

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450

601 WEST ROSEMARY STREET, SUITE 220
CHAPEL HILL, NC 27516-2356

Facsimile 919-929-9421

April 11, 2013

Via US and Electronic Mail

Cyndi Karoly
Branch Manager, Wetlands and Stormwater Branch
N.C. Division of Water Quality
1650 Mail Service Center
Raleigh, NC 27699-1650

**Re: Martin Marietta Materials – Proposed Vanceboro Quarry Application for
401 Water Quality Certification and Application for New NPDES Discharge
Permit**

Dear Ms. Karoly:

Please accept these comments on the draft permit to discharge wastewater under the National Pollutant Discharge Elimination System (“NPDES permit”) and the application for a 401 Water Quality Certification (“water quality certification”) for Martin Marietta Materials, Inc. (“MMM”) to discharge 9.0 MGD of mine dewatering wastewater from its Vanceboro quarry to an unnamed tributary of Blounts Creek in the Tar-Pamlico River Basin. The Southern Environmental Law Center (“SELC”) submits these comments on behalf of the Pamlico-Tar River Foundation (“PTRF”). PTRF is a private, non-profit organization that has been dedicated to protecting, preserving, and promoting the Tar-Pamlico River and its watershed since 1981. SELC is a private, non-profit legal organization that seeks to protect and preserve the Southeastern environment. These comments supplement separate comments submitted by PTRF on March 14, 2013 (“March 14 comments”).

Based on a review of studies submitted by MMM to the North Carolina Division of Water Quality (“DWQ”), the proposed discharge would violate state water quality standards. In addition, MMM has failed to provide sufficient information to allow for proper review of the water quality certification application. For these reasons, DWQ would be acting arbitrarily and capriciously if it were to issue a final permit or a water quality certification for the proposed discharge.

I. The proposed discharge would violate state water quality standards.

The proposed discharge from MMM’s quarry would violate state water quality standards for two reasons.

First, the proposed discharge would violate state water quality standards because it would degrade an existing use of Blounts Creek by precluding maintenance of the creek's "biological integrity." North Carolina's antidegradation rule states that a project "shall not be permitted unless the existing uses are protected." 15A N.C. Admin. Code 02B .0201(b); 40 C.F.R. § 131.12(a)(1). In addition, DWQ may only issue a water quality certification when it "determines water quality standards are met, including protection of existing uses." 15A N.C. Admin. Code 02H .0506(a). As a Class C water, Blounts Creek is subject to a "best usage of waters" narrative water quality standard, which provides that these waters "shall be suitable for aquatic life propagation and maintenance of biological integrity, wildlife, secondary recreation, and agriculture." 15A N.C. Admin. Code 02B .0211(2). Biological integrity is "the ability of an aquatic ecosystem to support and maintain a balanced and *indigenous* community of organisms having species composition, diversity, population densities and functional organization similar to that of reference conditions." 15A N.C. Admin. Code 02B .0202(11) (emphasis added). Under the "best usage of waters" standard, "[s]ources of water pollution which [sic] preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard." 15A N.C. Admin. Code 02B .0211(2). Therefore, a discharge that precludes the maintenance of biological integrity is in violation of state law. As discussed below, the proposed discharge will preclude the maintenance of biological integrity by causing a change in the species composition of Blounts Creek on both a short-term and a long-term basis.

As described in PTRF's March 14 comments, Blounts Creek is a coastal, blackwater stream, a type of system that is naturally more acidic and more brackish (saline) than other freshwater stream systems. The upper portion of Blounts Creek is secondarily classified as a swamp water. Swamp waters ("Sw") are "waters which [sic] have low velocities and other natural characteristics which [sic] are different from adjacent streams." 15A N.C. Admin. Code 02B .0101(e)(2). The natural characteristics of a swamp water – low flow, low concentrations of dissolved oxygen, high concentrations of tannins, and low pH – are what create Blounts Creek's particular habitat. These defining characteristics must be protected to maintain biological integrity.

Blounts Creek is an aquatic nursery area for numerous species.¹ In particular, the creek is used for spawning migrations and nursery areas by anadromous fish species, such as striped bass, and the creek is a designated Anadromous Fish Spawning Area.² Blounts Creek also supports several anadromous fishes of interest to the National Marine Fisheries Service ("NMFS"),³ as well as the facultatively catadromous American eel, a Federal species of concern.⁴

¹ Letter from Kevin Hart (North Carolina Division of Marine Fisheries) to Ian McMillan (North Carolina Division of Water Quality), January 3, 2012, at 1.

² Letter from David R. Cox (North Carolina Wildlife Resources Commission) to William Wescott (US Army Corps of Engineers) and Ian McMillan (DWQ), January 18, 2012, at 2.

³ See Letter from Heather Deck (Pamlico-Tar River Foundation) to Tom Belnick (DWQ), March 14, 2013, at 3.

⁴ USFWS Endangered Species, Threatened Species, Federal Species of Concern, and Candidate Species, Beaufort County, North Carolina, available at <http://www.fws.gov/raleigh/species/cntylist/beaufort.html> (last visited April 9, 2013).

It is undisputed that the proposed discharge would change the water chemistry of Blounts Creek.⁵ In fact, MMM's own consultants have projected that the discharge could change the creek's water chemistry to the extent that the supplementary state classification of upper Blounts Creek as a swamp water would no longer apply.⁶ If Blounts Creek were to lose the characteristics of a swamp water, its biological integrity would be lost as well. The N.C. Wildlife Resources Commission ("NCWRC") has predicted that just such a scenario could occur if the discharge is approved. In general, changes in flow, salinity, pH, and metal concentrations caused by the proposed discharge, and the "potential conversion of riparian wetlands from brackish to more fresh," could "lead to a change in habitat" and "discourage several species from using the creek."⁷ The NCWRC has also stated that the introduction of fresh water from the proposed discharge "would likely move the fresh-salt barrier downstream, inhibiting access of [anadromous fish species] to the hard bottom wetlands and headwater habitats they require to spawn."⁸ This could have an especially detrimental effect on the blueback herring, an imperiled species that historically uses habitats like Blounts Creek.⁹ The North Carolina Division of Marine Fisheries ("NCDMF") has stated that changes in salinity could reduce the presence of speckled trout.¹⁰ Fluctuations in metals or pH could lead to more algal blooms and fish kills.¹¹ Potential changes in creek turbidity and nutrient composition could potentially affect fish species by changing the extent or composition of Blounts Creek's submerged aquatic vegetation ("SAV") beds.¹²

In its October 30, 2012, technical memorandum for MMM, CZR Incorporated ("CZR"), concludes that the change in water chemistry caused by the discharge could alter the creek's species composition. For example, CZR states that the expected increase in pH "may provide more suitable habitat (water column) for a more diverse realm of freshwater fish species [and] may create more suitable habitat for ... all diadromous fish species."¹³ They suggest that changes in pH could have also have an unknown, unquantified effect on aquatic plant species.¹⁴ Regarding salinity, CZR concludes that "[t]he addition of a constant input source of freshwater from the upstream quarry dewatering outfall will likely move the salt wedge further downstream in Blounts Creek," but states that this is not a major concern because fish species "are mobile" and can move downstream.¹⁵ Finally, regarding flow, CZR states that "[i]f both stream flow and velocity increase ... then a potential compositional change may occur to the benthic invertebrates inhabiting Blounts Creek [including a] change [in] the amounts and proportions of benthic shredders and collector-gatherers."¹⁶ In sum, the proposed discharge would disrupt existing fish,

⁵ Technical Memorandum. Stability, Flood, and Water Quality Analyses, Vanceboro Site, Martin Marietta Materials, Craven and Beaufort Counties, North Carolina. Kimley-Horn and Associates, Inc. September 6, 2012 (4, 9, 12)

⁶ Technical Memorandum to address potential direct and indirect effects on identified fish populations from predicted changes in Blounts Creek water quality. CZR Incorporated. October 30, 2012 (10).

⁷ Cox letter, at 2.

⁸ Id.

⁹ Id.

¹⁰ Hart letter, at 1.

¹¹ Cox letter, at 3.

¹² See Deck letter, at 9.

¹³ CZR technical memorandum, at 5.

¹⁴ Id., at 8-9.

¹⁵ Id., at 7.

¹⁶ Id., at 14.

vegetation, and benthic communities, the very aspects of the aquatic environment protected by the standard for biological integrity.

The impacts to Blounts Creek may be even greater than suspected. As detailed in PTRF's March 14 comments, CZR's memorandum is flawed in several ways that could result in an underestimation of species impacts.¹⁷ It does, however, provide enough information to conclude that the proposed discharge would lead to an alteration in the natural species composition and distribution in Blounts Creek. Indeed, the memo does not dispute the loss of existing biological integrity, but attempts to minimize this loss by promising habitat for new species. The memo also raises questions of how an influx of freshwater species would affect species composition through increased competition for resources and for spawning and nursery habitat.

North Carolina water quality standards require maintenance of the existing, natural "species composition, diversity, population densities and functional organization," or the biological integrity of Blounts Creek. The currently available evidence demonstrates, however, that the proposed discharge would affect the biological integrity of Blounts Creek and degrade an existing use.

Second, the proposed discharge would violate state water quality standards because it would violate the pH standard for Class C waters. The standard provides that "pH ... shall be normal for the waters in the area, which generally shall range between 6.0 and 9.0 except that swamp waters may have a pH as low as 4.3 if it is a result of natural conditions." 15A N.C. Admin. Code 02B .0211(g). The proposed discharge would raise the current pH in Blounts Creek from a range of 4.0-5.5 to a predicted 6.3-6.9. The pH standard prohibits this large increase because the pH of the waters downstream of the discharge sites would no longer be "normal" for the acidic, blackwater creek, or "normal" as compared to the pH conditions upstream of the discharge. The pH standard is consistent with the protection of existing uses in a system like Blounts Creek. Maintaining existing pH and the factors that contribute to it are essential to maintaining biological integrity. DWQ cannot permit a discharge that will so dramatically change the normal pH levels of Blounts Creek.

For these reasons, the proposed discharge would violate state law and DWQ must not issue a final NPDES permit or a 401 water quality certification. The degradation of an existing use and the violation of the pH water quality standard are sufficient bases for denying the permit and certification. However, MMM has also failed to provide adequate information to support the proper review and issuance of a water quality certification.

¹⁷ Deck letter, at 6-7. In addition to the problems mentioned in the March 14 comments, CZR's assessment is flawed because it minimizes the discharge's effect by stating that changes in flow and salinity will be within the range of natural variability. See, e.g., CZR technical memorandum, at 7. Unlike natural events that cause fluctuations in background conditions, such as coastal storms, the discharge would *permanently* increase flow and *permanently* move the salt wedge downstream. Permanent changes may have very different effects than natural, sporadic fluctuations.

II. MMM has not shown a lack of practical alternatives to the proposed discharge.

The Division of Water Quality may only issue a water quality certification upon determining that the proposed activity “has no practical alternative.” 15A N.C. Admin. Code 02H .0506(b)(1). A lack of practical alternatives “may be shown by demonstrating that, considering the potential for a reduction in size, configuration or density of the proposed activity and all alternative designs the basic project purpose cannot be practically accomplished in a manner which [sic] would avoid or result in less adverse impact to surface waters or wetlands.” 15A N.C. Admin. Code 02H .0506(f). This showing is distinct from a NPDES permit applicant’s duty to submit an engineering report assessing alternatives to a proposed discharge and demonstrating that “the most environmentally sound alternative was selected from the reasonably cost effective options.” See 15A N.C. Admin. Code 02B .0201(f); 15A N.C. Admin. Code 02H .0105(c)(2).

MMM has submitted an engineering alternatives analysis that assesses five technologically-feasible options for disposing of the mine dewatering waste, and identifies the proposed discharge into Blounts Creek as the lowest cost alternative.¹⁸ This analysis shows that there are at least four alternatives to the proposed discharge that are technologically feasible and would allow for the project’s basic purpose to be practically accomplished. In light of these multiple options, MMM must more fully assess the possibility of connecting to an existing water supply system, re-injecting the groundwater, or using some combination of these two alternatives. MMM also must assess the economic practicality of each alternative in light of the impact of the discharge and the benefits of environmental protection. Finally, MMM must consider how changes in design and operation of the mining operation would affect discharge volumes and change the calculations for each alternative or combination of alternatives. Until MMM conducts additional analysis, they have not demonstrated that there is a lack of practical alternatives to the proposed discharge and DWQ cannot issue a water quality certification.

III. MMM has not provided adequate information for DWQ to properly assess the proposed discharge’s impacts.

Under the state water quality certification regulations, DWQ may only issue a certification after it has determined that the proposed activity “will minimize adverse impacts [to the waters] ... does not result in the degradation [of the waters and] does not result in cumulative impacts ... that cause or will cause a violation of downstream water quality standards.” 15A N.C. Admin. Code 02H .0506(b). PTRF’s March 14 comments note several areas where a determination of cumulative impacts cannot be made because the information provided by MMM is lacking. We emphasize that MMM must calculate impacts based on the fact that the increased flow will be permanent, and not consistent with natural fluctuations. In addition, MMM must also provide more information in the following areas:

- Aquatic vegetation and benthic organisms: MMM must more fully analyze the effect of the discharge on aquatic vegetation, including the submerged aquatic

¹⁸ Engineering Alternatives Analysis, Vanceboro Quarry, Martin Marietta Materials, Beaufort and Craven Counties. Groundwater Management Associates, Inc. September 14, 2012.

vegetation (“SAV”) beds, as well as on benthic organisms in the upper portion of Blounts Creek, which cannot migrate if the salt wedge moves permanently downstream;

- Increased habitat for freshwater species: MMM must more fully analyze the impact on resident species from increased use of the Blounts Creek habitat by freshwater species. As mentioned in the March 14 comments, MMM’s biological sampling data is inadequate for determining the creek’s current species composition;
- Temperature: Currently, there is no analysis of the temperature differences between the discharge water and Blounts Creek. MMM must analyze the effect of the discharge on the creek’s water temperature;
- Metals: MMM must more fully analyze the effect of metals in the proposed discharge on the species in Blounts Creek. MMM must consider the specific characteristics of the brackish creek system and its native species, rather than relying on studies based on distinct stream systems. MMM must also consider the effect of spills at the quarry site on the discharge;
- Increased flow: MMM must more fully analyze the effect of the discharge on sedimentation and turbidity, and the effect of increased flow on spawning habitat. MMM must also analyze the effect of increased flow on wetlands and should calculate flooding and erosion risks considering the effect of wind on the movement of water. Finally, MMM must ensure that all calculations take into account the potential built-out flow of 12 MGD;¹⁹
- Large storm events: MMM must analyze the effect of abnormal storm events when combined with increased flow on the salinity, habitat composition, and stability of Blounts Creek, especially considering the low turnover rate of water in the creek. MMM must also consider the effect of large rainfall events at the quarry site; and
- Pamlico River and Pamlico Sound: MMM must analyze the impact of introducing a new, permanent source of fresh water into the Pamlico River and Pamlico Sound, especially when combined with existing large discharges of fresh water downriver of Blounts Creek.

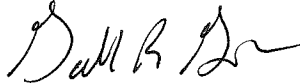
IV. Conclusion

For the above reasons, DWQ must not issue a final NPDES permit or a water quality certification for the proposed discharge to Blounts Creek at this time. Based on the preliminary analysis, any large, permanent discharge of fresh water into upper Blounts Creek would violate state water quality standards. However, we believe that the permitting process will benefit from a further investigation of impacts and alternatives.

¹⁹ Engineering Alternatives Analysis, at 2-3.

We appreciate the opportunity to submit these comments. Please contact me at (919) 967-1450 if you have any questions.

Sincerely,



Geoffrey R. Gisler

CC: (via email)
Heather Deck, Pamlico-Tar River Foundation