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September 12, 2022

Independent Regulatory Review Commission
333 Market Street, 14th Floor
Harrisburg, PA 17101
Submitted via email to irrc@irrc.state.pa.us

RE: Environmental Quality Board Regulation #7-553: Water Quality Standard for Manganese and Implementation

Dear Members of the Independent Regulatory Review Commission (IRRC),

The Appalachian Region Independent Power Producers Association (ARIPPA), on behalf of its member companies, hereby provides comment on the Environmental Quality Board's (EQB) proposed final rule to amend 25 Pa. Code Chapters 93 and 96 (relating to water quality standards; and water quality standards implementation). The amendments as adopted by the EQB delete manganese from Table 3 in § 93.7 (relating to specific water quality criteria) and add manganese to Table 5 in § 93.8c (relating to human health and aquatic life criteria for toxic substances).

ARIPPA believes the amendments to delete manganese from Table 3 in § 93.7 and classify manganese as a toxic substance under Table 5 of § 93.8c are not necessary to protect human health until a more comprehensive and appropriate health study is completed prior to adopting such a rule to determine if manganese concentrations above 0.3 milligram per liter (mg/L) are actually a risk to human health. At this time, this change is not necessary as the current manganese effluent limitations of 1.0 mg/L specific water quality criteria for the Potable Water Supply (PWS) critical use (25 Pa. Code §93.7, Table 3) is protective for human consumption.

Further, the U.S. Environmental Protection Agency's (EPA) manganese limit for drinking water based on "national-recommended-water-quality-criteria-human-health-criteria-table" from the EPA website states that, "The Human Health for the consumption of Water + Organism criterion for manganese is not based on toxic effects, but rather is intended to minimize objectionable qualities such as laundry stains and objectionable tastes in beverages." EPA does not identify manganese in its "national-recommended-water-quality-criteria-aquatic-life-criteria-table" as a pollutant of concern (not listed). The categorization of manganese as a toxic is not warranted and further EPA has established limits that were in existence in Pennsylvania's Chapter 93 regulations.

Additionally, the proposed final rule fails to comply with Act 40 of 2017 (Section 1920-A of the Administrative Code of 1929) that mandated the EQB to promulgate regulations requiring the water quality criterion for manganese must "be met, consistent with the exception in 25 Pa. Code § 96.3(d) (relating to water quality protection requirements)." The Department of Environmental Protection (DEP) attempted to circumvent this statutory requirement by simply including two alternatives for a point of compliance with the manganese water quality standard in the initial proposed rule: the point of all existing or planned surface potable water supply withdrawals; or all surface waters (that is, near the point of discharge). However, by choosing not to place

compliance at the point of existing or planned surface PWS withdrawals in the proposed final rule consistent with Act 40 of 2017, the final rule clearly violates both the plain language and the legislative intent of Section 1920-A of the Administrative Code of 1929.

It needs to be recognized that in the case of coal mining the Federal Effluent Limitation Guidelines (ELG) for Coal Mining have established minimum levels of treatment for manganese, which is dependent on the type of coal mine discharge. Further, the proposed rule could impact Pennsylvania's remaining program efforts, which formed the basis for the EPA ELG for sites with pre-existing discharges.

The regulation EQB adopted to classify manganese as toxic with the new 0.3 mg/L standard applied to all reaches of the stream to protect human health will be detrimental for the cleanup of abandoned mine land (AML) sites in Pennsylvania by making the process more expensive and leading to bankruptcies within the mining industry adding to the state's long term AML obligations. By adding to their financial burden, the proposed regulation may expediate the closure of the state's coal refuse reclamation-to-energy facilities. This will lead to an increased burden on the Pennsylvania taxpayers resulting in billions of dollars of unremediated environmental detriment to land, air and water quality and higher AML reclamation costs to the state.

Coal Refuse Reclamation-to-Alternative Energy Industry Background

Organized in 1989, ARIPPA is a nonprofit trade association based in Camp Hill, PA comprised of independent electric power producers, environmental remediators, and service providers that reclaim polluting coal refuse in a manner that generates electricity and produces environmentally beneficial ash used in abandoned mine land reclamation. The association represents the 10 unique environmentally beneficial environmental reclamation-to-energy facilities located in Pennsylvania that remediate AML by utilizing circulating fluidized bed (CFB) boiler technology to convert coal refuse into alternative energy and steam.

These plants play a critical role in environmental remediation in the coal regions where they are located by removing polluting coal refuse piles, remediating and reclaiming mining-affected lands, and reducing or even eliminating surface and groundwater pollution caused by acid mine drainage (AMD) from coal refuse piles. By converting coal refuse into alternative energy, ARIPPA member facilities are removing one of the principal sources of contamination to surface water and groundwater in the bituminous and anthracite coal mining regions of Pennsylvania. In addition, ARIPPA plants work closely with state environmental agency officials, various local watershed groups, and environmental groups such as Earth Conservancy, the Western Pennsylvania Coalition for Abandoned Mine Reclamation (WPCAMR), and the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR), to reclaim abandoned mine lands and convert polluted streams into clean and usable waterways.

Since its inception, the coal refuse reclamation-to-energy industry in Pennsylvania has removed and consumed as fuel more than 230 million tons of coal refuse, improved more than 1,200 miles of streams and reclaimed more than 7,200 acres of previously polluted mining-affected land. At full capacity, this industry can remove about 10 million tons of coal refuse from the environment and reclaim approximately 200 acres of mining affected land in Pennsylvania each year. Through the operation of their facilities, ARIPPA members remove, remediate, and reclaim coal refuse piles that would otherwise remain in communities throughout the coal regions producing acid mine discharges to surface waters and groundwater and uncontrolled air pollution caused by coal refuse pile fires.

These facilities operate under the same rules and regulations as traditional surface coal mining operations despite

the fact that they are involved in environmental remediation. As a precondition to removing coal refuse piles, the permitting rules require companies to obtain a surface mining permit including development of abatement plans for discharges of surface and ground waters. Companies are required to take baseline measurements of water conditions and are liable for any worsening conditions, which creates an economic incentive for the improvement of local water quality and allows improvements to be scientifically quantified.

When considering the limited public dollars for reclamation and remediation of AML sites and the magnitude of coal mining's legacy in Pennsylvania, this industry provides one of the only options for removing coal refuse piles from the environment without shifting the significant cost to public resources. Should that option become unavailable, the entire cost for removal and remediation would fall on taxpayers. The DEP has testified that such costs would reach billions of dollars and require over 500 years to accomplish. For these reasons, EPA, DEP, the Office of Surface Mining Reclamation and Enforcement (OSMRE), and other organizations have long recognized the environmental benefits of the combustion of coal refuse for energy and reclamation.

Comments

Comment – ARIPPA does not believe the proposed final rule adopted by the EQB listing manganese as a toxic substance in Table 5 of § 93.8c is necessary to protect human health.

Manganese is a naturally occurring metal present throughout Pennsylvania's streams. It occurs naturally at low levels in soil, water, and food and is essential for normal physiological functioning in humans and all animal species. In proposing to reduce the manganese discharge limit, we do not believe that the DEP has chosen an appropriate target to safeguard human health.

This proposal treats manganese, a nutrient vital for human health, as if it were a toxic metal like arsenic or mercury. The proposed rule relies on outdated science to label manganese as toxic, utilizing an overly conservative safety factor, thereby proposing a 0.3 mg/L health and human criteria standard. The benefit to the environment and the public is not demonstrated with the proposed rulemaking package, making the substantial cost and effort to achieve compliance inappropriate. We support the contention that the proposed 0.3 mg/L limit is overly conservative and is not supported by more recent studies of human health effects of manganese and that manganese should not be added to the list of toxic substances in Table 5 of § 93.8c.

The regulatory analysis of the proposal should be limited to an evaluation of the critical water use issues. The proposed change should not be expanded to develop new manganese criteria for aquatic life, especially in the absence of criteria recommended by the EPA or surrounding Appalachian states. Using the proposed rule as an opportunity to develop a new water quality standard that is protective of aquatic life seems to be beyond the scope of this rulemaking.

First, there is no federal aquatic life standard for manganese, largely because the EPA acknowledged that there is not adequate science to support the development of such a standard. While manganese has low toxicity to aquatic life, its treatment and removal can be highly dangerous for fish and invertebrates due to the tremendous increase in pH required for manganese removal. Second, Pennsylvania's development of a manganese criterion that is protective of the PWS critical use and no other stream uses or classifications is consistent with the approach utilized in neighboring Appalachian states. The fact that Virginia, West Virginia, Ohio, and Kentucky all have regulations that address the secondary constituent manganese and potable water supply intakes in a similar manner, and which all passed review by the EPA, is worth noting.

Comment – Listing manganese as a “toxic substance” will negatively impact abandoned mine land reclamation in Pennsylvania leading to increased water pollution and added costs to the Commonwealth for mine land reclamation.

Operators of coal refuse reclamation-to-energy facilities are currently spending private money to remediate AML sites that may become too expensive to treat to such low levels of manganese. If this industry is unable to continue reclamation on these and other sites, the responsibility and cost would revert to DEP to carry out this remediation work at a significant cost to Pennsylvania taxpayers. DEP has already identified more than 220 million tons of coal refuse covering 8,300 acres of mining-affected land for which the state receives insufficient resources through the federal AML fund to address. A 2019 study by Econsult Solutions found that the cost of the state to replicate the work performed by this industry would be as much as \$267 million per year.

While the environmental benefits from the proposed final rulemaking will be limited, the financial costs to numerous industries, including the coal refuse reclamation-to-energy industry, will be significant. We anticipate considerable capital costs would be required to expand the treatment footprint and install the necessary treatment equipment at many of the sites. The industry will also see additional operating costs at both plants and reclamation sites. It is possible we will need additional personnel to manage the additional treatment systems. The ELG limit for on-site fuel storage at the plants will lead to increased costs for fuel handling and storage. The industry is already struggling to recoup our environmental remediation costs and would not be able to recuperate these costs in today’s wholesale electric power market.

The labeling of manganese as a toxin may also have other unintended consequences regarding AML remediation. DEP’s latest biennial report lists 27,886 miles of Pennsylvania waters, 2,418 miles more than in its 2020 report, as being harmed by pollution. The report found that nearly 33 percent of Pennsylvania’s rivers and streams do not meet water quality standards for water supply, aquatic life, recreation, or fish consumption. The top three major sources of water quality impairment identified in the 2022 report are: agricultural runoff, 6,432 miles; abandoned mine runoff, 5,536 miles; and stormwater, 3,507 miles. This proposed regulation would increase costs and make it more difficult for coal refuse reclamation-to-energy facilities, mining operators, and groups involved with AML site remediation to prevent this water pollution.

In addition to increasing compliance costs for coal refuse site reclamation, this proposed final rule will likely push already financially strapped coal mining companies into bankruptcy leading to the forfeiture of long-term trust fund sites. Pennsylvania already leads our nation in the number of AML sites without sufficient funds to address their attendant environmental problems. We do not need to add to the existing environmental problem by making AML reclamation more costly or difficult for private companies to remediate these sites.

With the risk of additional bond forfeitures from active sites due to this regulation and other industry trends, this would provide an extra burden to taxpayers and take funding resources away from treating the important parameters at abandoned mine discharges. In fact, manganese would likely be ignored by the DEP at these abandoned sites, which shows the importance of manganese mitigation as compared to other parameters like pH, iron and aluminum. Also, the proposed rulemaking could disincentivize mining operators from treating abandoned mine discharges because of the burdensome manganese effluent limits placed on the dischargers’ National Pollutant Discharge Elimination System (NPDES) permits.

Comment – The point of compliance should be located at the point of withdrawal for public water supplies, as required under Act 40 of 2017.

On October 30, 2017, subsection (j) was added to §1920-A of the Administrative Code of 1929 (Act 40 of 2017). Act 40 directed the EQB to promulgate regulations within 90 days requiring that the water quality criteria for manganese established under 25 Pa. Code Chapter 93 (relating to water quality standards) shall be met consistent with the exception in 25 Pa. Code §96.3(d) (relating to water quality protection requirements).

Act 40 of 2017 required the EQB to make a simple revision to Pennsylvania’s water quality regulations that would provide clarity on the point of compliance for the manganese effluent standard. The insertion of manganese into the list of other water quality criteria found in Chapter 96.3(d) would fulfill the intent of Act 40. However, instead of this simple change, the DEP opted to take a different, far more complex approach. Further, DEP in its initial proposed rule offered two different points of compliance, one that complied with Act 40, and the one that EQB adopted that unlawfully ignores Act 40 completely.

The change to the point of compliance for manganese water quality criteria will not impact the protection afforded to surface PWS withdrawals. DEP should clarify that the change to the point of withdrawal mandated in Act 40 of 2017 will not result in the complete elimination of manganese effluent limits in NPDES permits issued by the state. Rather, the development of technology-based manganese effluent limits would still apply at the point of discharge, such as in circumstances where the applicable jurisdiction of an overarching federal ELG applies, or where reasonable potential analysis completed as part of the permitting process indicates negative impact to a nearby potable water supply intake.

For instance, the federal ELG’s for the coal mining industry 40 CFR §434 prescribe best available, technology-based effluent limitations for various mine drainage categories. The federal ELG limitations of 2.0 mg/L monthly average and 4.0 mg/L daily maximum would apply. As the permitting authority, DEP would maintain the right to define and reassess alternative criteria for facilities classified as post mining areas under 40 CFR §434.11(k). At most, adding manganese to the list of exceptions found in 25 Pa. Code Section 96.3(d) as required by Act 40 of 2017 raises the manganese limit for coal mining discharges from 1.0 mg/L to the federally allowable limit of 2.0 mg/L. In addition, reasonable potential analyses required under the federal NPDES regulations at 40 CFR §122.44 and incorporated at 25 Pa. Code § 92a.44 would continue to be completed.

Placing the point of compliance at the PWS withdrawal is not a novel concept. Every other coal mining state applies the Federal Coal Mine Standard of 2 mg/L at the discharge and utilizes the PWS withdrawal as the point of compliance for manganese. Ohio, Kentucky, Illinois, Indiana and West Virginia all base their manganese standard on the concentration at the PWS withdrawal and there is no evidence that the health of the residents is affected by this point of compliance.

The change to require attainment of the manganese water quality criterion at the point of intake will not result in a significant impact to the potable water suppliers, if implemented appropriately using existing regulatory mechanisms. If the point of compliance was moved to the PWS withdrawal, the same 1.0 mg/L standard would apply. Furthermore, there are already additional protections in place to ensure that manganese levels do not go above 1.0 mg/L at the PWS intake. More specifically, DEP requires all coal operators to conduct a reasonable potential analysis on all coal mining activity NPDES discharges. If the reasonable potential analysis shows that the discharge will result in the PWS intake potentially exceeding the 25 Pa. Code § 93.7 standard of 1.0 mg/L for manganese at the point of intake, then DEP will apply more stringent effluent limits to the NPDES discharge permit in order to protect the PWS.

It is highly unlikely that public water supply operators will see any increases in operating costs as a result of this proposed regulation insofar as any manganese concentration increase in the raw intake water resulting from the proposed regulation will be negligible. Water entering the withdrawal point currently has to be 1.0 mg/L or lower and would stay 1.0 mg/L or lower even if the point of compliance were to be moved. Nothing will change for public water suppliers. With respect to the costs of regulatory change, there have been numbers thrown around that water suppliers would have to spend \$60 to \$80 million in treatment upgrades if the point of compliance would be moved. However, no upgrades should be needed since there will be no change in protection as PWS operators currently have a 1.0 mg/L of manganese protection standard since DEP has placed the point of compliance within the stream. Additionally, the majority of the instream manganese is solid and should be removed at the PWS withdrawal by already standard filtration techniques.

Unlike the water suppliers, the rulemaking as written with the proposing of a 0.3 mg/L health and human criteria standard, if placed at the point of discharge, will impose significant compliance costs only on other industries, including mine land reclamation-to-energy plants who are removing coal refuse piles to produce electricity and reclaim AML sites. The precipitation of manganese comes from the removal of coal refuse and disturbance of soil has the potential to substantially increase treatment costs or require the construction of a treatment system where one may not exist.

Comment: ARIPPA does not believe that the DEP has fully vetted the economic impact of the proposed final rulemaking to list manganese as a “toxic substance.”

- A. How does this impact the classification of streams as to whether or not a total maximum daily load (TMDL) must be prepared?
- B. The proposed rule impacts mine drainage treatment facilities operated by the Commonwealth and could require them to upgrade the treatment levels to control manganese. This increase could be in terms of both operating and capital costs.
- C. What is the impact on Pennsylvania’s Coal Remining Program (Subchapter F of Chapter 87 and Subchapter G of Chapter 88)?
- D. There have been a large number of trust funds established to provide long-term treatment and funding. The proposed manganese rules could result in a significant increase in capital and operating costs and a resulting increase in the amount of money needed in the trust funds that puts these companies at financial risk.
- E. The DEP has not provided an economic analysis as to how this will impact existing industrial manufacturing facilities that have manganese in their discharges.

As such, the DEP needs to provide a comprehensive economic analysis of the changes going from the existing rule to the proposed rule (changing the criteria from drinking water protection to a toxic substance) and the impact based on where the Chapter 93 standard is applied (at the point of discharge or at the point of the downstream use as a PWS).

Conclusion

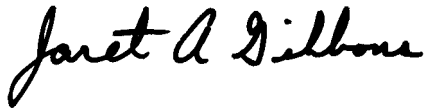
Thank you for the opportunity to provide these comments to the amendments to Chapters 93 and 96 (relating to water quality standards; and water quality standards implementation), Water Quality Standard for Manganese and Implementation. ARIPPA opposes the proposed final rule to reclassify manganese as a toxic substance under § 93.8c, and instead supports establishing the point of compliance at the point of intake for public water supplies, as required under Act 40 of 2017. Not only is this proposed final regulation overly

conservative in its analysis of the toxicity of manganese, but in proposing to set the point of compliance at the discharge it blatantly ignores Act 40 of 2017, which directed that the manganese standard only be applied at the potable water supply withdrawal.

Adding manganese to the group of constituents for which the water quality criterion must be met at the point of all existing or planned surface PWS withdrawals found in 25 Pa. Code §96.3(d) would align Pennsylvania with other states and the federal regulations. Currently, a 1.0 mg/L manganese standard criteria is in place for all surface waters. Accordingly, any PWS would be as safe following the implementation of the change required by Act 40 of 2017 to establish the point of compliance at the intake for public water sources.

If the IRRRC has any questions about these comments, please contact me at 717-763-7635 or the address set forth above.

Respectfully submitted,

A handwritten signature in black ink that reads "Jaret A. Gibbons". The signature is written in a cursive, flowing style.

Jaret A. Gibbons
ARIPPA Executive Director

cc: Tom Roberts, ARIPPA President