



December 14, 2018

WV Department of Environmental Protection  
Division of Water and Waste Management  
601 57th Street South East  
Charleston, WV 25304

Re: WV0022349

Attn: Sharon Mullins, Permitting Section

Ms. Mullins:

West Virginia Rivers Coalition, on behalf of our members, respectfully submit the following comments on the City of Charles Town's draft permit modification (WV0022349) to accept Rockwool's non-domestic waste at the wastewater treatment plant.

According to the permit application, the Rockwool manufacturing facility, which produces mineral wool insulation, is proposing to discharge 14,900 gallons per day of non-domestic wastewater for treatment in the City of Charles Town's wastewater treatment plant (WWTP). The WWTP is located within the City of Charles Town and discharges into Evitts Run, a tributary of the Shenandoah River within the Chesapeake Bay Watershed. Because of these sensitive water resources, additional scrutiny of this permit modification and its potential impacts on water quality is warranted.

**Chesapeake Bay:** The facility is located within the Chesapeake Bay Watershed. Restoration efforts are underway to improve the Chesapeake Bay and significant progress has been made. The region is currently developing Phase III of the Watershed Implementation Plan (WIP III). This modification will contribute to the pollution load of the Chesapeake Bay Watershed. Waste load calculations showing no net increase in pollution inputs should be included in the application.

**Adequate Infrastructure:** The facility lies approximately 6.75 miles from the WWTP. The permit modification does not provide information on whether the current sewer lines can accommodate the facility or whether updates to the existing infrastructure is needed. This information should be disclosed in the modification.

**Waste Water Treatment Plant Capacity:** The Rockwool facility will produce approximately 14,900 gallons of wastewater per day (GPD) and is permitted up to 17,000 (GPD). There is no supporting data to show that the WWTP can accommodate this quantity of wastewater. In August of 2018 the WWTP reported an upset/bypass at 2 pump stations due to higher than average flows because of a significant rain event. The WWTP could not accommodate the increased flows and an unknown quantity of rain and wastewater was released into Evitts Run. If the WWTP must bypass their treatment processes during storm events, then they will

be unable to treat Rockwool's discharge during storm events. More data to show that the WWTP can accommodate Rockwool's increased quantity of wastewater is needed before DEP can approve this modification. Additionally, the permit modification must show how the WWTP will handle increased flows during storm events before DEP can approve it.

**Stormwater:** The water balance document for the Rockwool facility shows that up to 22,200 gallons per day of stormwater will be captured and treated at the facility, but there are no details that show where this water will be stored, how it will be treated and what it will be used for at the facility. More information on this process is needed to determine whether the WWTP will also be accepting stormwater discharge from the Rockwool facility.

**Water Softener Maintenance Inputs:** The Water balance document states that the Rockwool facility will use a water softener. More information on the water softener treatment process is needed in the application. Water softeners use ion exchange resins to remove Calcium and Magnesium from hard water. Ion exchange resins must be regenerated for continued efficiency. To regenerate the resin, concentrated Chloride salt solutions are flushed through the water softener columns. The frequency of this maintenance operation depends on whether it is a timed process or on demand. DEP must require information on the method used to soften the water, the frequency of the resin flushing process, and the contribution this maintenance process will have on Chloride loads.

**Chloride:** The draft permit lists a maximum daily discharge limitation for Chloride at 5,000 mg/L. The WWTP currently has a discharge of 116 and 97.5 mg/L at outlets 001 and 002, respectively (September DMR). Under the state's water quality standards, the human health criteria for Chloride is 250 mg/L. This permit modification is deficient of the calculation showing Rockwool's daily maximum discharge of up to 5,000 mg/L to the WWTP's can meet the state's water quality standard of 250 mg/L for Chloride. It is unlawful to permit this modification if the discharge of Chloride at the WWTP will exceed water quality standards.

**Discharge Limits for Chloride:** Under the NPDES regulations, if a permit has the reasonable potential to violate water quality standards, then the permittee must receive an enforceable discharge limit in their permit. Currently, the WWTP does not have an enforceable discharge limit for Chloride. The WWTP is only required to monitor and report chloride concentrations in their effluent on a quarterly basis. DEP must place an enforceable discharge limitation on Chloride in the permit modification.

**Chloride Removal:** Even with discharge limitations on Chloride, the permit modification should not be granted. The WWTP will not be able to meet discharge limits for Chloride without significant upgrades to their treatment facility. Once Chloride is dissolved in water, it cannot be removed by settling or biologically degraded. Treatment options to remove Chloride are costly and not feasible. The WWTP would have to install its own reverse osmosis system, use electrodialysis, or microfiltration techniques. All these options are not feasible to implement because of their high costs. The WWTP must show how it plans to comply with

water quality standards for Chloride before this modification can be approved by DEP.

**Impact on WWTP Operations:** Elevated Chloride levels at WWTPs are known to have a negative effect on the biological nutrient removal process, specifically Phosphorus. In one study, phosphorous removal decreased 20-28% when Chloride concentrations went from 150 mg/L to 1,500 mg/L. Phosphorous removal was completely inhibited at concentrations greater than 2,500 mg/L (Hong et. al., 2007). Removal efficiency of organics is also negatively affected at elevated Chloride concentrations. Because the WWTP own process would be ineffective by accepting discharge with elevated levels of Chloride from the Rockwool facility, this permit modification should not be granted. Detailed analysis is needed to determine the impact of the Rockwool discharge on the WWTP operations before this permit modification can be approved. Blindly approving this permit modification without understanding the effect of Rockwool's discharge on the WWTP operations, could disable the WWTP's ability to remove Phosphorous from the effluent.

**Evitts Run:** The discharge from the WWTP drains into Evitts Run. While Evitts Run is not on the impaired streams list, monitoring by the Blue Ridge Watershed Coalition shows fecal coliform levels sometimes exceed water quality standards during significant rain events. Additional wastewater volumes at the WWTP and subsequent heavy rain events may cause more frequent bypass events that discharge untreated sewage into Evitts Run.

**Anti-degradation Review:** The WWTP discharges into a tributary of Evitts Run, a low dissolution stream. This stream does not have assimilation capacity for elevated Chloride levels in the effluent. The increased discharges from the WWTP may place Evitts run on the impaired stream list. An anti-degradation review must be performed for Evitts Run to determine if the stream will be significantly degraded by the proposed permit modification.

**Non-compliance:** The permit application does not include information on pollutant discharge estimates or non-compliance because this is a new facility; however, the company has similar facilities that have already been constructed. We strongly encourage DEP to request compliance reports and discharge monitoring reports from their other facilities. However, this new facility has already begun to develop a history of non-compliance before construction is even completed. The company has violated the terms and conditions of their stormwater construction permit and failed to report a sinkhole opening that occurred on the construction site.

The Charles Town WWTP cannot handle the volume of discharge, is unequipped to treat chloride and will disable their own treatment processes by accepting Rockwools industrial waste. For those reasons, WVDEP must deny the permit modification. DEP cannot legally permit a modification for which the WWTP discharge will certainly to fail to meet water quality standards.

Signed,

Angie Rosser  
West Virginia Rivers Coalition