



North Carolina Department of Environment and Natural Resources

Division of Water Quality

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MEMORANDUM

August 13, 2010

To: Coleen Sullins, Director
Division of Water Quality

Through: Ted Bush Jr.
Chief, Aquifer protection Section

From: Jon Risgaard
Aquifer Protection Section

Subject: Permitting of wastewater generated at composting facilities:

The purpose of this memo is to provide an update on progress of the Compost Operation Stakeholder Advisory Group (as formed under Session Law 2009-322), and provide information on a request made by the Advisory Group for which further discussion is needed.

The Advisory Group has expressed concerns with rule interpretations and resulting requirements within the 2T rules, and has suggested alternatives for facilitating the permitting of compost process wastewater within the non-discharge permitting program. The Advisory Group has requested that DWQ investigate these alternatives and provide comments back to the Advisory Group. This memo provides an explanation of the Advisory Group's permitting concerns, suggested alternatives from the Advisory Group, the regulatory interpretation affecting each alternative, and comments and recommendation from the Aquifer Protection Section (APS) on each alternative.

Summary of Concern:

Under existing rule interpretation, the process wastewater generated from active compost piles meets the definition of an industrial wastewater and therefore must meet the requirements specified in 15A NCAC 02T for the desired non-discharge disposal method. The 02T rules would allow for the wastewater to be disposed of through a wastewater irrigation system, high-rate infiltration system, or reclaimed water system. For the sake of simplicity only wastewater irrigation system requirements are discussed here (note that the same concerns apply to all the non-discharge wastewater systems and wastewater irrigation systems are generally viewed as the most likely method of managing process wastewater generated from a for a compost facility).

The 02T rules require that all proposed systems disposing of industrial wastewater must complete a hydrogeologic investigation to demonstrate that non-compliant groundwater mounding will not occur and to provide necessary information to demonstrate that groundwater will be protected (industrial discharges do not have specified limits similar to municipal or commercial wastewaters, but instead must demonstrate groundwater protection). It is the view of the compost industry that the cost of performing a hydrogeologic investigation meeting the requirements specified in 02T is burdensome for compost facilities (starting cost ~ \$30,000), and due to the intermittent need to discharge wastewater and the beneficial characteristics of the wastewater, the investigation does not provide a significant increase in environmental protection. In addition, the compost industry questions the necessity to

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perform the evaluation when the wastewater has characteristics similar to that of biological residuals which are allowed to be land applied for beneficial reuse without the need for the evaluation. Therefore, the following alternatives were suggested to address these concerns.

Advisory Group Alternative 1 – Exemption from hydrogeologic investigation requirement

The workgroup suggested that the rule requirement for a hydrogeologic investigation for sites receiving compost process wastewater be waived or reduced due to the beneficial characteristics of the wastewater and the financial hardship of performing the investigation. In addition it was pointed out that animal waste operations are allowed to land apply waste onto their own property without being required to perform a hydrogeologic evaluation.

Regulatory Interpretation – Alternative 1:

By definition provided in 15A NAC 02T a process wastewater from compost operations is an industrial wastewater and therefore the compost facilities are required to perform a hydrogeologic evaluation as part of the permitting process. Rule citations and explanations are provided below:

- 02T .0504(e) requires a hydrogeologic evaluation meeting specific criteria for all systems treating industrial waste and any system with a design flow over 25,000 gpd.
- 02T .0103(20) defines industrial wastewater to include any of the followings: 1) wastewater resulting from any process of industry or manufacture, or from the development of any natural resource, 2) wastewater resulting from process of trade or business, or 3) stormwater that is contaminated with an industrial wastewater.

APS Comments and Recommendations – Alternative 1:

It is the APS's view that waiving or reducing the hydrogeologic evaluation requirement for all compost facilities would require a rule change. The Division may consider establishing a policy requiring groundwater monitoring in place of a hydrogeologic investigation while a rule change occurs; however, it is unclear from available wastewater characteristic data that it would be advisable to waive the hydrogeologic evaluation for all compost facilities. It may be appropriate to do so once a sufficient number of facilities have performed a hydrogeologic investigation to show that groundwater condition can be predicted without obtaining the information from the hydrogeologic evaluation.

It is APS's recommendation that the DWQ does not pursue policy or rule changes to exempt all compost facilities from performing a hydrogeologic investigation until more supporting data is available.

Instead of waiving the requirements it may be feasible through policy to deem process water generated from compost facilities not an industrial wastewater based on its characteristics, and therefore a hydrogeologic evaluation would only be required, by rule, if the design flows exceed 25,000 gpd. If the process wastewater is not characterized as a industrial wastewater, the wastewater must then be treated to meet specified minimum degree of treatment that includes maximum monthly average concentration limits for BOD (30 mg/l), total suspended solids (30 mg/l), ammonia (14 mg/l) and fecal coliform (200 colonies/100ml). This level of treatment is consistent with the benchmarks level of treatment being proposed within a general permit compost facilities with surface water discharges.

It is recommended that the Division considers a policy stating that process wastewater from a compost facility is not considered an industrial wastewater for non-discharge permitting, and therefore only facilities generating more than 25,000 gpd of process wastewater will be required to perform a hydrogeologic evaluation.

Advisory Group Alternative 2 – Permitting the process wastewater as residuals

The workgroup has suggested that DWQ consider permitting the process wastewater as residuals to better allow for the beneficial reuse of the wastewater. The workgroup noted the similar characteristics of municipal biosolids and compost wastewater and the relative ease in demonstrating that quality requirements for the application of biosolids could be met.

Regulatory Interpretation – Alternative 2

By definitions provided in 15A NCAC 02T process wastewater from compost operations is an industrial wastewater and not a residual; therefore, regulations for the treatment and disposal of wastewater must be met. Rule citations and explanations are provided below:

- 02T .0103(20) defines industrial wastewater to include any of the following 1) wastewater resulting any process of industry or manufacturing, or from the development of any natural resource, 2) wastewater resulting from process of trade or business, or 3) stormwater that is contaminated with an industrial wastewater.
- 02T .0103(30) defines residuals as solid, semi-solid, or liquid waste generated from a wastewater treatment facility, water supply treatment facility, or air pollution control facility.

APS Comments and Recommendations – Alternative 2

Additional flexibility in the rules to adjust permitting requirement to better match the needs for different types of wastes would be beneficial to the program. Allowing for the reclassification of some wastewaters as residuals would allow for land application of wastes to better recognize their potential for beneficial reuse, while still providing protection to the environment and human health. This allowance would only be appropriate for wastes known to have characteristics similar to properly treated residuals, that can be used in a beneficial manner, and that can meet the quality and operational requirements for land application of residuals (either Class A or B). In addition to compost facilities, brewery and winery wastes would potentially benefit from this determination.

Determination that the wastewater should be considered a residual requires that the water meet the definition of residuals. This Determination may require a rule change, but if not a DWQ or APS policy would be needed to clarify this determination. APS recommends that this alternative be further pursued.

Advisory Group Alternative 3 – Use of Alternative Design Criteria to Adjust Permitting Requirements.

The workgroup has suggested that DWQ consider using alternative Design Criteria provisions under 02T .0105(n) to approve alternative application and permitting requirements that meet the provision of the rule.

Regulatory Interpretation – Alternative 3

Interpretation of the rule has historically limited this provision only to rule section titled “Design Criteria” (e.g. 02T .0505 Design Criteria) and would not apply to requirements found in other sections (i.e. hydrogeologic evaluation requirement in 02T .0504 Application Submittal are not subject to alternative design). In addition, if this provision was allowed, there would be difficulty in demonstrating that the three (3) provisions in approving the alternative design can be met. The rule citation is provided below:

- 02T .0105(n) states that the Director shall approve alternative Design Criteria in cases where the applicant can demonstrate that the alternative design criteria will provide the following:
 - (1) equal or better treatment of the waste;
 - (2) equal or better protection of the waters of the state; and

(3) no increased potential for nuisance conditions from noise, odor or vermin.

APS Comments and Recommendations – Alternative 3:

It is likely that this alternative will not address the concerns raised by the compost industry since it seems unlikely that they will be able to demonstrate that the provision of the alternate design criteria can be met. It is recommended that this alternative be further pursued, however not necessarily as part of the response requested by the compost industry.

APS recommendations:

Completion of a hydrogeologic evaluation is a requirement for any facility seeking to land apply industrial wastewaters. While this requirement may appear to be burdensome for some wastes from industrial processes, the APS has consistently required this of all industrial permittees. Any changes to this requirement as a result of the request from the Compost Advisory Group should be made available to any other industry generating waste with similar characteristics.

Of the three proposed alternatives APS would preferentially support Alternative #2 (permitting process water as a residual) as the options that best combines an appropriate level of regulatory oversight, environmental protection, and permit requirements. APS believes this alternative would be acceptable to both the APS and the compost industry, and would provide a permitting alternative for other similar wastes currently required to be managed as industrial wastewater. It is not clear that the DWQ has the authority to make a determination that this wastewater should be permitted as a residual without first changing the existing administrative code. APS is seeking further discussion on the issue and alternatives raised by the Compost Advisory Group.