

DEP did not take its DEHP criteria to the ERC in April of 2013 in response to comments from regulated interests. Instead, DEP sampled effluent from a number of Florida facilities, using DEHP-free tubing in its sampling equipment, and did not detect exceedances. Notwithstanding the Department's sampling effort, DEHP is detected in effluent from time to time. Because DEHP is found in virtually all plastic products, identifying the source of the DEHP poses a challenge to operators. The source could be as simple as an operator not changing over to DEHP tubing in lab equipment used to assess the water sample or it could be from companies that use plastic materials putting plastic wastes down the drain.

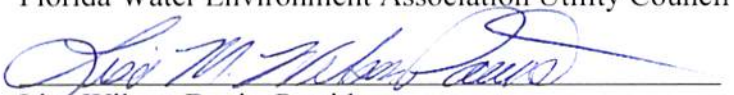
The ubiquitous nature of DEHP calls into question the human health benefits of the Department's extremely stringent ambient criterion for the plasticizer. In sum, it is difficult to understand how these latest proposed criteria for bis-phthalate can be said to the correct scientifically sound numbers that will protect the public from exposure to the chemical from fish consumption—the average person consumes orders of magnitude more bis-phthalate from foods cooked or wrapped in plastic or from bottled water.

Conclusion

The Utility Council and its members appreciate the Department's efforts to derive scientifically supportable Human Health Criteria for Florida's waters and are pleased to have been given this opportunity to provide these comments. Having carefully reviewed the criteria proposed, the Utility Council cannot conclude that the criteria are related to, or protective of, human health notwithstanding the hard work and sincere efforts of Department scientists. The basic premise for the criteria, the comingling of data from of totally unrelated databases to derive an ambient concentration protective of human health, is too high of a legal and technical hurdle to clear. This, combined with the real world impact of the minute ambient concentrations making up the criteria, make the criteria unsupportable by Florida's wastewater treatment/reuse community.

Thank you for your careful consideration of these comments.

Florida Water Environment Association Utility Council



Lisa Wilson-Davis, President