November 21, 2018 **Electronically submitted c/o: Colleen Connelly**, coconnolly@pa.gov

Pennsylvania Department of Environmental Protection
Regional Clean Water Program Manager
2 Public Square
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Re: PA0276120, Storm Water, SIC Code 4953, Slate Belt Heat Recovery Center LLC, 435 Williams Court, Baltimore, MD 21220-2888. Facility Name: Slate Belt Heat Recovery Center (SBHRC). This proposed facility is located in Plainfield Township, Northampton County

Delaware Riverkeeper Network submits these comments on the draft National Pollution Discharge Elimination System (NPDES) permit (Permit No. PA0276120) to authorize the discharge of stormwater associated with industrial activities to waters of the Commonwealth from a biosolids processing facility to be constructed on Pen Argyl Road in Pen Argyl, Northampton County, by Slate Belt Heat Recovery Center, LLC of 435 Williams Court, Suite 100, Baltimore, MD, 21220.

The Pennsylvania Department of Environmental Protection (PADEP) states in the notice in the Pennsylvania Bulletin Sept. 29, 2018 VOL. 48, NO. 39: "The application is for a new NPDES permit for a new discharge of treated Industrial stormwater. The receiving stream(s), Waltz Creek and UNT Little Bushkill Creek, are located in State Water Plan watershed 1-F and is classified for Cold Water Fishes, Migratory Fishes, High Quality—Cold Water, and Migratory Fish, aquatic life, water supply and recreation. The discharge is not expected to affect public water supplies." PADEP provides a list of contaminants that may be included in the final permit and states that the design flow is 0 MGD.

Delaware Riverkeeper Network objects to the draft permit and requests that the permit be withdrawn based on our concerns stated herein.

It is stated in Synagro's application for the industrial stormwater discharge permit that the project "meets the provisions of zoning ordinance" or that it has received zoning approval from the Township. (PADEP General Information Form, p. 3.) This is obviously false since Plainfield Township Planning Commission hearings are ongoing and there are contested zoning issues. The draft permit should be withdrawn by PADEP on these grounds.

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It is unclear precisely how PADEP will assure that the stormwater discharge doesn't degrade Little Bushkill Creek and Waltz Creek, both High Quality (HQ) streams, which are protected from degradation under PADEP regulations. The limits for the parameters listed in the draft permit are unclear and do not include many of the pollutants that can be found in sludge and its process wastewater.

In the application to PADEP for this permit, Synagro submitted only partial, unclear, or, in some cases, invalid information about the proposed facility:

> Sediment basin #2 is described as an "existing, permitted, non-discharging, engineered stormwater control pond" and "does not connect with Little Bushkill Creek" (NPDES permit app., March 2018, Module 1, p. 3). However, the draft permit is based on invalid information about sediment basin #2. Plainfield Township filed an appeal with PADEP on September 11, 2018 contesting the classification of the basin as described above based on 17 objections. The draft permit should be withdrawn until this legal matter as to whether the sediment basin is legally "permitted" is resolved.
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> Sediment basin #2 is a former quarry pond that discharges to groundwater and is hydrologically connected to groundwater. The groundwater is in the headwater drainage area of the Little Bushkill Creek watershed. The former quarry pond may also be hydraulically connected to the Waltz Creek watershed. The applicant's statement that sediment basin #2 is "non-discharging" is inaccurate.
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> The application materials claim that only "uncontaminated runoff" will be sent to the quarry pond/sediment basin #2 but this description does not consider all the contaminants that could be in the stormwater that may be carried there by all activities at the site, regardless of whether the stormwater originates in the designated "contaminated" or "uncontaminated" stormwater runoff areas.
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> There is no explanation of how it was concluded that the stormwater from the site will not be contaminated except to state that areas where the sludge processing activities will take place will collect stormwater to be sent to the wastewater silo and then trucked offsite, not to the basin. The entire site and entrance area is an industrial site and should be controlled as such.
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> The application materials describe the vegetated swale that is proposed around a portion of the quarry pond/sediment basin #2 as a "best management practice". But it is not demonstrated that the swale will remove the contaminants in the stormwater that may be carried there; it is simply assumed. (NPDES permit application, March 2018, Introduction, p ii.).
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> The application materials state that the drying units will use waste heat from the Green Knight landfill gas-powered turbines and go so far as to say "The proposed project location was chosen based on the waste heat source provided" by Green Knight. This is misleading at best because there is no analysis that shows how much landfill gas will be produced or for how long it will be used. Imported natural gas is identified as the alternative fuel to be used and there is already a gas pipeline in the vicinity and a new one is part of the project proposal. (NPDES permit application, March 2018, Introduction, p i.)

There are other issues and questions raised by the stormwater discharge permit due to lack of information or lack of sufficient detail:

The extent and frequency of monitoring at Outfall 001, where the swale will convey stormwater, is unclear. It is stated in the application materials that it will be sampled once at the startup of the operation and at least semi-annually after that, based on permit requirements that are not spelled out. The parameters to be tested for are listed in the application as "oil and grease, BOD5, COD, TSS, Total Nitrogen, Total Phosphorus, and pH", and as required in the NPDES permit. (MODULE 1 Supplemental Narrative - Anti-Degradation, Slate Belt Heat Recovery Center, p.1-2.) There is no mention of required monitoring for contaminants that are known to be contained in sludge and the process wastewater.

It is important for the public and municipal officials to know what is in the wastewater that is being produced, stored, transferred, and trucked off site and through the community's roadways and, in turn, what contaminants could be contained in stormwater produced at the site.

It is also not stated why monitoring won't be continuous. Continuous monitoring is warranted considering the irregular and changing make-up of the contaminated materials from a wide variety of sludge sources that will be entering and leaving the facility due to the different waste streams produced by the contributing sewage facilities. How will the routine spills and runoff that occur at an industrial operation of this intensity - at such a crowded location with a variety of dangerous pollutants - be discovered and prevented from entering the pond/basin and, in turn the groundwater and the Little Bushkill and Waltz Creeks, if there is no continuous monitoring system for a comprehensive list of contaminants to alert for pollution? Scientific papers and reports are available that identify some of the known contaminants in sludge. These contaminants could be in the sludge materials that are imported to the site and could make their way into stormwater runoff.

For instance, a study published in 2011 analyzed perfluorinated chemicals (PFCs) in land-applied biosolids coming from a sewage treatment plant in Decatur, Alabama. Local farmers had applied it to agricultural fields in Lawrence, Morgan, and Limestone counties in Alabama. (Lindstrom, A.B. Strynar, M.J., Delinsky, A.D., Nakayama, S.F., McMillan, L., Lieblo, E.L., Neill, M., & Thomas, L. (2011), "Application of WWTP Biosolids and Resulting Perfluorinated Compound Contamination of Surface and Well Water in Decatur, Alabama, USA. *Environ. Sci. Technol.*, 2011", 45 (19), pp 8015–8021. Retrieved from https://pubs.acs.org/doi/abs/10.1021/es1039425) Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), two highly toxic PFCs, were detected in ground and surface water samples collected there, some at very high concentrations, above the EPA's health advisory levels. These chemicals, linked to cancer and other diseases, don't break down in the environment and, when ingested, build up in people's blood, increasing the risk of developing adverse health effects.

The applicant plans to produce biosolids from the sludge at this facility. Biosolids, even Class A biosolids, are known to contain dangerous contaminants, as discussed in scientific literature.

Over 300 organic chemicals from a diverse range of classes of compounds have been identified in biosolids. The most common organic contaminants found in biosolids are phthalic acid esters (PAEs), polycyclic aromatic hydrocarbons (PAHs), chlorobenzenes (CBs), polychlorinated

biphenyls (PCBs), organochlorine pesticides (OCPs), chlorophenols, polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), organotin compounds, brominated flame retardants, surfactants, pharmaceuticals and personal care products, and natural and synthetic hormones. (Haynes, R.J., Murtaza, G., & Naidu, R. (2009), Chapter 4 Inorganic and Organic Constituents and Contaminants of Biosolids: Implications for Land Application, *Advances in Agronomy***,** Volume 104, Pages 165-267. Retrieved from https://www.sciencedirect.com/science/article/pii/S0065211309040048).

Other organic contaminants in biosolids include polychlorinated alkanes (PCAs), polychlorinated naphthalenes (PCNs), polybrominated diphenyl ethers (PBDEs), triclosan (TCS), triclocarban (TCC), benzothiazoles, antibiotics, synthetic musks, bisphenol A, quaternary ammonium compounds (QACs), steroids, and polydimethylsiloxanes (PDMSs). (Clarke, B.O., & Smith, S.R. (2010), "Review of 'emerging' organic contaminants in biosolids and assessment of international research priorities for the agricultural use of biosolids", *Environ Int*. 2011 Jan; 37(1):226-47. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/20797791). Contaminants are from medical, industrial and household sources. (Jenkins, S.R., Armstrong, C.W., & Monti, M.M. (2007), "Health Effects of Biosolids Applied to Land: Available Scientific Evidence", Virginia Department of Health. Retrieved from http://www.vdh.virginia.gov/content/uploads/sites/12/2016/02/Biosolids-1.pdf)

Heavy metals found in biosolids include arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, and zinc. (Haynes, R.J., Murtaza, G., & Naidu, R. (2009), Chapter 4 Inorganic and Organic Constituents and Contaminants of Biosolids: Implications for Land Application, *Advances in Agronomy***,** Volume 104, Pages 165-267. Retrieved from https://www.sciencedirect.com/science/article/pii/S0065211309040048) Synthetic fibers or "microplastics" that detach from clothing during laundering, including polyester, nylon, and rayon, are non-biodegradable, are found in sludge and persist in biosolids. (Zubris, K.A.V., & Richards, B.K. (2005) "Synthetic fibers as an indication of land application of sludge", *Environmental Pollution*, (138) 201-211. Retrieved from https://www.lehigh.edu/~incheme/pdfs/papers%20and%20projects/April%202,%202005%20Synthetic%20Fibers%20as%20an%20Indicator%20of%20Land%20Application%20Sludge%20-%20Elsevier%20-%20Zubris.pdf)

The antibacterial pesticides triclosan and triclocarban are found in high concentrations in biosolids because 95% of their uses are in consumer products that are disposed of down residential drains. (Shinbrot. X. (2013), "Biosolids or Biohazards? *Pesticides and You*, Vol. 32(3)". Retrieved from https://www.beyondpesticides.org/assets/media/documents/infoservices/pesticidesandyou/documents/Biosolids.pdf)

Four major types of human pathogens can be found in biosolids: bacteria, viruses, protozoa, and helminths. Potential transmission pathways of human pathogens from biosolids include air, soil, and water. In addition, it is possible that vectors, such as flies, could transmit pathogens from biosolids. Dangerous bacteria found in biosolids includes *E. coli, Listeria monocytogenes, Staphylococcus aureus, Helicobacter pylori, and Legionella.* Protozoan parasites found in biosolids include Cryptosporidium, Giardia, and Microsporidia. Helminth worms found in biosolids include Ascaris lumbricoides, Trichuris trichiura, Hymenolepsis nana, Taenia saginata, Taenia solium, Necator americanus, Ascaris suum, and Toxocara canis. (Jenkins, S.R., Armstrong, C.W., & Monti, M.M.

(2007), "Health Effects of Biosolids Applied to Land: Available Scientific Evidence", Virginia Department of Health. Retrieved from http://www.vdh.virginia.gov/content/uploads/sites/12/2016/02/Biosolids-1.pdf).

There are also certain properties or materials that are very dangerous in sludge that can be carried into the wastewater, as well as the final biosolids product. It is known that sewage sludge contains detectable amounts of radioactive materials. In addition, sewage flowing into a POTW can include anthropogenic materials exempt from regulatory control, such as excreta from individuals undergoing medical diagnosis or therapy, and discharges of limited quantities of radioactive materials from some licensees of the U.S. Nuclear Regulatory Commission (NRC) and NRC Agreement State licensees. Other sources of radioactive materials that may enter sewage collection systems include stormwater runoff, groundwater, surface water, residuals from drinking water treatment plants, and waste streams from certain industries (e.g., ceramics, electronics, optics, mining, petroleum, foundries, and pulp/paper mills). Some states have identified cases where radium from drinking water treatment residuals has been concentrated in sewage sludge. (U.S. Nuclear Regulatory Commission (2004), SCORS Assessment of Radioactivity in Sewage Sludge: Modeling to Assess Radiation Doses, Sewage Sludge Subcommittee. Retrieved from http://www.iscors.org/pdf/FinalDoseModeling.pdf)

Will the Department investigate the presence of these chemicals, pathogens, and radioactive materials to be certain that these toxic compounds are not being spread into the local environment and community through the stormwater that would be generated by the facility?

Considering the potential for these pollutants to spill or wash into the stormwater generated at the facility, how the stormwater will be prevented from contaminating sediment basin #2, the groundwater, and the watersheds of Little Bushkill Creek and Waltz Creek is of great importance. The application and draft permit does not adequately address these issues, supporting the conclusion that the draft permit must be withdrawn.

An enormous amount of truck traffic enters and leaves the Grand Central Sanitary Landfill through the State Rt. 512 entrance every day during operating hours (6:00 am to 6:00 pm). Sewage sludge and garbage is currently trucked into the landfill for disposal on the same road through this entrance. Forty truck trips per day are planned to serve the proposed sludge drying plant and another ten truck trips per day to carry the "biosolids" pellets to market, adding to the already heavy truck traffic.

Runoff drains and/or flows to Waltz Creek or Little Bushkill Creek, both High Quality, Cold Water streams protected from degradation by state regulation. There is no discussion about the potential impacts of polluted runoff from this additional truck traffic and no proposed management practices to prevent polluted runoff to these waterways and their watersheds from the cumulative day-to-day truck traffic on this roadway and entrance area, despite the dangerous and, in some cases, hazardous materials being hauled through these locations.

There will be air emissions from this proposed facility's operations, as stated in the application materials, as well as from diesel truck traffic. (PADEP General Information Form, p. 6.) How will the deposition of air emissions to the ground surface and water be measured and controlled in the stormwater runoff?

It is stated in the application materials that there will be no storm or wastewater infiltration to groundwater within ½ mile of any "public water supply well, spring or infiltration gallery". However, the quarry pond/sediment basin is hydraulically connected to groundwater. Furthermore, it is unknown if there is a spring, well, or other infiltration mechanism within ½ mile so this statement is unsubstantiated.

Delaware Riverkeeper Network requests that the Department withdraw this draft NPDES permit for a new discharge of treated Industrial stormwater from the proposed Slate Belt Heat Recovery Center.

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