Jefferson County Foundation, Inc.

January 26, 2020

The Honorable Austin Caperton
Secretary of the West Virginia Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Re: **Industrial Stormwater Permit Application No. WVG611896**

Dear Secretary Caperton,

Jefferson County Foundation respectfully submits the following comments on Rockwool's Multi-Sector Industrial Stormwater Permit Application No. WVG611896 and petitions the West Virginia Department of Environmental Protection (WVDEP) pursuant to West Virginia Legislative Rule 47CSR10 Section 13.6.b.2.A to require Rockwool to obtain a valid individual permit so that appropriate protections and oversight can be applied by the WVDEP to address all of the unique concerns the Rockwool facility poses. Among the reasons the WVDEP should grant our petition are that:

- Rockwool is a significant contributor of pollution and as such should be required to obtain an individual permit.
- Rockwool's facility is being located in a hydrogeologic setting with vulnerable groundwater resources, which can only be protected via the careful and tailored use of protective measures able to be imposed via an individual permit.
- Rockwool plans novel methods that are unlike those used in other mineral wool facilities in West Virginia and thus an individual permit is needed to appropriately protect the waters of the state.
- 11 other specific concerns have been identified that require an individual permit to be adequately addressed.

In support of this petition, below we provide a detailed explanation of our concerns.

1. **Rockwool is a significant contributor of pollution and should be required to obtain an individual permit. (47CSR10 Section 13.6.b.2.A.1)**

The Rockwool facility in Ranson, West Virginia will produce significant amounts of pollution in Jefferson County, West Virginia and the surrounding area. This pollution will endanger waters of the state including the groundwater and surface water resources of Jefferson County which are particularly vulnerable due to the hydrogeologic setting. The Rockwool facility's planned

activities threaten the drinking water of tens of thousands of people in Jefferson County, Maryland, and Northern Virginia as well as the water quality of the Chesapeake Bay.

For example, Rockwool plans to release pollutants to the air which will fall to the ground and threaten local waters. Rockwool's air permit to construct a stone wool insulation manufacturing plant (R14-0037, April 30, 2018), issued by WVDEP's Division of Air Quality, allows for Particulate Matter less than 2.5 microns, 133.41 tons per year (TPY); Particulate Matter less than 10 microns, 153.19 TPY; (total) Particulate Matter, 250.87 Tons Per Year; Sulfur Dioxide, 147.45 TPY; Oxides of Nitrogen, 238.96 TPY; Carbon Monoxide, 71.40 TPY; Volatile Organic Compounds, 471.41 TPY; Sulfuric Acid Mist, 16.37 TPY; Total Hazardous Air Pollutants, 392.59 TPY, Greenhouse Gases (CO2e), 152,935 TPY, and classifies the Rockwool Ranson site as a Major Stationary Source of air pollution subject to New Source Review and Prevention of Significant Deterioration (PSD).

Rockwool's air modeling suggests that the bulk of the dust and particulates will fall out and be deposited within the plant boundaries on building roofs, asphalt surfaces, parking lots, roads, and vegetated areas within Rockwool's drainage[1]. For example, the PSD modeling result is that the Significant Impact Area for PM10 maximum concentrations is within a circle, centered on the facility, and extending only 0.45 miles to 0.78 miles. That means the majority of the PM10 will fall within the fenced portion of the plant, as can be seen in Exhibit A, in which the AERMOD modeling runs show the spatial concentration distribution of pollutants that exceed the Significant Impact Level (SIL) for PM10 at the 24-hour NAAQS standard (exhibit A1) and the annual NAAQS standard (exhibit A2). The modeling runs show that the maximum PM10 concentrations (in ug/m3) will occur almost entirely within the outlines of the Rockwool facility[2]. This indicates that, by mass, there will be significant outfall of PM10 pollutants on the drainage areas going to the two sediment ponds. Stormwater that falls on these surfaces will entrain the hazardous particulates and dust and convey them to the stormwater and bioretention ponds and outlets. In the case of Rockwool these particulates and dust are in fact hazardous.[3] Entrained particulates and dust—due to the toxic nature of the underlying contaminants—has the potential to negatively impact groundwater and surface water. As stated on their application for Multi-Sector permit registration, Rockwool's site will generate a discharge of 86,330 gallons per day (GPD) from Outlet 1 and 10,207 GPD from Outlet 2. Thus the stormwater runoff from the Rockwool facility will contain a significant amount of pollution.

In addition, many of the processes described in the air permit generate fugitive (uncontrolled) emissions. For example, the air permit allows for an outdoor process called the melting furnace portable crusher. The crushing activity will occur outside in a dedicated area that is uncovered, B170. Material that is crushed will drop into a waste pit. Notably, the portable crusher operation is entirely uncontained and uncontrolled by any pollution control devices. This

[1]Table 4.1 Summary of Facility Impacts and SIL/SIA Analyses, pp. 35-36, ROXUL Air Quality Modeling Report 12-18-2017.pdf

[2] Attachment 4, AERMOD Concentration Plots, Appendix C, ROXUL Air Quality Modeling Report, Dec. 18, 2017

[3] "Mineral fiber emissions were conservatively assumed to be equal to Filterable Particulate Matter emissions…The listed Hazardous Pollutant (HAP), fine mineral fibers, includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral-derived fibers) of average diameter one micrometer or less." from the Roxul Application for Permit to Construct, Nov. 20, 2017

crusher is a significant source of dust and fugitive particulate matter, the third highest source after the two cooling towers. Fugitive dust and particulates generated via Rockwool's many processes may contain formaldehyde, menthol, phenol, silane coupling agents and other hazardous substances. Best Available Controlled Technology (BACT) limits imposed on the crusher are limited to operational time limits (540 hours/year). The EPA noted in its comments on the air permit "It is the EPA's understanding that limiting hours or operation, or limiting throughput is generally not considered BACT."[4] Rockwool plans to bring the crusher on-site at least quarterly in order to crush waste for re-melting in the furnace. The material that is crushed is of unknown composition, but will likely include: slag waste from aluminum manufacturing, fine coal dust, coal ash, carbon anode waste (possibly including heavy metals such as molybdenum). This material both before crushing and after crushing will be stored in an open top location, subject to rain. It is difficult to determine if this area is gravel or concrete as it appears to be labeled gravel in several site maps (Exhibit B). The leachate from this storage pile may contaminate groundwater.

In addition, the apparently planned mixture of process water with stormwater water, to be held in on-site ponds, threatens local waters. Pollutants produced by the manufacturing process at the Rockwool Ranson facility are captured in process water, which currently available information indicates can then mix with stormwater, with the resulting mix retained in open ponds. These pollutants are not permitted to be removed via the sewer system to Charles Town Utility Board (CTUB) wastewater treatment plant. The WV/NPDES permit No. WV002349 Modification No. 8, which is the modification of the CTUB NPDES permit that allows CTUB to accept Rockwool's effluent, specifically states the following:

> "The permittee may accept non-domestic wastewater from Rockwool (IU02) for treatment and disposal at the Charles Town's main wastewater treatment plant (design flow of 1.75 MGD). **The non-domestic wastewater approved for acceptance consists of RO reject wastewater and water softener wastewater from the treatment of finished drinking water from Jefferson Utilities, Inc.** The maximum daily volume accepted shall not exceed 17,000 gallons per day. The actual volume of the non-domestic wastewater accepted shall be measured and recorded daily. **The acceptance of any other non-domestic wastewater is prohibited**."[5]

Therefore, only domestic sewage, reverse osmosis (RO) reject wastewater, and water softener wastewater from the treatment of finished drinking water is permitted by WVDEP to be discharged to the CTUB sewer system. The CTUB sewer system is the only sewer system that is currently permitted to take effluent, domestic or industrial, from the Rockwool Ranson plant. In addition, the discharge of any amount of stormwater to the CTUB sewer system is specifically prohibited in the permit.

In a letter dated November 26, 2019 from the plumbing engineer retained by the Charles Town City Council, Mr. Christopher M. Echenrode, P.E. Senior Project Engineer of Gwin, Dobson, and Foreman Engineers, to Mr. Hennessy, the city manager of Charles Town, Mr. Echenrode

[4] EPA Comments on Draft Permit Number R14-0037-00108 ROXUL USA, Inc., April 25, 2019.
[5] WV/NPDES Permit No. WV0022349 Modification No. 8, Modification 1.

posed 18 questions and comments about the internal plumbing plans of the Rockwool facility that he had been asked to evaluate. The eleventh question was as follows.

> "Where are the proposed 'process water' lines being returned? Why are floor drains and trench drains connected to the 'process water' lines and not the sanitary sewer? It was noted that the 'process water' lines are accepting the downspout flow. Does the system have sufficient storage capacity to handle heavy rain events? Please confirm if any 'process water' enters the sanitary sewer system."

These questions were answered in a letter to Mr. Hennessy dated December 13, 2019 by Daniel Ferrell, P.E. Principal in Charge of the Thrasher Group, Inc. the engineering firm hired by Rockwool. The answer to the above question was as follows:

> "RESPONSE: All 'process water' is collected, treated and used within the production building via the closed loop system within the manufacturing process. All floor drains and trench drains are connected to the process water system to maximize water usage efficiency and eliminate any potential discharge of unwanted flows outside of production areas… It can be confirmed that the process water system is closed loop with no effluents and/or interconnections to the sewer system."

In fact, however, this system is only closed loop in that no effluent from the process water enters the sewer system. In contrast to what is stated in the above excerpted quote, as shown on the plumbing plans, the process water enters the storm drain system, and drains into a settling pond (exhibit C). From the settling pond, it flows over a weir into an open retention pond where it is held until drawn back into the process area via a pipe and pump station. While in residence in the retention pond, volatile organic compounds (VOCs) such as formaldehyde, phenol, and methanol carried within the process water steam are emitting into the air and potentially leaking into the groundwater. The solid particulate pollutants carried into the basin are expected to settle from the water in the settling basin and get scooped out of the settling basin with heavy equipment to be reincorporated back into the process.

An example of this loop can be followed starting on plan page PA0201.1 and PA0201.2 (Exhibit C). One can see that the process water from multiple floor drains and a trench drain enters a filter then enters a pipe labeled storm drain. On plan page PA0201.2, it is seen that process water exits the manufacturing process and the process area via the pipe labeled storm drain and presumably mixes with stormwater as the label for the pipe implies. Plan page P0206 shows these storm drains exiting the building. Plan pages 000-024 and 000-015 show these storm drains (red dotted line) entering the storm drain system and draining into the settling pond.

This demonstrates that process water and stormwater are combined and retained in open ponds. As no process water is permitted to leave the site via the sewer system, this loop system is the reservoir for all pollutants not exiting the system via pond evaporation or through the smoke stacks.

This is a novel system not used previously by Rockwool. Rockwool in Mississippi has a pretreatment facility and its process water is treated at that facility and disposed of via sanitary

sewer. It is not a system which is used by any other mineral wool manufacturer in the state of West Virginia, or in the United States for that matter. This system poses several severe risks of marked pollution of the groundwater aquifer (considered water of the state in West Virginia) in Jefferson County, risks made much worse by the unique hydrogeological features of Jefferson County. This is of substantial and valid concern as a majority of the residents of Jefferson County depend on groundwater as their only source of water.

2. **Rockwool should also be required to obtain an individual permit due to the unique hydrogeologic setting and associated vulnerability of groundwater resources in the area in which Rockwool Ranson plans to operate.**

Rockwool and its the rainwater for reuse pond, are in extreme proximity to the ground water aquifer and, therefore, to the waters of the state. There are several other relevant factors including the unique hydrogeologic setting, and high aquifer vulnerability in this location. Further, if the ground water is contaminated in this location, tens of thousands of people stand to be affected in Jefferson County, Northern Virginia, and Maryland, as well as the water quality of the Chesapeake Bay. Therefore, Rockwool should be required to obtain an individual permit. (47CSR10 Section 13.4.c.2.A. and 13.4.c.2.D)

It is easily ascertainable that the Rockwool Ranson facility is sited on karst geology.[6] Despite this information being readily available, when originally permitting the Rockwool facility the Site Selection Criteria (West Virginia Legislative Code §47-58, Groundwater Protection Regulations, Section 4.10) were not followed. "Facilities or activities must determine if they are planning to locate or expand into areas of karst, wetlands, fault(s), subsidence, or delineated wellhead protection areas, as determined by the Bureau of Public Health. If areas of karst, wetlands, fault(s), subsidence, delineated wellhead protection areas or other areas determined by the director to be vulnerable based on geologic or hydrogeologic information, are determined to exist, then the facility or activity design must adequately address the issues arising from locating in the area(s) of a potentially more vulnerable groundwater resource." (See Exhibit D.) This facility should never have been permitted to be located on karst. And Rockwool clearly failed to describe the karst underlying its facility and its understanding of the risks associated with the presence of karst in its original 2017 stormwater construction permit application.

A karst landscape is characterized by the presence of sinkholes, springs, caves, ridges and sharp projections in the underlying bedrock, and highly irregular soil-rock interface. The karst landscape is a consequence of the presence of soluble bedrock, which consists of limestone in the case of Jefferson County. In such landscapes water percolates through the ground and dissolves the underlying rock creating a porous network of caverns and throughways. Karst aquifers are known to be "extremely vulnerable to pollution," due to direct connection between the surface

[6] Doctor DH, Doctor KZ. Spatial analysis of geologic and hydrologic features relating to sinkhole occurrence in Jefferson County, West Virginia. Carbonates and evaporites. 2012 Jun 1;27(2):143-52.
Doctor DH, Weary DJ, Brezinski DK, Orndorff RC, Spangler LE. Karst of the Mid-Atlantic region in Maryland, West Virginia, and Virginia. Field Guides. 2015 Sep 1;40:425-84.
Doctor DH, Weary DJ, Orndorff RC, Harlow, Jr GE, Kozar MD, Nelms DL. Bedrock structural controls on the occurrence of sinkholes and springs in the northern Great Valley karst, Virginia and West Virginia. In Sinkholes and the engineering and environmental impacts of karst 2008 (pp. 12-22).

and underlying high permeability aquifers.[7] The groundwater at the Rockwool site is only 60 feet below the ground.[8] However, at the locations of the water reuse pond and the stormwater pond, large amounts of earth have been removed, meaning the groundwater is even closer to the contents of the pond than 60 feet.[9]

The Rockwool site is on a karst feature known as an "Arabian plain." This is an upland area with relatively few surface streams, seasonal variability in the water table that results in numerous estavelles, and large amounts of water in the epikarst. This water is easily contaminated and the springs at the margins of the Arabian plain are directly affected by the water quality throughout the aquifer (Exhibit E). It is known from several dye studies that this water flows and diffuses relatively quickly. This is significant as the majority of Jefferson County residents depend on wells for water. The exact number and location of wells in Jefferson County is unknown, because Jefferson County did not have a consistent record of wells until county ordinances were created in 1980. Many of the wells most vulnerable to contamination of any type are those wells built before 1980, which are shallower and have inconsistent construction that makes them prone to inflow. The water in the epikarst at the Rockwool site will affect the drinking water of a majority of Jefferson County residents.

In a dye test performed by the USGS in 1988 and 1989 it was found that the water from just adjacent to the Rockwool site emerged in the headwaters of both the Elk's Run and Rattlesnake Run[10] (Exhibit F). The Elk's Run headwaters is a spring about three miles south east of the Rockwool site and goes on to become the drinking water source for Harpers Ferry and Bolivar before emptying into the Potomac River (Exhibit F). The headwaters of Rattlesnake Run is a spring about 3.5 miles from the Rockwool site and is also a tributary of the Potomac River. These are just two examples of the examples the dye test demonstrated, of how the groundwater at the site communicates with and affects the surface waters in the county.

The Rockwool facility is in the Rocky Marsh Run watershed, which is in the source water protection zone for Shepherdstown and drains to the Potomac River. In fact, Jefferson County has 25 watersheds that empty either directly into the Potomac or into the Shenandoah before it joins the Potomac River. **In this way, the surface waterways of Jefferson County have a direct effect on the Chesapeake Bay and as such are required to adhere to Chesapeake Bay watershed-wide federal requirements.**

Through both the groundwater aquifer and Rocky Marsh Run, the activities at the Rockwool facility have the potential to affect the drinking water of the great majority of Jefferson County

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[7] Gutiérrez F, Parise M, De Waele J, Jourde H. A review on natural and human-induced geohazards and impacts in karst. Earth-Science Reviews. 2014 Nov 1;138:61-88.
Ford D, Williams PD. Karst hydrogeology and geomorphology. John Wiley & Sons; 2013 May 3.
Zhou W, Beck BF. Engineering issues on karst. In Karst management 2011 (pp. 9-45). Springer, Dordrecht.
[8] Carpenter DL, Connelly DT, M Innis. Project Shuttle, Site Characterization Report VRP (Volunteer Remediation Plan) Parcel Jefferson Orchards Site. Environmental Resources Management. 2017 Sept.
[9] *Id.*
[10] Kozar MD, Hobba WA, Macy JA, Geohydrology, water availability, and water quality of Jefferson County, West Virginia with emphasis on the carbonate area, US GEOLOGICAL SURVEY, 1991

residents, but also through its effects on the tributaries of the Potomac River, the drinking water of Northern Virginia and Maryland, and the Chesapeake Bay.

For decades now policy makers have been using "Aquifer Vulnerability" measures, of which karst is very high, to set land use and water resource protection policy.[11] The guiding documents of the WVDEP recognize this. The introduction to the WVDEP document *Stormwater Management Design in Karst Areas* states, "it is important to note that the potential for geological hazards, damage to infrastructure, and groundwater contamination is an ongoing concern when developing in these areas. And that best approach is to craft stronger comprehensive land use plans that direct new growth away from karst areas to more appropriate locations."[12]

Further, Karst is known to have "severe ground instability problems"[13]. This makes the "aquifer vulnerability" in karst areas very high[14]. This also makes karst geology prone to sinkhole development. Sinkholes provide direct connection between the surface water and any contaminants it may contain and the groundwater.

The Rockwool site is located in the area with the largest sinkhole density in Jefferson County (Exhibit G).[15] Furthermore, a study demonstrated that in this area, several factors increased the rate of sinkhole development and these included presence of surface water and development (see footnote 13). Again, the WVDEP guidance documents agree. The Chesapeake Bay karst stormwater guidance document[16], which WVDEP cites in the *Stormwater Management Design in Karst Areas*[12], clearly states that detention and retention ponds are not recommended on karst. Quoting WVDEP's own karst guidance: "attenuating surface runoff will increase the rate of sinkhole formation and potential groundwater contamination." Therefore, just by virtue of disturbing the ground on the site and creating ponds as Rockwool is doing, Rockwool has a high potential to actually increase the rate of sinkhole development. In Rockwool's own geotechnical investigation report prepared for Thrasher Engineering by Specialized Engineering, it states the following:

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[11] Machiwal D, Jha MK, Singh VP, Mohan C. Assessment and mapping of groundwater vulnerability to pollution: Current status and challenges. Earth-Science Reviews. 2018 Oct 1;185:901-27.

[12] Appendix C: Stormwater Management in Karst Area, in West Virginia Stormwater Management and Design Guidance Manual, Center for Watershed Protection, Inc, 2012, Nov; C1-C4

[13] Doerfliger N, Jeannin PY, Zwahlen F. Water vulnerability assessment in karst environments: a new method of defining protection areas using a multi-attribute approach and GIS tools (EPIK method). Environmental Geology. 1999 Dec 1;39(2):165-76.

[14] Machiwal D, Jha MK, Singh VP, Mohan C. Assessment and mapping of groundwater vulnerability to pollution: Current status and challenges. Earth-Science Reviews. 2018 Oct 1;185:901-27.

[15] Doctor DH, Doctor KZ. Spatial analysis of geologic and hydrologic features relating to sinkhole occurrence in Jefferson County, West Virginia. Carbonates and evaporites. 2012 Jun 1;27(2):143-52.
Doctor DH, Weary DJ, Brezinski DK, Orndorff RC, Spangler LE. Karst of the Mid-Atlantic region in Maryland, West Virginia, and Virginia. Field Guides. 2015 Sep 1;40:425-84.
Doctor DH, Weary DJ, Orndorff RC, Harlow, Jr GE, Kozar MD, Nelms DL. Bedrock structural controls on the occurrence of sinkholes and springs in the northern Great Valley karst, Virginia and West Virginia. In Sinkholes and the engineering and environmental impacts of karst 2008 (pp. 12-22).

[16] CSN Technical Bulletin no. 1, Stormwater design guidelines for karst terrain in the Chesapeake Bay watershed, version 2.0, 2009

> "Some sinkholes failures can be induced by construction activities and are of significance because the sinkholes can directly affect the site being developed, either immediately or some years later. Construction activities that can trigger sinkholes include 1) diversion or impoundment of drainage or dewatering activities, 2) removal of overburden cover, 3) shock vibrations, such as blasting, and 4) increased loading.
>
> Prediction of sinkhole location or occurrence is difficult, if not impossible, and there is always a significant degree of uncertainty associated with the occurrence of future sinkholes. Structures built within the area of influence of a sinkhole can also be affected by sinkhole collapse or subsidence.
>
> By virtue of the underlying geologic formation, the Owner must acknowledge there is an inherent risk of potential ground subsidence or collapse associated with construction of structures in karst terrain. All sites in karst terrain have the potential for sinkhole formation. **Specialized Engineering can provide no warranties or guarantees regarding future sinkhole or subsidence conditions**."[17]

In direct contradiction of all of this guidance, Rockwool built several retention ponds, and multiple concentrating swales and ditches. Furthermore, according to site map 16B (exhibit H) Rockwool chose to build two retention ponds far larger then is recommended on karst and several swales in the most sinkhole-vulnerable location on their property.

As of September 2019, there were at least 17 sinkholes on Rockwool's site as can be seen on the site map (Exhibit I). Sinkholes anywhere on Rockwool's property pose a risk of groundwater contamination. As noted previously, a majority of the particulate matter from the steam stack is expected to fall within the bounds of the Rockwool property and be entrained in rainwater that may enter such sinkholes along with any other ground level contaminant that may be present.

Unfortunately however, most of the sinkholes have been inside of stormwater ponds, with seven sinkholes appearing in Rockwool's rainwater reuse pond during construction (Exhibit I). This poses an alarming possibility. The rainwater reuse pond is the reservoir for all of the pollutants produced at Rockwool and this structure developed at least 7 sinkholes during construction alone. In light of this, one can easily see a scenario where a sinkhole develops in the rainwater reuse pond and leads to catastrophic contamination of the groundwater aquifer in Jefferson County. This would affect the drinking water of tens of thousands of people in Jefferson County, and through its direct effects on the surface waterways and the Potomac River the drinking water of Northern Virginia and Maryland and the Chesapeake Bay.

Rockwool's proposed stormwater pond design is inadequate and inappropriate for karst terrain, especially at this critically sensitive location. Rockwool's sinkhole mitigation procedure includes adding liners to the ponds. It is well known and studied that liners fail when voids like sinkholes

[17] Project Shuttle -New Industrial Site at the former Jefferson Orchard Kearneysville, Jefferson County, West Virginia Specialized Engineering Project No. 177164, Specialized Engineering 4845 International Blvd, Suite 104 Frederick, MD 21703, July 11, 2017

open under them. In fact, there is a whole field of study into detecting sinkhole development, void development, and earth movement under such liners.

The pond liners Rockwool is using pose several issues. First, they have one layer of 60 mil HDPE liner. It is recommended to have two layers. Sixty mil is also the minimum thickness recommended in the Stormwater Pond Design Guidelines. Because the pond is so large (estimated 72,000 square feet) there will be 3,600 linear feet of on-site welded joints. These joints are the weakest part of the liner and the most likely to fail. Rockwool's HDPE membrane was field fabricated with thousands of feet of welds required to join the rolls of material together. The welds were made in the dirty unconditioned field and are sure to fail due to poor workmanship, cracks, and the unstable soil below. If a large sinkhole opens below the pond, there will likely be catastrophic failure at joints of this liner.

Under this liner, there is a quarter of an inch thick geosythnetic clay layer, and again, there are joints in this layer as well. This is the weakest part of this layer and most likely to fail. This layer is over a geogrid liner, which allows liquids to pass freely through it. Under this are four inches of compacted barrow clay, however the Chesapeake Stormwater Network Technical Bulletin recommends 24 inches of soil or clay. There is no leak detection system shown in the IEP, nor is there a detection system for sinkhole formation. Therefore, although the ponds have three layers of material, only one, the HDPE membrane is designed to prevent liquids to pass through.

The Fabricated Geomembrane Institute recommends a *Double Composite Liner System* where there is potential for groundwater contamination. That system consists of a Primary Geomembrane layer; Geosynthetic Clay Liner/Compacted Soil; Drainage/Witness Layer and a Secondary Geomembrane over Compacted Soil. The Double Composite Liner System provides the best approach to prevent leakage of contaminates from the ponds into the groundwater. No liner system can prevent the catastrophic failure of the system caused by sinkholes opening under the ponds.

A simple search of peer reviewed literature reveals a plethora of information highlighting the risks associated with development in karst geology and many techniques for studying the impact of development on such land. It does not appear as though the municipality of Ranson employed any of these methods when it incorporated or rezoned this area. However, this oversight or lack of due diligence by Ranson does not absolve the WVDEP of its responsibility and liability to protect the water resources. Such a search will also reveal many techniques and methods for designing best strategies for limiting risk in a karst area. It does not appear as though Rockwool employed any of these techniques or guidelines. It seem catastrophic failure of a liner and the contents of the basins escaping into the groundwater resource may be the only way that Rockwool will know a sinkhole has formed under one of its sediment basins.

3. **Rockwool's methods are unlike other mineral wool facilities in West Virginia and thus require an individual permit to appropriately protect the waters of the state.**

The current Multi-sector Stormwater Permit will not do enough to protect the groundwater and surface water resources of Jefferson County and the region. As you know, a general permit is an NPDES permit that covers multiple facilities that have similar discharges and are located in a

specific geographic area based on the permit writer's professional knowledge of those types of activities and discharges. Whereas, an individual permit is written to reflect site-specific conditions of a single discharger based on information submitted by that discharger in a permit application and is unique to that discharger.

Rockwool's method of manufacturing mineral wool insulation is unique and bears little resemblance to methods used by either Knauf or Armstrong, the other two mineral wool manufacturers in West Virginia. Knauf, located in Inwood, is only 10 km from Rockwool, but uses an entirely different technology (electric arc in a closed vessel, with little or no process water). The Armstrong facility in Millwood, on the Ohio River, is not only smaller (30,000-square-foot plant on 18 acres), but itself does not have a Multi-Sector General Permit for stormwater management—it was required by WVDEP to obtain an individual NPDES permit.

There are no other mineral wool facilities that have the same process-based or site location-based stormwater concerns as Rockwool. Rockwool is the only North American mineral wool manufacturer to attempt to build a facility on karst and it is using different processes than other mineral wool manufacturers. Rockwool is using an innovative method of rain harvesting to supplement its domestic water use. An individual NPDES permit is thus appropriate for Rockwool due to its location on karst and high potential for groundwater contamination.

Evaluation of current rain harvesting technologies reveals no other large commercial and industrial facilities that have rain harvesting at the scale that Rockwool proposes. Most significantly, all of the large rainwater harvesting examples have closed vessels and tanks, often in series, to store the captured rainwater/stormwater. There is also no other instance of rain harvesting where process-related wastewater flows into and mixes with the captured rainwater/stormwater. Rockwool's hybrid Water Storage & Reuse Pond is unique and has not been tried before, not even at their facility in Byhalia, Mississippi. Due to the first ever use of a Process Wastewater and Rainwater Harvesting system, Rockwool must not be allowed to proceed under a General Permit.

4. The Rockwool facility poses additional concerns and risk factors that can only be addressed adequately under an individual permit.

There are many concerns at the Rockwool facility that should and could be addressed if Rockwool were required to have an individual permit. These are also relevant factors in determining the risk to the waters of the state from Rockwool and therefore Rockwool should be required to obtain an individual permit. (47CSR10 Section 13.4.c.2.D)

4.1 Inappropriate Pond Design for Karst Geology

Rockwool's sinkhole mitigation procedure includes adding liners to the ponds. However, it is well known and studied that liners fail when voids like sinkholes open under them. In fact, there is a whole field of study into detecting sinkhole development, void development, and earth movement under such liners. In an effort to prevent disaster, Rockwool should be required to

install the latest technology in and beneath the liners for its stormwater pond.[18] In fact, it seems a multimodal approach would be most appropriate here to detect sinkhole development and liner leakage.

In the Chesapeake Stormwater Network Technical Bulletin No. 1, a guiding document cited by the WVDEP, it gives the following general principles that should be considered in site layout and design of stormwater systems in karst.

1. Any existing sinkholes and karst swales should be surveyed and permanently recorded on the property deed or plat. In addition, an easement, buffer or reserve area should be identified on the development plat for the project so that all future landowners are aware of their presence.
2. Minimize site disturbance and changes to soil profile, including cuts, fills, excavation and drainage alteration, near karst features.
3. Sediment traps and basins should only be used as a last resort after all other erosion and sediment control options have been considered and rejected. In the rare instance they are employed they should serve small drainage areas (2 acres or less) and be located away from known karst features.
4. Designers should place a high priority on preserving as much of the length of natural karst swales present on the site to increase infiltration and accommodate flows from extreme storms
5. Treat runoff as sheet flow in a series of small runoff reduction practices before it becomes concentrated. Practices should be designed to disperse flows over the broadest area possible to avoid ponding, concentration or soil saturation.
6. The use of centralized stormwater practices with large drainage areas is strongly discouraged even when liners are used.
7. Centralized treatment practices require more costly geotechnical investigations and design features than smaller, shallower distributed LID practices.
8. Designers must address both the flooding and water quality aspects of post development stormwater runoff. In most localities, the sequence of stormwater practices should have the capacity to safely handle or bypass the 2- and 10- year design storm, following the methods outlined in Section 5.4.
9. Designers should maintain both the quality and quantity of runoff to predevelopment levels and minimize rerouting of stormwater from existing drainage.

None of the above principles were followed in the case of Rockwool. In an individual permit, these and all of the recommendations in the Chesapeake Stormwater Network Technical Bulletin No. 1 need to be followed.

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[18] Guan Z. Study on monitoring and early warning of karst collapse based on BOTDR technique.
Jentsch H, Basedau F, Schwartz A, Witt KJ.
Detection of slipping soil areas with embedded tiny vertical sensing rods. InProceedings of the 6th International Conference on SHM of Intelligent Infrastructure SHMII-6, Hong Kong. The Hong Kong Polytech. Univ., Book of Abstracts, S 2013 (Vol. 289).
Briançon L, Nancey A, Villard P. Development of Geodetect: a new warning system for the survey of reinforced earth constructions. Studia Geotechnica et Mechanica. 2005 Mar 1;27(1-2):21-32.

In the case of principle number 1 above, the Multi-Sector General Permit requires a topographic map be provided that extends at least a mile beyond Rockwool's property that shows the following: all intakes and discharge structures, sinkholes, drinking water wells, springs, and surface water bodies. Rockwool's topographic map and site map are deficient. There are several of these features within one mile that are not shown, including 8 known in-use drinking water wells, 12 total wells, sinkholes, and documented wetlands. Rockwool falsely claims there are no wetlands.[8] Mountaineer Gas Company did an extensive karst inventory of sinkholes prior to installing the natural gas pipeline and those sinkholes are also not discussed or depicted on any maps in the IEP or the General Permit application. Outlet #1 and #2 discharge to a field in the northern area of Rockwool's property; it is unclear from the topographical map if there are sinkholes in this area. These deficiencies in the topographical and site maps must be corrected and accounted for in the design of the stormwater plan. Another deficiency that will need to be corrected is the inappropriate design and location of outlets. An example of such faulty location of outlets is that there appears to be a sinkhole close to the location of the level spreader for the stormwater outlet #1 and #2. If this is the case, discharge from outlet #1 and #2 may make this sinkhole worse and lead to groundwater contamination with surface water.

In table 3 of the Chesapeake Stormwater Network Technical Bulletin No. 1, it says that wet ponds are discouraged, need liners and may require a UIC. They go on to say, "use of wet ponds in karst terrain is highly restricted, because of **frequent recurring failures** due to sinkhole formation." It says, at a minimum, there must be six feet of unconsolidated soil material between the bottom of the basin and the top of the bedrock layer. The maximum temporary or permanent water elevations with basins do not exceed six feet. There must be inspections for sinkholes and they must be reported and addressed immediately. A liner must be installed that meets requirements they set forth in their Table 6 (Exhibit J).

A pond—even a lined one—is simply not appropriate for the rainwater reuse pond, as this pond holds stormwater admixed with process water and serves as a reservoir for pollution. The recommendations and warnings are clear from the guiding documents of the WVDEP to the warning from Specialized Engineering (the firm engaged by Thrasher Engineering to evaluate Rockwool's Ranson site) -- failure of a wet pond in karst—even an optimally lined one—is eventual. This would leave the groundwater and surface water, including the Potomac and Chesapeake, at great risk. Therefore, the contents of the rainwater reuse ponds should be stored in above ground closed vessels that are appropriate for the contents, and monitored appropriately for deterioration. The design of the stormwater ponds should be modified to be in accordance with the recommendations from the guiding documents of the WVDEP. Any ponds that are used should be lined and have a multimodal detection system for both leaks and sinkhole development. This can be addressed in an individual NPDES permit.

The WVDEP approved Rockwool's sinkhole mitigation procedure in 2018. First, the sinkhole mitigation procedure allows too much time to pass between the identification of a sinkhole and when it needs to be repaired – time that allows for possible drinking water contamination. The WVDEP should require reporting within hours of noting the sinkhole, and emergency intervention to happen within 24 hours. The WVDEP should directly oversee these repairs. Each

sinkhole should be evaluated to ensure the optimal remediation procedure is employed.[19] There is no contingency for addressing any new sinkholes, which might open up, nor any discussion of inspecting swales, ditches, or ponds related to the stormwater management to check for new sinkholes. Rockwool has already been cited on September 9, 2018 with a notice of violation in six areas, including failure to report a sinkhole. There needs to be the guarantee of a significant fine for future non-compliance, especially regarding sinkholes. Again, it seems that the only way Rockwool will know they have a problem is when there is catastrophic failure. As mentioned previously, Rockwool should be required to have a multimodal detection system for sinkhole development.

The WVDEP director can and should require Rockwool to perform routine groundwater monitoring. It is unacceptable that Rockwool has not included this in its plans. With regard specifically to outside material storage and disposal areas, and impoundments, for industrial facilities, West Virginia Legislative Code §47-58, Groundwater Protection Regulations, Section 4, states that "placement of groundwater monitoring stations may be necessary to determine if contamination has occurred or is occurring," and "groundwater monitoring stations may be necessary to assure protection of the groundwater resource." Given the information cited previously about the sinkholes on site and our sensitive groundwater resources, WVDEP should require regular and frequent monitoring and reporting of groundwater. This can be required in an individual NPDES permit.

4.2 Buried Utilities

Rockwool failed to inventory and discuss its existing underground pipelines in the Multi-Sector General Permit application. Applicants are required to provide an inventory of all "operations, which may reasonably be expected to contaminate groundwater resources."[20] The following potential sources are specifically listed: Outside materials storage areas, Disposal areas, Loading and unloading areas, Bulk storage and distribution areas, Drums, Sumps, Pumps, Tanks, Impoundments, Ditches, and Underground Pipelines. Rockwool specifically and falsely states that it has zero underground pipelines when, in fact, Rockwool has at least two underground pipelines, including a natural gas pipeline and a liquid oxygen pipeline.

Both the natural gas pipeline and the liquid oxygen pipeline run directly through the area for greatest risk of sinkhole development on the property (Exhibit K). The natural gas pipeline runs between the furnace side of the building and both the Sediment Pond and the Water Reuse Pond, within 10 feet of the stormwater discharge outlets. Rockwool's liquid oxygen runs from the oxygen tanks that sit immediately south of the Stormwater Pond, under the perimeter road and on to the furnace building. This is not an inconsequential fact. As described previously, due to the

[19] Zeng Y, Zhou W. Sinkhole remedial alternative analysis on karst lands. Carbonates and Evaporites. 2019 Mar 5;34(1):159-73.
Zhou W, Lei M. Conceptual site models for sinkhole formation and remediation. Environmental earth sciences. 2017 Dec 1;76(24):818.
Huckert A, Garcin P, Villard P, Briançon L, Auray G. Experimental and numerical approaches of the design of geotextile-reinforced embankments prone to sinkholes. In10th International Conference on Geosynthetics 2014 Sep 21 (Vol. 21).

[20] West Virginia National Pollutant Discharge Elimination System Multi-Sector General Water Pollution Control Permit, Number WV0111457, issue date September 12, 2019, pg. 37

karst geology, these pipelines are at particular risk of damage leading to groundwater contamination or explosion and catastrophic damage. Underground oxygen piping is also particularly vulnerable to damage by lightning, which may ignite the pipe material.

Pipeline ruptures and explosions have occurred all too often as a result of the failure to monitor pipelines for corrosion or cracks. Rockwool has failed to identify any plans for pipeline monitoring. Such plans should be identified and included in any permit, and monitored by the WVDEP to ensure proper oversight and maintenance. The underground pipelines and their proximity to the stormwater ponds and conveyances, as well as monitoring for corrosion and pipeline integrity, should be addressed in an individual permit.

4.3 Other Facility Design, Control, and Operations Stormwater Management Concerns

The section of the IEP Facility Design, Control, and Operations, it states "storage of solid waste or recycled material is constructed with an appropriate concrete surface that is chemically resistant to waste or recycled material. Liquid is not stored in designated solid waste or recycled material areas and containers that are outside have cover lids. The collection system is connected to the process water system and does not discharge to the stormwater outfall."[21] The solid waste area needs to be lined, in addition to a 'concrete surface that is chemically resistant.' This will come into contact with liquid as it is uncovered and is the destination for dewatered sludge from other ponds. These areas have not been evaluated and must be addressed along with the storage of waste products, by-products, and materials destined to be recycled. It is possible that the Resource Conservation and Recovery Act (RCRA) should apply here. This issue needs to be specifically addressed, including an analysis of whether RCRA applies to these waste storage activities; and, if so, whether proper regulatory action has been taken. In addition, Rockwool states that they will generate a waste sludge consisting of spent sulfur dioxide-removal pollutant control chemicals. They say that this material will be stored in a silo and then shipped offsite. As such material is often caustic and may entrain toxic chemicals, it will need to be evaluated as a potential hazardous waste. At the very minimum, Rockwool must obtain a RCRA generator number and be in the state and federal RCRA tracking system.

WVDEP guidance for stormwater controls says it **requires** "the employment of mitigating practices to eliminate potential contaminants from reaching the stormwater structure." Admixed process water and stormwater enter the settling pond, which is a concrete lined forebay to the rainwater for reuse pond, via a 48-inch pipe (exhibit C). The water remains in residence there for some period of time before flowing over a weir into the rainwater for reuse pond. During this residence time, some material settles out of the water. Over time, this builds up in this concrete lined pond. This material is periodically removed using heavy equipment. How will it be ensured that this material is not spilled outside of the concrete lined pond? Just to the south of this settling pond, there is a swale that leads to the stormwater outlet #1 (Exhibit L). If material from the pond is spilled here during clean out of the settling pond, then it will contaminate the stormwater outlet with process materials. This is inappropriate. There should be secondary containment to prevent process materials from entering stormwater in this location. Using closed

[21] Rockwool IEP submitted with the General Multi-sector Application, section 5.2 Facility Design, Control, and Operations. 2019 pg22.

vessels for the admixed rainwater process water storage would also solve this. This could be addressed in an individual NPDES permit.

The water in the rainwater for reuse pond is drawn back into the process via a pump inlet and pump station (Exhibit M). How will leaks at this liner penetration point be prevented? This needs to be addressed.

The IEP describes how the rainwater reuse pond is sized for a 100-year rain event, and in the event that it is approaching capacity due to a large storm event, Rockwool can store and treat the water. "For example, RAN5 could employ water tank trucks to haul off water to be treated at a designated publicly owned treatment works [POTW]." It is unclear which POTW they are referring to. If it is Charles Town, this should have been described in the NPDES modification that was approved on March 1, 2019. Since it was not described, it should not be allowed by the Charles Town Utility Board (CTUB). This is too serious a risk to not be specifically addressed. Rockwool must amend its application to identify what is the trigger for the preparation for a "heavy rain event," where are the water tank trucks going to come from, if the trucks are contracted, how will Rockwool ensure that they are actually available when needed, how will it ensure that the drivers and operators of these water tank trucks are actually properly qualified to be handling contaminated water, and most importantly, where will these trucks dispose of the contaminated water? What location has agreed to take such water? This could be addressed in and individual NPDES permit.

Rockwool should be required to test the contents of each tanker truck before it is hauled away, to ensure no hazardous materials are mixed with rainwater, and that the trucks are not then contaminated for further water hauling. This should be further evaluated and well defined in the Rockwool permit application. This could be addressed in an individual NPDES permit.

In the most recent publicly available version of the internal plumbing plans of Rockwool (12-13-19) on sheet PA0201.2 there is a sump pit in building number 135 (Exhibit C 10). The label states "Pump piping up and out of pit. Flow has 2 options valve with pipe to outside for release outside or valve with hose connection for a local tote." In the letter to Mr. Hennessy dated December 13, 2019 by Daniel Ferrell, P.E. Principal in Charge of the Thrasher Group, Inc. the engineering firm of Rockwool referenced above, he states:

> "For ease of construction, water from this sump will be tied into process water system. For clarification, there are no sumps connected into sewer system. Further clarification can be provided that as per the note indicated on PA021.2 that these sumps are monitored and controlled by plant operator. If the plant operator determines there will be no negative impact, the sump discharge will enter the storm system. This will only occur after the plant's operator evaluates the discharge."

Where does this discharge go when it is "released outside"? How does the operator evaluate the discharge? Is this an unpermitted discharge? This needs to be addressed and appropriate protocols developed for evaluating the discharge need to be put in place and an appropriate discharge location be determined and designated. This can be done in an individual permit.

4.4 Groundwater Protection Plan and Monitoring

A great majority of the households and agricultural businesses in the area surrounding the Rockwool Ranson facility depend on groundwater. If the groundwater were to be fouled, it would devastate Jefferson County and surrounding regions' equine and agricultural industry, and therefore, our economy. It would saddle our local government with restoration cost and legal cost as citizens seek restitution. It would be a major burden to households who will be forced to find alternate, undoubtedly more expensive, sources of water. We have repeatedly seen this play out across our state as the consequences of previous industrial and extractive activity manifested. Here, we have the chance to prevent such devastatingly negative consequences. We are counting on the WVDEP to protect the groundwater we depend on in Jefferson County.

The Multi-Sector application, section 19, requires a Groundwater Protection Plan (GPP), either standalone or in combination with a Stormwater Pollution Prevention Plan, and each must be certified. As provided its IEP, Rockwool's description of groundwater data is woefully incomplete and demonstrates a cursory analysis of what is truly a foundational concern. The WVDEP guidelines for successful Groundwater Protection Plan list the groundwater analysis, data, and other related information that should be included. While Rockwool mentions it exists, it barely addresses it. As described in West Virginia Legislative Code §47-58, Groundwater Protection Regulations, Section 4.11, "Each industrial establishment shall have a comprehensive groundwater protection plan (GPP). Each GPP shall contain the following:" Among many elements, the following is listed: "A discussion of all available information reasonably available to the facility/activity regarding existing groundwater quality at, or which may be affected by the site." Previous groundwater data and monitoring are easily available from extensive USGS and county research, yet Rockwool doesn't describe them. Rockwool also fails to describe the geophysical testing done in 2017.[17] The narrative references groundwater data that are included in a table in the appendix, but the appendix section is incorrectly titled, the table has no descriptive text, and does not even label the units of measurement, rendering it useless.

As cited in the sinkhole section previously, there are published studies that are applicable to the Rockwool site and sinkholes. A USGS study used dye tracer tests to determine rates and directions of groundwater flow within the karst aquifer. Dye was injected into a sinkhole in Shenandoah Junction, about a mile from Jefferson Orchards. Two weeks later, the same dye was detected at a monitoring point north of Shepherdstown. Within 20 weeks, it was detected at an additional 5 sites between Kearneysville and Shepherdstown. The study reported movement of up to 840 feet per day – which indicates that contamination can happen quickly. This sort of information is in fact "reasonably available to the facility" and should have been included and considered, and would be able to be in the context of an individual permit.

The director of the WVDEP can and should require Rockwool perform routine groundwater monitoring. West Virginia Legislative Code §47-58, Groundwater Protection Regulations, Section 4, states that groundwater monitoring stations may be necessary to determine if contamination is occurring or has occurred, and also to "assure protection of the groundwater resource." In section 4.9.c. it goes on to say, "new facilities shall monitor groundwater upon order of the director if the director reasonably believes that an industrial establishment or activity has the potential to contaminate groundwater." Page 69 of the WVDEP stormwater management guidance document states, "monitoring wells and groundwater sampling may be required by the

director for the assessment of the potential for or existence of groundwater contamination." It is reasonable to believe Rockwool has the potential to contaminate groundwater, and monitoring for groundwater contamination should absolutely be required in Jefferson County. Given what we know about the sinkholes on site and our sensitive groundwater resources, and knowing that at least 70% of the people in this county drink well water, the WVDEP should require frequent monitoring and reporting of groundwater. This should be addressed with an individual NPDES permit.

4.5 Inappropriate Description of Pond and Site Runoff Design

Rockwool states, "the outfall discharges water onto an outlet apron during discharge to maintain non-erosive discharge velocities." The outfall apron needs to be better described and monitoring parameters with action trigger points need to be defined to prevent erosion and sinkhole formation. This could be addressed in an individual NPDES permit.

4.6 Rockwool's IEP Fails to Identify All Outdoor Process Activities

Rockwool's air permit (R14-0037) describes a "melting furnace portable crusher" as an outdoor process. This process is a significant source of dust and fugitive particulate matter, third only to the two steam stacks. This process is planned at least quarterly. BACT limits imposed on the crusher are limited to operational time limits (540 hours/year). The EPA pointed out that this was inadequate for BACT on this process, in its comments on the air permit[4]. The air permit describes this process as occurring in a dedicated area that is uncovered, B170. Therefore, B170 is also a materials processing area in addition to a storage area for process-related industrial pollutants as described in a previous section. Again, this area is uncovered, unlined, and about 20 feet from the Water Reuse Pond and Bioretention Basin #2. This outdoor process should be considered in an individual NPDES permit.

4.7 IEP Fails to Address the Potential for Dust and Particulate Contamination of Stormwater Discharges

Rockwool will produce fugitive dust and particulates that may contain formaldehyde, menthol, phenol, silane coupling agents, and other hazardous substances. Several processes generate fugitive dust, including the portable crusher operation mentioned in the previous section. This process is entirely uncontained and uncontrolled by any pollution control devices. In addition, Rockwool's controlled processes will produce up to 134 annual tons of PM2.5 and 154 annual tons of PM10. Air modeling suggests that the bulk of the dust and particulates will fall out within Rockwool's drainage and be deposited on building roofs, asphalt surfaces, parking lots, roads, and vegetation. The stormwater, which falls on these surfaces, will capture the dust and hazardous particulates contained within and convey them to the stormwater and bioretention ponds and outlets. As a consequence of the toxic nature of the underlying contaminants, these captured contaminants have the potential to negatively impact groundwater and surface water. The effect on water resources has not been evaluated and needs to be addressed. This could be addressed in an individual NPDES permit

4.8 Internal Plumbing Plans Should Be Included in the Application

The IEP shows that the Stormwater Management Pond that drains areas HrC and HeB, which covers parts of the manufacturing facility, discharges to a field north of Rockwool through Outlet #1. This Outlet #1 is expected to have discharge of 86,330 gallons per day. Is all this water in

fact stormwater? Further, in section 4.4.7 of the IEP, it states, "no interior building floor drain is designed for connection to the storm drain system." However, we know from evaluating the plumbing plans that the process water admixes with stormwater and enter the rainwater for reuse pond.

It appears from site plan sheet 000-015 that process water from some of the buildings enters the storm drain system that enters the stormwater pond that discharges to outlet #1 and the natural environment. The WVDEP must require that the application contain the internal plumbing plans, to determine that no process water from the facility is expected to be discharged into ponds with a discharge to the natural environment. These issues could be addressed with an individual NPDES permit.

4.9 Storage of Unknown Chemical in Close Proximity to Water Resources

Seven of the 13 Aboveground Storage Tanks (AST) on site have undisclosed contents and hold 88,500 gallons of unknown chemicals. If the contents of the ASTs are unknown, there is no way to determine if the ASTs are in compliance with 47 CSR 63 (AST Design Construction and Installation), or if proper and adequate containment is provided. It is impossible to evaluate the application for adequate groundwater protection water resources absent this information. Further, it is reckless to allow unknown industrial chemicals this near stormwater ponds, sinkholes, and water supply protection zones on karst geology.

Additionally, there is no information provided about Rockwool's plans to monitor and ensure tank integrity. The risk of corrosion, leaks, and vapor releases from storage tanks has resulted in multiple disasters in this country. Rockwool's permit application must include its plans for tank integrity inspection.

If there were a spill, the public utility leaders would need to know the contents immediately. This information needs to be on file so an appropriate plan can be made before it is an emergency situation. Disclosure of the contents of these ASTs is imperative, required by statute, and should be part of the permit. This could be addressed in an individual NPDES permit.

4.10 Substantial Harm Determination

The Rockwool facility is located such that any toxic release to groundwater or surface water from the facility would shut down at least one public water supply and should therefore be classified with a Substantial Harm Determination. Harpers Ferry sources their drinking water from Elk Run, Jefferson Utilities Inc. from the aquifer, and Shepherdstown from Rocky Marsh Run. Additionally, there are thousands of households, businesses, and farms that source their drinking water for humans and animals from private wells in the aquifer. As discussed in the karst section of this document, the aquifer is contiguous over a long area of the county and the flow rate of the aquifer is rapid. A Substantial Harm Determination would require some relevant safeguards be in place. This could be addressed in an individual NPDES permit.

4.11 Waste Material Usage

Rockwool states, "no wastes or waste materials are used for deicing, fills, or any other uses on site unless provided for in an existing rule." The "existing rule" needs to be further defined so that it can be determined what material is being used for what. Rockwool plans to use waste

material back into the furnace. As described in "Section G. Waste Material" of the ground water protection plan this use needs to be allowed either by regulation or permit. What regulation or permit covers this activity? Similar to as stated previously, this issue needs to be specifically addressed, including an analysis of whether RCRA applies to these waste usage activities; and, if so, whether proper regulatory action has been taken. The effect of this waste treatment, storage, and use on the water resources needs to be addressed.

Conclusion

This Petition is not an exhaustive list of the issues that need to be addressed in an individual NPDES permit for the Rockwool Ranson facility. The public simply does not have all of the information, such as the complete up-to-date plumbing plans, to present an exhaustive list of the basis for an individual permit. However, what is obvious is that due to the inappropriate siting and unique process of rainwater harvesting and process water recycling, that the processes at the Rockwool Ranson facility will not be adequately addressed under the General Multi-sector Stormwater Permit. Further, it is clear that Rockwool produces significant amounts of pollution and poses a risk to waters of the state. Therefore, Rockwool should be required to apply for and obtain an individual NPDES permit.

The Jefferson County Foundation respectfully requests that the Department consider the information provided within this submission on Rockwool's Multi-Sector Industrial Stormwater Permit Application No. WVG611896, and formally respond to this Petition filed pursuant to 47 CSR 10 Section 13.6.b.2.A and require Rockwool to obtain a valid individual permit. Granting this petition will ensure that appropriate protections and oversight can be applied by the WVDEP to address all of the unique concerns the Rockwool facility poses to Jefferson County.

We believe that the information here and available to the DEP in its assessment of the petition, will prove that this is exactly the type of situation contemplated by the rule, to ensure that – whereas here – that a facility poses unique challenges, it deserves unique consideration. As we explained above:

- Rockwool is a significant contributor of pollution and as such should be required to obtain an individual permit.

- Rockwool's facility is being located in a hydrogeologic setting with vulnerable groundwater resources, which can only be protected via the careful and tailored use of protective measures able to be imposed via an individual permit.

- Rockwool plans novel methods that are unlike those used in other mineral wool facilities in West Virginia and thus an individual permit is needed to appropriately protect the waters of the state.

- We presented 11 other specific concerns, which have been identified that require an individual permit to be adequately addressed.

Based on all the above information, Jefferson County Foundation petitions you, Mr. Caperton, to require that Rockwool apply for and obtain an individual NPDES permit for its Ranson facility. Please contact me for any further information that you believe would be helpful in evaluating the petition.

Regards,

Christine L Wimer

Dr. Christine L. Wimer
President, Jefferson County Foundation, Inc.