



July 26, 2024

Acting Secretary, Jessica Shirley
Department of Environmental Protection
400 Market St
Harrisburg, PA 17101

Re: DEP Proposing to reissue the Erosion and Sediment Control General Permit for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing or Treatment Operations or Transmission Facilities (ESCGP-4)

Dear Acting Secretary Shirley,

We are writing on behalf of our organizations, Protect PT (Penn-Trafford) and Three River Waterkeeper (3RWK). Protect PT is a nonprofit citizens group dedicated to ensuring that the safety, security, and quality of life of community members are protected from the effects of unconventional natural gas development. 3RWK was founded in 2009 and aims to improve and protect the water quality of the Allegheny, Monongahela, and Ohio Rivers. These waterways are critical to the health, vitality, and economic prosperity of our region and communities. 3RWK is both a scientific and legal advocate for the community, working to ensure our three rivers are protected and safe to drink, fish, swim and enjoy. 3RWK's mission is to protect the water quality of the Monongahela, Allegheny, and Ohio Rivers, and their respective watersheds. Protect PT and 3RWK work with communities often that are impacted by facilities that must obtain Erosion and Sediment Control Permits associated with oil and gas facilities and have seen firsthand the gaps and concerns that arise.

Background

Anyone performing activities that disturb the earth are required to create and maintain erosion and sediment control best management practices (E&S BMPs) to limit potential issues with erosion or sedimentation occurring on the site. An E&S plan identifies BMPs in both writing and drawing to minimize erosion and sedimentation before, during, and after any activity that will disturb the earth. BMPs refer specifically to the methods employed to prevent this erosion and sedimentation.¹

Activities with oil and gas that are seen to disturb the earth include site preparation, well pad construction, and road, pipeline, and other infrastructure development.² The construction and land disturbance that is necessary for oil and gas drilling can not only alter the land but harm

¹ Pennsylvania Climate Impact Assessment 2021. (2021). In greenport.pa.gov. Pennsylvania Department of Environmental Protection. Retrieved July 15, 2024 from https://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/Climate%20Change%20Advisory%20Committee/2021/2-23-21/2021_Impacts_Assessment_Final_2-09-21_clean.pdf.

² U.S. Department of Energy Office of Oil and Natural Gas. (n.d.) Footprint Reduction. In energy.gov U.S. Department of Energy. Retrieved July 15, 2024 from <https://www.energy.gov/sites/prod/files/2016/07/f33/Footprint%20Reduction.pdf>.



local ecosystems by causing erosion and fragmenting of wildlife habitats.³ Additionally, the construction process can cause erosion of dirt, minerals, and other harmful pollutants into nearby streams.⁴

Soil erosion is the natural process by which the surface of land is worn away by water, wind, or chemicals. Sedimentation is the process when sediment is formed or deposited into a water way, this can happen from either erosion or accelerated erosion.⁵ A certain amount of erosion is common and happens overtime on its own and aquatic systems and habitats are usually able to assimilate naturally to the sedimentation without having negative consequences. However, accelerated erosion is erosion that occurs at a faster rate than it would occur normally on its own due to human activities.⁶ Accelerated erosion often leads to amounts of sediment that overwhelm the ability of waterways and habitats to adapt. Sediment pollution has a wide breadth of potentially dangerous impacts to the environment.

Environmental Concerns & Recommendations

The health of Pennsylvania’s environment, waterways, and people are important to Protect PT and 3WRK. We recommend the following changes and revisions to the updated erosion and sediment permit process. We believe these changes will better protect the environment and ensure that the Department of Environmental Protection is fulfilling their mission to guarantee Pennsylvanians their constitutional rights to a clean and healthful environment.

- 1. The Department of Environmental Protection should require operators to use updated flooding and precipitation estimates that are based on rigorous modeling of existing and future climate conditions to develop Erosion and Sedimentation plans. The Department should forgo approval of Erosion and Sedimentation plans that are not based on up-to-date, data driven and reliable information regarding flooding and precipitation estimates.**

The Pennsylvania Climate Impact Assessment concludes that increases in Carbon Dioxide and Methane in the earth’s atmosphere is increasing the risk of erosion and flooding in Pennsylvania.⁷ Nevertheless, plans that involve impacts of precipitation are consistently

³ Environmental Impacts of Natural Gas. (2014, June 9). Union of Concerned Scientists. Retrieved July 15, 2024 from <https://www.ucsusa.org/resources/environmental-impacts-natural-gas>.

⁴ Environmental Protection Agency. (n.d.). Summary of the Results of the Investigation Regarding Gas Well site Surface Water Impacts. In epa.gov. Retrieved July 15, 2024, from https://www3.epa.gov/npdes/pubs/oilandgas_gaswellssummary.pdf.

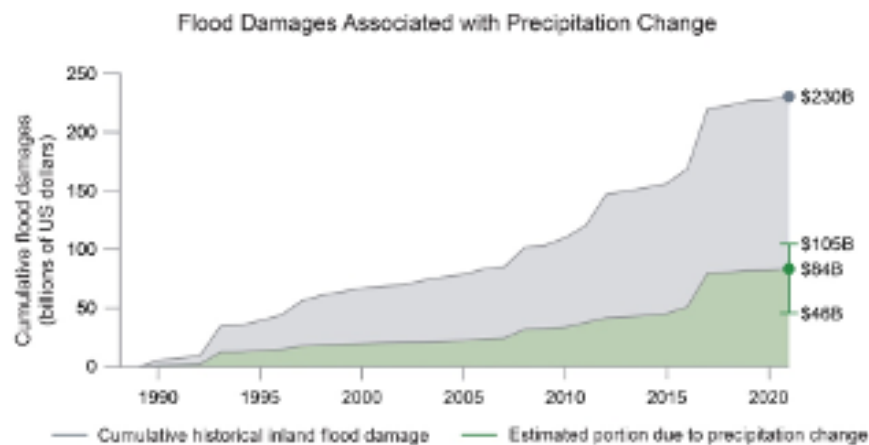
⁵ Pennsylvania Department of Environmental Protection. (2023). Erosion and Sediment Control Frequently Asked Questions. In dep.state.pa.us. Retrieved July 15, 2024 from https://files.dep.state.pa.us/Water/BNPNSM/StormwaterManagement/ConstructionStormwater/E&S_FAO.pdf.

⁶ Pennsylvania Department of Environmental Protection. (n.d.). Chapter 102. Erosion and Sediment Control General Provisions. In dep.pa.gov. Retrieved July 15, 2024 from https://www.dep.pa.gov/Business/Water/CleanWater/StormwaterMgmt/Stormwater%20Construction/Documents/025_0102.pdf?Mobile=1.

⁷ Pennsylvania Climate Impact Assessment 2021. (2021). In greenport.pa.gov. Pennsylvania Department of Environmental Protection. Retrieved July 15, 2024 from

underestimating risks and impacts when they are not based on up-to-date precipitation and flood estimates. Flooding specifically is of great concern with erosion and sedimentation plans and best management practices as research has shown that climate change is causing increased flooding due to changing precipitation volume and periods as described in The Fifth National Climate Assessment by the US Global Change Research Program (USGCRP, released in 2023). The report also indicated that economic losses due to floods are projected to increase disproportionately in the U.S. It is estimated that roughly 20-46% of increases in observed flood damages can be attributed to increasing precipitation, but other causes include urbanization, and land-use change which can exacerbate runoff and growth in the number of flood affected buildings.

The graph below shows since 1990 the dramatic increase in cumulative historical inland flood damage in US dollars going upwards of 230 billion dollars. In addition, one can see the increase in what portion of that is estimated to be due to precipitation change and the dramatic increase to 84 billion dollars.⁸



Due to the events and amount, there needs to be a required erosion and sediment plan that addresses climate change impacts on precipitation. Furthermore, the Department of Environmental Protection should consider how the continued buildout of infrastructure will either amplify or mitigate the impacts of climate change.

2. Setback distances and buffers between any facility or infrastructure and a water source or floodplain should be increased based on relevant data.

As described above, soil and sediment erosion can have a negative impact on environmental and public health. In Section 6.h. it states, “Special precautions must be taken to protect wetlands and

https://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/Climate%20Change%20Advisory%20Committee/2021/2-23-21/2021_Impacts_Assessment_Final_2-09-21_clean.pdf

⁸ USGCRP, 2023. Fifth National Climate Assessment. Crimmins, A.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, B.C. Stewart, and T.K. Maycock, Eds. U.S. Global Change Research Program, Washington, DC, USA. Retrieved July 15, 2024 from <https://doi.org/10.7930/NCA5.2023>.

other water resources identified in the NOI, plans, and other supporting documents.” This statement is rather vague and would be more effective if specific language and guidelines were provided. For example, there could be specific requirements such that the surrounding wetlands maintain saturation levels for x% of the year and do not receive more than x% increase in sediment load. Percentages should be based on the most up-to-date data and engineering based on the impacted area to have the least amount of impact possible to protect against erosion and contamination.

- 3. Prior to a facility being given an Erosion and Sediment Control General Permit PA DEP should require permits applicants to conduct baseline soil testing on their specific site specifically to understand any current contamination that may already exist that could contaminate runoff prior to a facility being issued an Erosion and Sediment Control General Permit.**

Comprehensive soil testing should be required prior to the construction of any infrastructure or approval of an Erosion and Sediment Control General Permit. The stability of any structure is heavily dependent on the baseline quality and conditions of the site’s soil. Potential issues such as soil erosion, settlement, or swelling can and need to be predicted before construction begins. The results of the soil analysis can also identify any potential pollutants that could contaminate the soil and sediment of the site; permit applicants should assume all responsibilities of the site, including legacy contamination. This information is important to ensure the project prevents releases of harmful substances into the environment as a requirement to maintain the permit. This additional step to the permitting process will protect our local ecosystems and human health.

- 4. If the facility obtaining the Erosion and Sediment Control General Permit is on land that is at increased risk for erosion, sedimentation, or subsidence the Department of Environmental Protection should require the operator to take extra precautions when conducting land disturbance activity.**

Due to the topography of the land in Pennsylvania many areas are highly prone to erosion and sedimentation. More than half of the well pads in Pennsylvania are built on slopes which increases the risks of excess surface water movement and therefore can lead to more erosion.⁹ In addition to the environmental impacts mentioned, erosion and sediment also impacts humans. Eroded land is often not able to hold water as well and this therefore can lead to increased flooding, and we have seen in the last couple of years how increased flooding impacts communities. On top of this, both loss of soil and flood-contaminated soil are big concerns to farmers and the global community that relies on crop yields for food.¹⁰

⁹ U.S. Department of Energy Office of Oil and Natural Gas. (n.d.). Footprint Reduction. In energy.gov. U.S. Department of Energy. Retrieved July 15, 2024, from <https://www.energy.gov/sites/prod/files/2016/07/f33/Footprint%20Reduction.pdf>

¹⁰ What is Erosion? Effects of Soil Erosion and Land Degradation. (n.d.) World Wildlife Fund. Retrieved July 15, 2024 from <https://www.worldwildlife.org/threats/soil-erosion-and-degradation#:~:text=Clogged%20and%20Polluted%20Waterways,communities%20that%20depend%20on%20them.>

Another concern in Pennsylvania with erosion and sedimentation is that mining has previously been conducted throughout the state and the chance of land for future drilling activities also having been mined in the past is high. Mining is known to increase the rates of both weathering and erosion. This is a result of the digging and blasting done to break rock into smaller pieces.¹¹ This factor highlights another potential area of concern with the erosion and sedimentation in the Commonwealth.

While this is common in Pennsylvania it is a concern with industrial work going in over top because of the increased risk for subsidence. Subsidence is the process in which land caves or sinks and this is often a result of mining on the land previously. Active subsidence could alter the hydrology of floodplains and wetlands and lead to unanticipated flooding.

Poor erosion and sediment plans can also lead to or contribute to landslides which will not only lead to massive sedimentation but also the potential destruction of public and private infrastructure. Erosion destabilized the soil and rock layers on slopes, reducing their ability to support the weight above them. This weakened structural integrity, often exacerbated by factors such as the heavy rainfall or deforestation, can ultimately trigger landslides as the ground gives way under the force of gravity.¹²

5. Facilities that are given an Erosion and Sediment Control General Permit should have to submit documentation after construction to indicate if the engineering plan was conducted as planned. If there were any changes or modifications during construction the operator should submit an updated plan outlining those changes.

Engineering plans for construction are just that, a plan. We recognize that throughout the construction phases things can change, new issues can be discovered, or the current plan could no longer work as outlined. In order to have an accurate understanding of land disturbance activities on the ground it needs to be clear what was done during construction. Therefore, it is of the utmost importance for the DEP to require operators to confirm if after construction the original engineering plans were in fact adhered to. If the engineering plans were altered or changed during construction operators should be required to provide an updated engineering plan that indicates the changes that occurred, the potential impact that has on erosion and sedimentation, and additional measures they will take to reduce the likelihood of further land disturbance. These plans must be approved by the DEP for the operation to continue. If significant deviations from the original plan occur and were carried out without an approved amendment prior to work being completed, the plan is considered a failed plan. Engineering firms with more than 3 failed plans within 5 years can no longer develop plans without another engineer in good standing to sign off.

¹¹ Unit 3 Reading: Mining and Mining Impacts. (n.d.) Student Materials. Retrieved July 15, 2024 from https://serc.carleton.edu/integrate/teaching_materials/mineral_resources/student_materials/unit3reading.html#:~:text=Mining%20increases%20rates%20of%20both%20area%20exposed%20to%20chemical%20weathering.

¹² Washington State Department of Natural Resources. (2017). What Are Landslides And How Do They Occur? In https://www.dnr.wa.gov/publications/ger_fs_landslide_processes.pdf. Retrieved July 24, 2024, from https://www.dnr.wa.gov/publications/ger_fs_landslide_processes.pdf

6. Add Measurable stormwater events to Section 2: Definitions.

In Section 8 of the proposed permit it refers to a “measurable stormwater event or the occurrence of snowmelt sufficient to cause a discharge.” Snowmelt is previously defined in the document in section 2 under definitions but measurable stormwater event is not. Providing a definition of what would qualify as a measurable stormwater event is important in order to provide clarity to operators.

7. The Department of Environmental Protection should develop stronger, more restrictive regulations for sediment and associated pollutants in stormwater runoff. Regulatory systems for this type of discharge could be modeled after well-established regulatory systems, such as the national pollutant discharge elimination system permitting process.¹³

The Department of Environmental Protection (DEP) should apply more stringent regulations on activities that disturb the earth to limit the environmental issues resulting from erosion or sedimentation associated with oil and gas exploration, production, processing or treatment operations and/or transmission facilities. These impacts are often influenced by precipitation events. Climate change is leading to more frequent and intense storm events, resulting in increased stormwater runoff.¹⁴ When operators engage in activities that disturb the earth, soil and sediment loosens and is washed away during heavy rainfalls. During a precipitation event after a drought, this impact is exasperated as soil hardens and becomes impervious causing increased runoff. Soil and sediment in stormwater runoff can carry a variety of pollutants, including but not limited to nutrients (e.g. nitrogen and phosphorus), heavy metals, and pathogens. These pollutants can harm Pennsylvania’s waterways by degrading its water quality, which can harm aquatic life and pose risks to human health. Even if there are limited pollutants in the eroded substrate, excess sediment is not benign as it can overwhelm aquatic ecosystems by smothering aquatic habitats, disrupting breeding grounds, and suffocating fish eggs.¹⁵ Furthermore, a study in 2015 by researchers out of Michigan found that the environmental impacts of fracking on erosion and sedimentation are significant and can lead to things such as an increased risk of aquatic contamination from chemical spills or runoff, habitat fragmentation, and reduction of surface waters because of the lowering of groundwater levels.¹⁶

To this end, we must apply stronger, more restrictive regulations for soil and sediment and reduce stormwater runoff. These stricter regulations can also provide economic benefits by

¹³ Environmental Protection Agency. (n.d.). Summary of the Results of the Investigation Regarding Gas Well Site Surface Water Impacts. In epa.gov. Retrieved July 15, 2024 from https://www3.epa.gov/npdes/pubs/oilandgas_gaswellsummary.pdf.

¹⁴ Environmental Protection Agency. (n.d.). Climate Adaptation and Stormwater Runoff. In epa.gov. Retrieved July 25, 2024, from <https://www.epa.gov/arc-x/climate-adaptation-and-stormwater-runoff#:~:text=An%20increase%20in%20stormwater%20runoff,stormwater%20and%20wastewater%20drainage%20systems>.

¹⁵ Environmental Protection Agency. (n.d.). Nonpoint Source: Agriculture. In epa.gov. Retrieved July 19, 2024, from <https://www.epa.gov/nps/nonpoint-source-agriculture#:~:text=Algae%20can%20also%20affect%20recreational,marine%20ecosystems%E2%80%94including%20coral%20reefs>.

¹⁶ Graham Sustainability Institute University of Michigan. (2015). Hydraulic Fracturing in Michigan Integrated Assessment Final Report. In graham.umich.edu. Retrieved July 15, 2024 from <https://graham.umich.edu/media/pubs/HydraulicFracturingMI-ExecSummary.pdf>.

controlling the volume of sediments in stormwater runoff and, ultimately, reducing the costs of cleanups, such as water treatment and remediation. Additionally, clean and healthy waterways can enhance recreational activities and tourism, reduce the burden and rates from public water utilities, all of which contribute to local economies.

Lastly, stronger sediment and erosion regulations align with the Clean Water Act's goals and Pennsylvania's Clean Streams Law. "The objective of [the Clean Water Act] is to restore and maintain the chemical, physical, and biological integrity of the Nation's water."¹⁷ As explained above, excess sediments harm Pennsylvania's waterways. Stronger regulations can, not only help improve the water quality, but align with the Clean Water Act's goals.

The objective of Pennsylvania's Clean Streams Law is to "preserve and improve the purity of the waters of the Commonwealth."¹⁸ This law creates a positive duty to "not only to prevent further pollution of the waters of the Commonwealth, but also to reclaim and restore to a clean, unpolluted condition [of] every stream in Pennsylvania that is presently polluted."¹⁹ The law also provides a negative duty to not pollute Pennsylvania's waters. "The discharge of...*any* substance into the waters of this Commonwealth, which causes or contributes to pollution...or creates a danger of such pollution is hereby declared not to be a reasonable or natural use of such waters, to be against public policy and to be a public nuisance" (emphasis added).²⁰ Operators engaging in activities that disturb the earth pollute our waters with pollutants that leach from the soil. DEP has a duty to keep Pennsylvania's waterways clean and to improve our waters so they go back to their purest form. Enforcing stronger regulations could limit erosion and preserve the purity of our waters.

Regulatory systems for this type of discharge could be modeled after well-established regulatory systems, such as the national pollutant discharge elimination system (NPDES) permitting process of which the PA DEP is a delegated enforcement agency of the Clean Water Act that requires NPDES permits. The ESCGP only requires operators to create a plan, while the NPDES permitting system requires operators to get a permit that sets limits on the amount and type of pollutants that can be discharged. The ESCGP system is effective when it is properly designed and implemented, but enforcement actions are weak compared to the NPDES. DEP should utilize the NPDES permitting process as an example of how to improve the ESCGP.

8. The Department of Environmental Protection should develop tighter restrictions for operators who continue to have excessive violations of the Erosion and Sediment Control General Permit, and further consideration should be given before allowing renewals or new permits to be received.

DEP should develop tighter restrictions for operators who continue to repeatedly violate their Erosion and Sediment Control General Permit (ESCGP). If a repeat violator tries to renew their

¹⁷ Clean Water Act of 1972, 33 U.S.C. §1251(a).

¹⁸ The Clean Streams Law, 35 Pa. Stat. Ann. § 691 pmb1.

¹⁹ *Id.* at § 691.4(3) (West).

²⁰ *Id.* at § 691.3 (West).



permit or apply for a new one, DEP should consider their compliance history and add additional requirements to their permit to prevent future violations of their permit and subsequent harm to our environment. DEP must hold operators who continuously violate their permit accountable and deter others from following suit. Enforced restrictions and meaningful penalties for repeat violators hold operators accountable for their actions and encourage them to adhere to permit requirements more diligently. Knowing that repeated violations will result in tighter restrictions and potential difficulties in obtaining future permits could deter operators from non-compliance.

Additionally, operators facing tighter restrictions may be more likely to invest in innovative technologies or implement better standard practices to meet the conditions in their permit. Tighter restrictions could remove the incentive to “pay to pollute,” and encourage operators to resolve any issues that could cause a violation.

Lastly, Pennsylvania’s constitution states that the people of Pennsylvania have a right to clean air and pure water.²¹ It is time that the DEP and other state regulatory agencies start to enforce the Environmental Rights Amendment. Excessive violations of the ESCGP stand in the way of people’s rights to pure water. These violations negatively impact Pennsylvania’s environment by polluting Pennsylvania’s waterways with nutrients and heavy metals. DEP needs to minimize the risks of erosion and sedimentation from activities that disturb the earth by imposing tighter restrictions on repeat violators.

Thank you for your time and consideration and please feel free to reach out if you have additional questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Gillian Graber".

Gillian Graber
Executive Director, Protect PT

A handwritten signature in green ink, appearing to read "Heather Hulton VanTassel".

Heather Hulton VanTassel, PhD
Three Rivers Waterkeeper, Executive Director

²¹ Pa. Const. Art. I § 27.