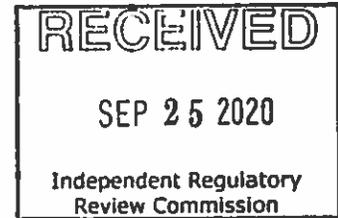




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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HEALTH

September 24, 2020

Dear Environmental Quality Board:

Pennsylvania Department of Health (DOH) provides the below comments regarding the Environmental Quality Board's (EQB) proposed rulemaking on the water quality standard for manganese and the implementation of that standard. The proposed rulemaking presents to the Environmental Quality Board (EQB) the adoption of a numeric water quality criterion for manganese designed to be protective of human health. This proposed standard would be added to § 93.8c Table 5 - Water Quality Criteria for Toxic Substances, and the existing Potable Water Supply criterion of 1.0 mg/L, found in § 93.7 Table 3, would be deleted. The proposed numeric human health criterion of 0.3 mg/L for manganese is more stringent than the existing Potable Water Supply criterion of 1.0 mg/L and includes the protection of the Potable Water Supply use. Since this numeric criterion will be included in Table 5, it should apply in all surface waters of the Commonwealth, consistent with § 93.8a(a) (relating to toxic substances), and the Department's Water Quality Toxics Management Strategy – Statement of Policy (25 Pa. Code Chapter 16).

According to ATSDR Tox FAQ®, the general population may be exposed to manganese through the consumption of food, water, and the inhalation of air, along with dermal contact with air, water, soil, and consumer products that contain manganese. Manganese is an essential nutrient required as a cofactor for a variety of enzymes; however, high oral levels of exposure can also result in adverse neurological effects.

Regulatory impacts of shifting the surface water manganese criterion from the Potable Water Supply Criterion in section 93.7 Table 3 to section 93.8c Table 5 Water Quality Criteria for Toxic Substances notwithstanding, the DOH generally supports the reduction of water quality criterion of manganese regulated in the Commonwealth's surface water. To prevent a gap in public water protection, we support the adoption of the rule change into section 93.8c prior to the elimination of regulatory oversight covered in section 93.7.

ATSDR's chronic reference dose media evaluation guide (RMEG) represents concentrations of substances in water, soil, and air that humans may be exposed to daily for a lifetime without experiencing adverse health effects. The RMEG for manganese is 0.350 mg/L for children, and DOH supports that the proposed rule change is lower than the ATSDR RMEG for manganese. Although it is highly unlikely that the primary water consumption for a child would come from a water body such as a stream, river, or lake, the overall reduction of contaminants such as manganese in surface water attenuates the risk of non-regulated exposures to manganese due to incidental or intentional ingestion of surface waters or dermal exposure due to recreation.

The primary route of exposure for manganese in Pennsylvanians is water consumption. The enforceable national safe drinking water standard (SDWS) for manganese is 0.05 mg/L. This drinking water standard will be unaffected by this proposed rule change. However, due to whether this rule is applied to the discharge into or withdrawal from surface waters, the potential of elevated levels of surface water manganese may exert an impact on human health. Given below are the potential implications of selecting the point of compliance (i.e., point of withdrawal vs. point of discharge) for the proposed rule.

Point of withdrawal as the point of compliance: If the enforceable criterion of 0.3mg/L of manganese is applied at the point of withdrawal from surface water, activities most directly associated with dietary

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exposures such as public water providers, cattle watering, bottled water facilities, food production, etc., would be most affected. Although many of these uses of surface water are already mandated by various agencies to comply with the SDWS of 0.05mg/L, comprehensive adherence or enforcement of this standard may not be present in every instance. Overall, the regulation of manganese at withdrawal will provide some additional protection from excessive levels of manganese entering the diet from food and food product sources.

However, if the discharge is not concurrently regulated by this rule change and the existing limit of 1.0 mg/L is removed from 25 Pa. code chapter 93, it is likely that environmental levels of manganese will substantially increase. Although public water providers would still be required to maintain the SDWS of 0.05mg/L, comprehensive compliance to the SDWS for manganese may become costly and impractical; not to mention, the unanticipated environmental health impacts of unregulated levels of manganese being released into the commonwealth surface waters.

Point of discharge as the point of compliance: Enforcing the rule change at the point of discharge into surface waters may lead to the reduction of anthropogenic sourced levels of manganese in commonwealth surface waters, which would provide protection of multiple uses of surface water. Additionally, a lower criterion for manganese enforced at discharge would allow for easier compliance to the SDWS of 0.05mg/L for the various end-users of surface water, which fall under EPA/FDA/USDA regulation. A potential drawback of this application is that the unregulated entities which produce food products that enter the human diet might not control for manganese levels in the surface water they withdraw. However, a potential 66% reduction in surface water levels of manganese combined with dilution effects and bio/metabolism/sequestration may minimize these risks. It is unlikely that citizens would be directly exposed to undiluted discharge water from a point source emitter. Still, without a regulation to control for manganese at discharge into publicly accessible water, it is possible citizens and the aquatic wildlife they might harvest and consume could be exposed to unknown levels of manganese at discharge locations.

The DOH believes that the most optimal option which provides the highest level of protection to humans from hazardous levels of anthropogenic sources of manganese in surface waters is to apply the reduction of manganese in surface water to discharge and withdrawal sources. However, we acknowledge this may not be feasible. If only one application of this rule can be applied, regulating manganese at discharge would be more protective of human health in the Commonwealth.

Sincerely,



Rachel L. Levine, MD
Secretary, Department of Health
Commonwealth of Pennsylvania