



January 28, 2021

Patrick McDonnell, Secretary
Pennsylvania Department of Environmental Protection
Rachel Carson State Office Building
P.O. Box 2063
Harrisburg, PA 17105-2063

Re: Draft Technical Guidance Document for Surface Mining Operations

Dear Secretary McDonnell,

The Delaware Riverkeeper Network (DRN) is writing in response to the Draft Technical Guidance Document (TGD) published in the PA Bulletin on October 31, 2020 that provides guidance regarding engineering design methods and requirements for coal and noncoal surface mining permit applications.

First, DRN believes that manganese limits should be required for surface mining. The Draft TGD states that manganese is exempt if the raw water without treatment has a pH greater than 6.0 and iron less than 10 mg/L. Similarly, 25 Pa. Code § 87.102(e) does not require a manganese limit. Human exposure to levels of manganese beyond those necessary for maintaining adequate health can lead to excess manganese in brain tissue resulting in symptoms that mimic Parkinson's disease. Depending upon the length and severity of the exposure, these neurological effects may result in permanent, irreversible damage to the brain.¹ Manganese is also harmful to aquatic life as it can be significantly bio-concentrated by aquatic biota at lower trophic levels.²

Numerous studies have shown that the effects of manganese on fish include impaired gill functions and hormonal and metabolic interference.³ Excess manganese also has negative implications for water uses such as agriculture. The EPA found that irrigation water containing manganese at concentrations of slightly less than 1.0 mg/L to a few milligrams per liter may be toxic to plants when applied to soils with pH values lower than 6.0.⁴ Although the Draft TGD cites the Chapter 93 water quality criterion of 1.0 mg/L for

¹ PADEP Bureau of Clean Water. Rationale for the Development of Human Health Criterion for Manganese.

² Howe et al. (2005). Manganese and its compounds: environmental aspects. Centre for Ecology & Hydrology.

³ Tuzuki et al. (2017). Effects of manganese on fat snook *Centropomus parallelus* (Carangaria: Centropomidae) exposed to different temperatures. *Neotrop. ichthyol. vol.15 no.4.*

⁴ PADEP Bureau of Clean Water. Rationale for the Development of Human Health Criterion for Manganese

manganese, the Department of Environmental Protection (DEP) recently proposed changing the manganese criterion to 0.3 mg/L. DRN submitted comment supporting this DEP proposal in September 2020 and attended a Citizens Advisory Committee meeting on October 20 to testify to this stricter standard at the point of discharge. The proposed change to the stricter manganese limit should be taken into consideration for surface mining operations as well.

5.2 Antidegradation Analysis

When a mining project is proposed in a special protection watershed, the mining program is to undertake an antidegradation analysis, reviewing such proposals using the Antidegradation Supplement for Mining Permits (5600-PM-BMP0007). After identifying the combination of Best Management Practices (BMPs) to be used in connection with a proposed mine discharge, the applicant is asked “Are the [Antidegradation best available combination of technologies (ABACT)] BMPs selected sufficient to protect the existing surface water quality?” DEP analyzes and models data provided by the applicant to determine if the discharge will be degrading with the ABACT BMPs the applicant proposes to implement.

For a proposed mining project, “the NPDES permit and the mining activity permit are interdependent but are reviewed and processed together.” DRN recommends that the publication of the draft NPDES and mining permit notice indicate when an ABACT analysis has been undertaken in order to provide the public with the opportunity to review and comment on this analysis. DRN also recommends that a public hearing be required for these proposed applications in special protection waters to assist with more public review and further transparency by the mining applicant.

Are pre-mining monitoring and macroinvertebrate surveys now being documented by DEP biologists to ensure that the DEP can make its required determination of accurate attained uses (25 Pa.Code 93.4c(a)(1)(iv) before a mine is permitted? This background stream data of aquatic life would also assist with post mining compliance and changes over time that may or may not be permitted as well as longer term remediation and restoration.

In addition, when a degrading discharge to a High Quality (HQ) water is proposed, the applicant must complete a Social or Economic Justification (SEJ). The draft NPDES permit notification for a mining project is required to include the notice that SEJ had been demonstrated. DRN recommends that the SEJ for a proposed mining project be noticed prior to the draft NPDES and mining permit to again provide the public with the opportunity to weigh in on proposed degradation of HQ waters and fully satisfy public participation requirements and review.

The DEP’s SEJ or Water Use Demonstration Form (5600-PM-BMP0028) asks for information about water quality considerations, social and land use considerations, and economic statistics. However, climate change and flooding costs are rarely given full analysis. If more complete environmental harm costs were included through a more thorough SEJ analysis with more public input, DRN believes that there would be more projects that would not meet the high bar that the Clean Water Act and Pennsylvania’s Clean Streams Law have set for allowing the degradation of water quality.

In *Sierra Club, et al. v. FERC*, the United States Court of Appeals for the District of Columbia Circuit found that the Federal Energy Regulatory Commission failed to consider or quantify the downstream greenhouse gas emissions (GHG) from the combustion of the natural gas transported by the project as part of its

National Environmental Policy Act review. DRN urges DEP to consider or quantify the indirect effects of downstream GHG emissions in SEJ reviews for coal mines proposed to impact HQ waters.

DRN has observed where DEP and the applicant determine, under economic statistics, that the creation of just one job is sufficient to justify the environmental harm to an HQ water. DRN believes this is playing too fast and loose with protecting the public trust. The indirect and direct environmental harms and long term cumulative costs from cradle to grave are also not fully provided and analyzed transparently with these determinations.

DRN also questions whether statewide consistency can be achieved in the SEJ process given that, when a degrading discharge to an HQ water is proposed in connection with a mining project, SEJ is conducted independently in District Mining Offices. Central oversight could be helpful to ensure equal protections and thorough review is consistent throughout the Commonwealth. As mentioned above, public hearings and comment could also assist in ensuring adequate public review and allowing participants to attend virtually and in person could help ensure wider participation throughout the state.

DRN also believes that environmentally sound non-discharge alternatives must be used in the antidegradation analysis. Non-discharge alternatives eliminate or reduce new, increased, or additional point source discharges to HQ or Exceptional Value (EV) streams and wetlands. However, not all non-discharge alternatives are equal in terms of environmental best management practices. For example, infiltration or land application of treated water from mine sites could allow contaminants from the mine waste to permeate into the soil and negatively affect groundwater. Rain events could also wash contaminated water from mining sites into nearby streams or wetlands. Caution must be utilized when considering sites for land application. Vernal pools and ephemeral streams appear dry at certain times of the year and may superficially appear to be suitable dry sites for land application. Similarly, recycling or reusing water onsite is another non-discharge method that could lead to degradation. The Draft TGD states that water collected in sediment basins and traps can be used for dust control on haul roads and stockpile areas. Contaminants in this water used on haul roads for dust control could wash into waterways during rain events, particularly after erosion and sedimentation controls are removed after mining operations have ceased.

Instead, DRN encourages the use of passive or less intrusive non-discharge alternatives. These alternatives include limiting the total disturbed area, creating new treatment wetlands (versus impacting naturally existing wetlands), and maintaining wide (300-foot or more) vegetated forested riparian buffers. Distance buffers between mining activity and streams and other waterways are also encouraged. Coal and industrial mineral surface mining activities are required to maintain a minimum 100-foot buffer along perennial and intermittent streams. In HQ or EV watersheds, stream variances to the 100-foot buffer are only permitted if the proposed mining activity will result in an environmental enhancement or for minor activities. DRN believes that wide buffers are an important and necessary component of any antidegradation policy.

In addition, the treatment of mining waste has implications for the environment. All treatment methods produce a precipitate consisting of a mixture of iron, manganese, and aluminum hydroxide, and some methods produce sodium hydroxide. Sodium hydroxide produces a gel-like sludge which is composed predominately of ferric hydroxide and which precipitates into the environment. The Draft TGD states that this sludge is normally simply mixed with surface mine spoil material at a location relatively high and dry in the backfill area during the reclamation process. The Draft TGD asserts that this sludge is an alkaline material with the metals at their highest oxidation states, and it is not harmful to the environment when

disposal has been accomplished in this manner. However, seemingly non-toxic sludge or clay-like materials can still have negative impacts to the environment. For example, bentonite clay discharged from horizontal directional drilling (HDD) inadvertent returns can increase suspended solids, sedimentation, and local turbidity and can interfere with fish gill development and smother macroinvertebrates. For these reasons, it is important that any sludge, clay, or viscous material be kept away from waterways regardless of whether they are considered non-toxic.

DRN agrees with the Draft TGD policy that all wetlands within 1,000 feet of mining activity must be shown on the exhibits of a wetland delineation. However, current DEP regulations consider wetlands under 0.05 acres in size “de minimus” and permittees are not required to mitigate the loss of these very small wetlands, which include many vernal pools. DRN recommends that smaller wetlands receive equal consideration for protection as larger wetlands do. This gap in the regulations is detrimental to obligate vernal pool species because many vernal pools are smaller than the minimum size requirement and are lost with no compensation for that loss. The loss of very small wetlands accumulate over time and can meet or exceed the loss of one larger wetland.

DEP must also ensure that no adverse impact on wetland functions and values result from mining projects. Adverse impacts on wetlands need not result only from direct disturbance. Indirect impacts have potential to alter wetland hydrology, cover type, species assemblage, wetland size, and extent of habitat fragmentation. DEP should require narrative descriptions of the functions and values of wetlands on - and offsite that will be affected by indirect impacts connected with a proposed mining project. DRN will be providing this comment in the current Chapter 105 regulations out for public review.

8.3 Existing Stream Crossings – wetlands as well as stream cross section data should be necessary information if a crossing of a wetland is being considered for access to a mine site.

Finally, the Draft TGD does not address the need to consider the impacts of climate change in permitting. Climate change will likely alter the amount, timing, and temperatures of stream flows. In all aspects of permitting, DEP must begin to require applicants, especially projects with the lifespan of mining operations, to develop response plans for changes in climate that detail how operations will be modified to ensure protection of water quality and quantity.

DRN believes that all of the aforementioned recommendations comprise BMPs for surface mining regulations and would ensure that Pennsylvania’s streams, wetlands, and other waterways are protected to the maximum extent possible.

Thank you for your time and consideration of these comments.

Sincerely,



Maya K. van Rossum
the Delaware Riverkeeper