

Jefferson County Foundation, Inc.

November 4, 2019

Director, Division of Water and Waste Management, WVDEP
ATTENTION: Sharon Mullins, Permitting Section
601 57th Street SE
Charleston, WV 25304-2345
Sharon.A.Mullins@WV.Gov

RE: Public Hearing/Notice No. SM-108-2019. Application Nos. WVR108876 reissue #2 and WVG611896.

Dear Director:

The Department of Environmental Protection should deny Rockwool requested permits because it is unable to operate its proposed business in a manner that protects the water recourses of Jefferson County. For the reasons stated below, Rockwool has not demonstrated the competence or capability to comply with the various controlling regulations established to protect the water recourses of the County, and thus the surrounding waterways. The failure of Rockwool to demonstrate the technical competence necessary to build and operate its facility is reason alone to deny the permits; or, in the alternative to modify the permits in a manner that requires Rockwool to take mitigating action to prevent groundwater and surface water contamination far beyond what it is doing now.

The issues identified below, as well as other information that has been provided to the DEP, raise serious issues not currently addressed by any DEP evaluation. The law requires that DEP consider and respond to all comments in a substantive manner, and we expect the DEP response to comprehensively address the issues raised below. Please note and take into consideration that a great majority of the people and agricultural businesses in Jefferson county depend on groundwater and cannot feasibly, for financial, logistical, and geographical reasons, switch to using treated water.

Finally, as discussed below, we believe that the DEP should hold an “evidentiary” hearing in Jefferson County in which the public is able to present the technical, expert, evidence about the existential threat posed to the water sources in Jefferson County. We have the evidence necessary to demonstrate that allowing Rockwool to operate here presents a risk that the DEP should not allow, and will create liabilities that West Virginia cannot bear. We believe that an evidentiary proceeding would be the most efficient and effective manner for the DEP to

determine whether Rockwool is able to operate its facilities in compliance with the controlling state and federal environmental regulations.

Comments on Permit Registration No. WVG611896, which allows operation under WV NPDES Permit No. WV0111457 Multi-Sector Stormwater General Permit.

Technical Comments on WVG611896

Hydrogeologic setting and associated vulnerability of groundwater resources:

Site selection and planning:

It has been well defined that the Rockwool's Ranson facility is sited on Karst geology¹. 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". This facility should never have been permitted on karst. Rockwool clearly did not describe an understanding of Karst in its original 2017 permit application.

Rockwool should be sited in a more appropriate location.

Karst aquifers are known to be "extremely vulnerable to pollution" due to direct connection between the surface and underlying high permeability aquifers². The groundwater at the Rockwool site is only 60 feet below the ground. Further Karst is known to have "severe ground instability problems"³. This puts buried utilities like sewer and gas lines at risk for damage or

¹ Doctor DH, Doctor KZ. Spatial analysis of geologic and hydrologic features relating to sinkhole occurrence in 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).

² 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.

³ Doerflinger 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.

failure with subsequent ground or surface water contamination. This makes the “aquifer vulnerability” in karst areas very high⁴.

A simple peer reviewed literature search 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 DEP 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 maybe the only way that Rockwool will know a sinkhole has formed under one of its sediment basins.

It is clear that 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. 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.”

This development is clearly inappropriate for this location. Information to this effect is well rooted in the peer review literature and has been widely available for decades now. Why then would this industrial permit be approved? Rockwool should relocate in a more appropriate location where it is not such a risk to the water resources. Rockwool has clearly not demonstrated an understanding of the importance of the hydrogeologic setting and therefore at least the permit should be denied until it is more appropriately understood and addressed.

Sinkholes:

Karst geology is 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 (see footnote 1). 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 1). Again, the DEP guidance documents agree. The Chesapeake Bay karst stormwater guidance document, which WVDEP cites, clearly states that detention and retention ponds are not recommended on Karst. Again, quoting WVDEP’s own Karst guidance:

⁴ 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.

“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 seeking permit permission to maintain, Rockwool will actually increase the rate of sinkhole development.

As of this summer, there were at least 17 sinkholes on Rockwool’s site. Most of these sinkholes are inside of stormwater ponds, with seven sinkholes appearing in Rockwool’s rainwater reuse pond during construction. Rockwool was cited for failure to report a sinkhole, when the first sinkholes appeared in 2018.

The DEP 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 DEP should require reporting within hours of noting the sinkhole, and emergency intervention to happen within 24 hours. The DEP should directly oversee these repairs. Each sinkhole should be evaluated to ensure the optimal remediation procedure is employed⁵. 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. Again it seems that the only way Rockwool will know they have a problem is when there is catastrophic failure. As mentioned above Rockwool should be required to have a multimodal detection system for sinkhole development.

In the IEP, Rockwool states, “due to the karst features underlying some of the property, voids and soil filled zones are located within some of the Limestone bedrock. A geotechnical survey conducted in 2017 identify karst anomalies within this property. Following the geotechnical survey and during construction, Rockwool identified and mitigated ten sinkholes on site reported to the WVDEP, as of June 21, 2019, shown on the attached Figure 2A. Rockwool prepared a supplemental Structure Sinkhole Repair document that was approved by the WVDEP to properly repair the sinkholes and mitigate potential contaminant pathways to groundwater. During construction, identified and located sinkholes were remediated following the procedure described in the supplemental sinkhole repair document, approved by WVDEP. The intention of repairwork was to minimize infiltration and additional solutioning.” With repeated mention of “WVDEP approval”, it is obvious that Rockwool is putting the liability with respect to sinkhole management on the DEP. Shockingly, this paragraph is the first mention of karst in the document. This statement is not even correct, as there were at least 17 sinkholes on site at this date.

⁵ 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. In *10th International Conference on Geosynthetics 2014* Sep 21 (Vol. 21).

Rockwool's sinkhole mitigation procedure includes adding liners to the ponds. 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 liners⁶. In fact, it seems a multimodal approach would be most appropriate here to detect sinkhole development and liner stress given the risks associated with failure.

The DEP 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 above about the sinkholes on site and our sensitive groundwater resources, DEP should require regular and frequent monitoring and reporting of groundwater.

Inappropriate storm water design for Karst geology:

In this section, Rockwool mentions 10 sinkholes were identified as of June 21, 2019, however, the number identified at that time was 17. Further they say, "the Level 1 Bioretention Areas are designed so that infiltration is not used." This needs to be clarified. These bioretention ponds are not noted to be lined so it is unclear what Rockwool is referring to when it says infiltration is not used. This needs to be addressed before this permit can be approved.

Topographic and Site Map:

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 known in use drinking water wells, sinkholes, and documented wetlands. Rockwool falsely claims there are no wetlands. Further, Rockwool only depicts 10 of the 17 documented sinkholes on its property and none beyond its property. 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

⁶ 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. In Proceedings 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.

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. Further, these deficiencies reflect a lack of respect for the neighboring community and resources.

Buried Utilities:

Rockwool failed to inventory and discuss its existing underground pipelines in the multi-sector general permit. Applicants are required to provide an inventory of all "operations, which may reasonably be expected to contaminate groundwater resources." 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.

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 Detention Pond, under the perimeter road and on to the furnace building. This is not an inconsequential fact. As described above, due to the 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 DEP to ensure proper oversight and maintenance. The underground pipelines and their proximity to the Stormwater ponds and conveyances should be discussed in the IEP, as well as monitoring for corrosion and pipeline integrity.

Groundwater Protection Plan and monitoring:

A great majority of the households and agricultural businesses depend on groundwater. If the groundwater were to be fouled, it would devastate our equine and agricultural industry and therefore our economy. It would devastate 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 seen this play out across our state as the unknown consequences of previous industrial and extractive activity came to bear. Here we have the chance to prevent it. We are counting on the DEP to protect the groundwater we depend on in Jefferson County.

The section of Rockwool's multi-sector application for groundwater data is woefully incomplete and demonstrates a cursory analysis of what is truly a foundational concern. The DEP guidelines for successful Groundwater Protection Plan lists the groundwater analysis, data and other related information that should be included. While Rockwool mentions it exist, it barely

addresses it. The plan requires “a discussion of all available information reasonably available to the facility of 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. 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 above, there are REAL 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 considered.

The director of the DEP can and should require Rockwool perform routine groundwater monitoring. It is reprehensible that Rockwool has not included this in its plans. 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 here. Given what we know about the sinkholes on site and our sensitive groundwater resources, and knowing that 70% of the people in this county drink well water, the DEP should require frequent monitoring and reporting of groundwater.

Gravel Surfaces:

Rockwool falsely claims to have zero graveled surfaces in the footprint of its drainage areas. There are clearly several areas on the site plan that depict gravel surfaces. Two significant ones include a pad near the sewer pump station and a one-acre, non-paved, non-vegetated, outdoor graveled area referred to as the “waste pit” or “melt for reuse” storage area (corresponds to Area B170 in the Air Permit). The waste pit or melt for reuse storage pad is particularly alarming as the things Rockwool plans to store here include, furnace tap out, melt for reuse, waste insulation, returned insulation, and dewatered Water Reuse Pond cleanout. If these items are stored for more than 180 days, Rockwool may need to apply for a RCRA Subtitle D industrial waste storage permit. These unlined areas are susceptible to infiltration and pose a risk to both groundwater and surface water. These areas have not been evaluated and IEP must discuss

these areas and the storage of waste products, by-products, and materials destined to be recycled.

Process wastewater illegally allowed in Outlet #2:

Storm water that runs off site B170 waste pit or melt for reuse area that is described in the above section will go to Bio-retention Basin #2 via a perimeter ditch and then to outlet #2. This water is not stormwater; it will actually be process wastewater. West Virginia Legislative Code §47-10-2.41 defines “process wastewater” to mean any water that, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product. As described in the above section, site B170 will contain water and materials that have contacted it processes, and come in contact with the aforementioned products. Discharge of anything other than stormwater is prohibited from outlets. Therefore this is an illegal discharge and should not be allowed.

The Water Reuse Pond is not a stormwater structure:

Rockwool states that “filter backwash” and “heat” water will go to the Water Reuse Pond. Rockwool claims the Water Reuse Pond is a stormwater management structure. However, “filter backwash” and “heat” are considered pollutants by the EPA (40 CFR 122.2). Therefore, these materials are process-related industrial pollutants. Further, the pipe that carries these materials to this pond must be treated as a point source of industrial effluent and regulated as an outlet. Rockwool describes in the IEP that runoff from to this pond could, “contain dust from handling of raw materials for the melting process, which would include solid materials such as stones, slags and melt for reuse items,” and this pond could receive sprinkler system drainage from inside the binder storage building. By design, the pond has no outlet for overflow. During construction, 7 sinkholes formed inside of this pond. It is now designed to have a triple liner to prevent further infiltration to groundwater. So, with no outlet and a liner, this is actually a pool, and by Rockwool’s own admission, it may contain more than just rainwater. This pond cannot be classified as simply a stormwater management structure. This pond must have threshold-monitoring requirements with routine sampling of the contents.

The IEP describes how this pool 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.” 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?

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.

Potable water used for Fire protection is admixed with stormwater:

The Multi-sector General Permit has a pure prohibition of non-stormwater discharges. The discharge water that Rockwool seeks permit coverage for contains a significant volume of treated well-water (potable water), supplied by Jefferson Utilities Inc. (JUI), that will be used for fire protection. Rockwool's site plan (approved by the City of Ranson) calls for a fire protection water line, supplied entirely by potable water. Rockwool's Industrial User NPDES permit, issued to the Charles Town Utility Board (CTUB) on March 1, 2019 (WV0022349), the potable water flow for fire suppression will be 75,268 gallons per day. This is a significant amount of water and well water used for fire suppression is not stormwater. Yet, the water from fire line flushing, training, and actual fire fighting would flow through all three of the drainage areas, and would convey to all four stormwater management structures. Rockwool must thoroughly and appropriately characterize how the potable water discharges related to fire protection will be handled so that it does not mix with stormwater. The permit must be modified to address this important issue. .

Rockwool's IEP fails to identify all of outdoor process activities:

According to 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. The air permit describes this process as occurring in a dedicated area that is uncovered and unpaved, 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 must be considered in the IEP.

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 PM_{2.5} 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 before this permit is approved.

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.” Does this mean it will not connect or it may inadvertently even though it is not “designed” to do so? This should be clarified. It continues in this section to say that “floor drains in office space, bathrooms, and other areas are directed through the sanitary sewer to Charles Town WWTP.” These “other areas” need to be clarified to determine where the other areas are and where they discharge. It is unknown if these “other areas” include process area floor drains and if these drain to the Charles Town WWTP. The DEP 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. No permit should be issue until this matter is specifically resolved.

Storage of unknown chemical in close proximity to water rescors:

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 recourses 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. Until this information is included with specificity the permit should be denied.

Substantial Harm Determination:

The Rockwool Facility is located such that any toxic release to groundwater or surface water form 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.

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. The permit should not be approved until this is done.

Inappropriate Facility Design, Control, and Operations:

This sections 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.”

The solid waste area needs to be lined, in addition to a 'concrete surface that is chemically resistant.' DEP guidance for stormwater controls says it **requires** “the employment of mitigating practices to eliminate potential contaminants from reaching the stormwater structure.” Although the rainwater reuse pond is lined, there is still a risk of groundwater contamination via this structure, as there are 7 sinkholes under the pond already. Therefore, more needs to be done to prevent waste products reaching the rainwater reuse pond.

Also, the gravel pit discussed earlier and labeled “waste pit” or “melt for reuse” storage area will also contain waste and it is also unlined. However, this will come into contact with liquid as it is uncovered and is the destination for dewatered sludge form other ponds. These areas have not been evaluated and they must be addressed along with the storage of waste products, by-products, and materials destined to be recycled. It is possible the RCRA should apply here. The permit should not be approved until this issue is specifically addressed, including an analysis of whether RCRA applies to these activities; and, if so, whether proper regulatory action has been taken.

Inappropriate description of ponds 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. Rockwool further states in this section, “for construction activities that will disturb the soil, appropriate notifications or applications are made to the WVDEP and Jefferson County to ensure compliance with local and state requirements. The site is currently continuing construction under approved West Virginia Construction General Storm water Permit, WV 108876.” This is already inaccurate and not being followed. Rockwool did not apply for

coverage under the statewide stormwater construction permit in a timely manner, and has been operating without coverage. This fact must be taken into consideration when making final decisions regarding the trustworthiness and reliability of Rockwool.

Administrative Comments on WVG611896:

There are also administrative reasons that the permits should not be approved. The Multi-sector permit is for post-construction activities and should not be authorized until all construction is complete. At this time, the construction permits have not even been completed. A version of Rockwool's Multi-sector permit was released by DEP to WV Rivers Coalition on October 21, 2019. The PDF contains the word "draft" but the document itself is not stamped draft. A letter, which was not dated, that was sent from DEP to Rockwool says that the permit has already been approved. This coupled with the PDF not being stamped is concerning because the public comment process is not even finished. If the permit was actually approved prior to the public comment period being completed and the issues raised by the public resolved, that would be a violation of the process for granting the permit. Please explain whether this permit was actually already granted, and by whom? If not granted, please explain the letter.

Further the State-wide Multi-sector permit was just renewed on October 12, 2019. This most recently approved version is more protective of the environment and people than was the previous iteration and therefore requires companies like Rockwool to be more vigilant and responsible. Is this why Rockwool's Multi-sector permit was effective on October 12 under the previous iteration of the state wide multi-sector permit that is less onerous and far less protective of our environment and our drinking water? We expect an explanation for the date of issuance, and whether the approval in accordance with the previous Multi-sector permit regulations was actually granted prior to this process being completed. We believe that this may give rise to a legal challenge on the validity of the permit.

Rockwool is a new facility, is not yet operational, and has not submitted a correct or complete application as of yet. The Draft Permit Registration should be corrected to reflect Rockwool's potential operation under the 2019 WVDEP EPA-approved WV NPDES Permit No. WV0111457. However, we believe that when and if Rockwool is able to submit a complete and accurate application that is truly sufficient to protect our ground and surface water resources, this should be an Individual WV/NPDES Water Pollution Control Permit and not a Registration under Permit No. WV0111457. We believe that under 47 CSR 10 Section 13.6.B.2.a that the WVDEP director should require Rockwool to maintain this separate permit that will provide more protection to our groundwater resources.

Inappropriate Signatory:

In section 4.6, it states "4.6.a.1.A. A president, secretary, treasurer or vice-president of the corporation in charge of a principle business function or any other person who performs similar policy or decision making functions for the corporation; or 4.6.a.1.B. The manager of one (1) or more manufacturing, production, or operating facilities employing more than two hundred fifty (250) persons or having gross annual sales or expenditures exceeding twenty-five million dollars

(\$25,000,000), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.” The IEP is signed by Mark Graves; to our knowledge, he does not qualify as a signatory. This is significant, because the permit may have been more accurate if one of the above-mentioned individuals had signed it under penalty.

Public Comment on Roxul’s Permit Registration No. WVR108876 Reissue #2 for Coverage Under the General WV/NPDES Water Pollution Control Permit No. WV0115924

Technical Comments on WVR108876 reissue #2:

Inaccurate limit of disturbance:

According to Deed Book 1197 Image 672 Section C, Section D and Section 2, Rockwool was granted a 5.7 acre construction easement. This acreage should be included in the limit of disturbance (LOD). This would take the LOD to 104.5 acres, triggering the requirements for LOD greater than 100 acres. This is a material and substantial alteration and addition to the permitted facility that is not represented in the existing permit. As required under 47 CSR 10, Section 9.2.b in accordance with Section 10 and the public notice procedures of Section 12, should this information have been reported when it was finalized on October 25, 2019, and should this permit application be revised to reflect this addition?

In addition, defined in the DEP LOD rules, “disturbed area” should include the Water Line, Gas Line, and Planned Sewer Line disturbances that occurred on Rockwool property must also be considered part of Rockwool’s LOD. Further, the previously submitted soil maps in the original 2018 approval of WVR108876 suggest the LOD, based on soil type, to be greater than 100 acres.

These facts have not been taken into consideration in connection with the Permit Reissue and must be prior to any final issuance.

Sinkholes:

Sinkholes, as noted above in the technical comments for the multi-sector permit, are a significant concern as they lead to direct contact of ground water with surface water and any contaminant that surface water may carry. Rockwool doesn’t seem to appreciate or understand this issue. . On July 19, 2019 a DEP permit reviewer requested additional information, “Sinkholes. Include table or color code to denote status of sinkholes.” Rockwool failed to respond in either the application or the draft. The locations of 10 sinkholes are noted, but there are 17 documented sinkholes.

There is no information about current mitigation status of currently documented sinkholes, contingency for addressing any new sinkholes or of detection strategies for new sinkholes in swales, ditches or ponds related to the stormwater management. Under this permit, the only way that Rockwool will know a sinkhole has formed under its sediment basins is when

catastrophic failure of the liner occurs and the contents of the basins escaped into the groundwater resource. This is completely unacceptable.

Rockwool's sinkhole mitigation procedure includes adding liners to the ponds. 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 liners⁷. In fact, it seems a multimodal approach would be most appropriate here to detect sinkhole development and liner stress given the rinks associated with failure.

Receiving Stream:

The receiving stream is again listed incorrectly as Elk Run. Again, the correct stream is Rocky Marsh Run, as is noted on DEP's inspection reports for Rockwool. Naming the right stream is not difficult to do! Yet this is not an inconsequential matter. In fact, it is critical. Understanding the watershed is central to these permits because the whole point of these permits is to protect the water resources!

Inappropriate and ill-defined flows:

Rockwool claims that Outlet 1 will have 86,330 gallons of stormwater flow per day and Outlet 2 will have 10,207 gallons of stormwater flow per day for a sum of 96,537 gallons of stormwater per day. Oddly, this seems high; more peculiar still is that it is nearly equal to Rockwool's average projected industrial wastewater discharge volume of 97,650 gallons per day, as obtained from a flow diagram to the Charles Town Utility Board for their NPDES permit (WV0022349) modification. Why are these numbers so high and what is the significance of the similarity?

Public Notice Sign:

The permit required signage at the site is and has been incorrect since it was installed. It has the incorrect date and was originally installed in the incorrect location. This needs to be addressed prior to the issuance of any permit.

Unresponsiveness to Technical Requirement of Outlet Design:

Velocity dissipation devices are required by the General Permit for the two designated outlets, to limit erosion and sinkhole formation. However, Rockwool's Sediment & Erosion Control Plan only calls for a "flow spreader" (Appendix B, Figure 2). This is inadequate to meet the General

⁷ 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. In Proceedings 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.

Permit requirements and will not protect against erosion. The General Permit requires “Outlet protection from a pond, waterway, diversion or culvert must extend as a properly stabilized waterway to a natural stable waterway.” The outlets are depicted as discharging to an open field. This open field will not act as a natural stable waterway in this karst environment, especially with the potential discharge of 96,537 gallons per day.

This issue must be addressed prior to the issuance or reissuance of any applicable permit.

Administrative Comments on WVR108876 reissue #2:

The public has not been given information to understand which version of the statewide stormwater construction permit Rockwool would be authorized under. The first “2019” version, EPA approved and was effective February 9 of this year, was challenged by some industry groups, and the resulting settlement produced major changes which weakened the permit. Those changes are still pending, because the EPA has not yet approved the revised permit. Which version of the 2019 statewide permit will Rockwool be authorized under? The first version, or the version with substantial changes? The permit should not be approved until this is made known to the public and the public is given time to comment.

Rockwool did not apply in a timely manner for the new 2019 permit and is currently operating without a permit. The 2012 permit it had been authorized under has expired. Again, DEP has not answered our direct questions about this. Any discharges that Rockwool is generating at this time, may be unauthorized and in violation of the Clean Water Act. This kind of flagrant disregard for the rules is unacceptable.

Rockwool began an application process to re-issue its stormwater construction permit in the fall of 2018, but withdrew it for unknown reasons. In November 2018, Rockwool went over one year in construction, and had substantial changes due to sinkhole remediation, yet DEP allowed them to operate without completing the application for re-issue.

Rockwool should be required to stop construction until this current application is approved. DEP stormwater management guidance document notes that groundwater protection plans need to be in place BEFORE stormwater structures are built.

Comments on Rockwool’s Competence and Character for both WVG611896 and WVR108876 reissue #2:

We believe that as career officials and environmentalists, you care about the environment and both how that environment affects quality of life and public health, as well as how human activity and industry affect the environment. For its part, Rockwool has shown from site selection to the careless and the downright negligent way that it has produced applications and

conducted itself, that it has no such respect or care for our environment, our health, or our way of life. As we have highlighted, this is an abhorrently inappropriate location for such an installation and the current iteration of the permits do not go nearly far enough to protect the environment or the public. Further, the level of errors and misrepresentations in every permit Rockwool has submitted and its inability to comply with those permits demonstrates either sheer incompetence or intentional misrepresentation and negligence or both. We want to highlight a few of the many errors, incorrect information, and sloppy report preparation over several permits that call into question Rockwool's ability to hold a permit and operate in accordance with laws and regulations. Attached is a more extensive but not exhaustive list.

In its 2017 application for stormwater construction, Rockwool named the wrong receiving stream on its permit application. The correct receiving stream is Rocky Marsh Run. A year later, Rockwool continues to be inconsistent about this simple fact, using six different incorrect stream names. Sometimes, it correctly names Rocky Marsh Run, in other places, it names other streams, including Shaw Run, unnamed tributary to Elk Run, Pikeside Channel, Cold Spring Run, Opequon Creek, and Evitts Run. Naming the right stream is not difficult to do! This is not an inconsequential matter. In fact, it is critical. Understanding the watershed is central to these permits, because the whole point of these permits is to protect the water resources!

On its multi-sector permit application, Rockwool indicated that its two stormwater outflows were going to be discharged to Evitts Run, which is incorrect, as we just noted. Rockwool also said stormwater was going to the city of Charles Town stormwater management system, which doesn't even exist! At DEP's request, Rockwool has since fixed this error, but it is such a glaring error that one has to ask: was this incompetence or intentional? Again, the correct stream is Rocky Marsh Run. This is important because this stream is in the source water zone for Shepherdstown's water supply! Even more disturbing is that Rockwool does not include the nearby source water protection area for Shepherdstown in its Spill Prevention, Control, and Countermeasure plan. This is alarming because as the receiving stream Rocky Marsh Run and therefore Shepherdstown's water would clearly be affected by a spill. This demonstrates a disregard and carelessness toward the effect they will have on the local water resources.

On permit applications, Rockwool has repeatedly given construction timelines that were many months to years shorter than was actually needed. Rockwool has repeatedly failed to check the box on its applications for "Grading period to exceed 1 year" and sign the associated statement for billing for public notice. This was not simply poor estimation as on the first stormwater construction permit reissue Rockwool responded to application section 10 entitled *Estimated Start and Completion Dates for Project*: "Start: October 2, 2017 Completion: September 2019" This was over 1 year, yet the checkbox was not marked. In May of this year, Rockwool requested and had a termination inspection for its stormwater construction permit. It was clearly not finished site work at that time. The termination was denied for this fact. But what prompted this termination inspection? Was it done in good faith? This demonstrates a general disregard for the requirements and standards.

Rockwool has already been cited for six types of non-compliance of its stormwater construction permit including failure to report a sinkhole. This is deeply troubling because sinkholes are precisely the thing that could have a catastrophic effect on our groundwater and surface water resources. This failure to comply demonstrates either an unacceptable level of incompetence or a disregard for the requirements that rises to the level of malfeasants.

These permits should not be approved and we ask that under 47 CSR 10 Section 13.6.B.2.a that the WVDEP director should require Rockwool to be approved for and maintain an individual WV/NPDES Water Pollution Control Permit and not a Registration under Permit No. WV0111457.

Request for an Evidentiary Hearing for WVR108876 reissue #2 and WVG611896:

Environmental regulations are based on the premise that Permittees, such as Rockwool, operate in accordance with the rules and regulations that have been established to protect the public from environmental contamination and degradation, Rockwool has a duty to comply with all conditions applicable to all permits. WV 47 CSR 10-5.1 To this end there is a relatively complicated and integrated environmental protections regulatory scheme that is supposed to provide that protection, and it is effectively dependent upon voluntary compliance and truthfulness.

It is not possible for the government to be present at every potentially hazardous or contaminating event – every time a worker opens a valve to discharge hazardous chemicals or polluted process water, or every time there is manufacturing malfunction. So, industry is supposed to comply with the laws and follow the requirements of the permits that govern their activities. The Statute clearly states, “The permittee must comply with all conditions of this permit.” WV 47 CSR 10-5.1.(a) In order to comply, a company must be both competent to operate in accordance with those rules and requirements and have the character and integrity to be honest about the inevitable malfunctions, unknown human errors, and unanticipated events that pose a risk to the public.

Rockwool has not demonstrated either the character or competence to be given the permits that it seeks to operate in Jefferson County. As noted throughout this submission, it has provided inadequate, incomplete, inaccurate and misleading information upon which it requests approval for the DEP. Where, as here, Rockwool has failed to “disclose fully all relevant facts, or the permittees misrepresentation of any relevant facts at any time” the Permit may be Suspended or Revoked. WV 47 CSR 10-9.4.a. Rockwool has done just that and provided inaccurate, incomplete and deceptive information designed to frustrate the attempts of the DEP to review and understand its plans and processes. The DEP is a resource stressed organization, with only a few professionals to evaluate the permits, and legions of lawyers from Rockwool to pressure DEP to approve its permits regardless of the information provided.

DEP operates its program under an Agreement with the federal Environmental Protection Agency (EPA), and all applications for permits under the National Pollutant Discharge Elimination System (NPDES) Program must meet the requirements of the EPA approved process. WV Code 47 §47-10-2.3, and the federal Clean Water Act §307, 308, 402, and 405.

As you know, any permit issued “may be revoked, suspended, revoked and reissued, or modified during its terms for causes as set forth in Section 9...” WV Code 47-10-3.4. In addition, where as here, there are conditions of the permit that do not provide for compliance with the applicable requirements of the federal Clean Water Act and the State Acts, no permit should issue at all. WV Code 47 §3.6 (a). So, for example, all of the issues raised above regarding the Karst geology and the risk posed for groundwater contamination have not been adequately addressed and Rockwool can not comply with the requirements of the federal Clean Water Act or state regulations. This is a serious issue that, in its present configuration, make compliance virtually impossible. Additionally, various risk factors identified above, have not adequately been explained, such as the unspecified and undesignated water tankers removing contaminated pond water in a heavy rain event. This, and other issues, confirm that no permits should be issued to Rockwool until adequately and completely addressed. Rockwool has also demonstrated that it does not have the character to be trusted to provide truthful information upon which the department can rely. Although Rockwool’s Vice President Kenneth Cammarato signed the Construction Stormwater Permit application, under the penalty of fine and imprisonment for submitted false information, 47 CSR 4.6 (d), there are several places in the submittal that contain demonstrably false information. As described above, and in other comments, the size of the “limits of disturbance” is the relative timeline for sediment disturbance. Originally, in 2017, the representation was for a mere 21 weeks, now we are already at 10 months of earthwork. See, other comments submitted for additional information on inaccurate and incomplete information regarding the length of time for the grading phase of construction, the size of the area being developed, i.e., more than 100 acres.

For all of these reasons, the citizens of Jefferson County suggest that merely submitted public comment to the Agency for review is inadequate to demonstrate the Rockwool should be granted the permits it seeks. Under the federal Clean Water Act, and other federal statutes, the state of West Virginia must demonstrate that it is able to investigate, review and then monitor any environmental permit that is issued. That it cannot do, and we request that in acknowledgement that the public in this case is more equipped to provide expert review and assessment of the permit applications that apply to our land and our water. We request that we be provided the opportunity to present such expertise at an evidentiary hearing where DEP is able to accept testimony from environmental experts on the reasons that the Rockwool should not be allowed to operate its facility in the location it is building on, hear Rockwool’s answers and explanations and make a determination after the receipt of such expert opinions and analysis. While not provided for by statute, it is also not prohibited by statute, and the Director has the full discretion to grant this request. WV 47 CSR 10 -5.8 “Duty to Provide Information,” requires that the permittee shall furnish to the Director “any information that the Director may request to determine whether cause exists for modifying, revoking, and reissuing, suspended, or revoking this permit or to determine compliance with this permit.” In this case,

the Director could require Rockwool to participate in an evidentiary hearing process as part of the permitting application and, upon receipt of the expert testimony and information provided to the DEP by the public, require Rockwool to respond to the information. Thus, making a decision, based on facts and evidence that challenges the inaccurate and incomplete information which Rockwool has submitted.

Best Regards,

A handwritten signature in black ink that reads "Christine L Wimer". The signature is written in a cursive, flowing style.

Christine L Wimer MS, DVM, DACVS-LA
President, Jefferson County Foundation, Inc.

Enclosure: List of Permit Errors and Inaccuracies