



North Carolina Department of Environment and Natural Resources

Division of Water Quality

Coleen H. Sullins

Director

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AQUIFER PROTECTION SECTION

Dee Freeman

Secretary

MAR 23 2009

**AQUIFER PROTECTION**

March 17, 2009

Beverly Eaves Perdue  
Governor

John Toepfer, P.E.  
Senior Environmental Technical Specialist  
Environmental Services  
Progress Energy Carolinas, Inc.  
410 S. Wilmington Street, PEB 4A  
Raleigh, NC 27601

Subject: Progress Energy Request for Exemption to  
Permit Condition II 9.a. – Setback from stream for ash  
used as structural fill  
Progress Energy Ash Distribution Program  
Permit No. WQ0000020  
Buncombe County

Dear Mr. Toepfer:

On December 29, 2008, the Division of Water Quality's, Asheville Office received Progress Energy's written request for an exemption to Condition II (9)(a) of permit WQ0000020 that requires a 50 foot setback from any surface water without prior approval from the Aquifer Protection Section when using ash for structural fill. Specifically, your request is to use ash as structural fill over a culverted stream.

Based upon a review of your request along with supporting information, the Aquifer Protection Section is hereby denying your request to reduce and effectively remove the stream setback requirement as specified in the subject permit as well as Asheville Airport's 401 certification (DWQ #20071841). Issues that were considered in this decision include but were not limited to the following:

1. The subject permit allows ash to be used as structural fill beneath structures and paved surfaces where the concentration of metals in that ash may exceed the ceiling concentrations and monthly average concentrations as listed in the table of Condition 5. Based on your 2007 annual report, 14,025 tons of ash was distributed in December of 2007 in which the arsenic concentrations of all three samples exceeded the ceiling and monthly average concentration. Based on the 2008 annual report, five out of the 12 ash samples exceeded the ceiling concentration. Please indicate on a site plan where ash exceeding these limits was used if used at the Asheville Airport project. This will allow verification that this ash was used in a manner consistent with the permit conditions. Additionally, the Division believes the stream setback requirements specified in the permit are protective of surface water standards where ash with higher metal concentrations (i.e., above the ceiling concentration or monthly average concentration) are allowed to be used as structural fill such as with this project;
2. Approximately 300 ft. downgradient of the northern extent of the planned ash fill is a residential community. The culverted stream, in which you are requesting reduced setbacks to, flows through this community and residents appear to have easy access to the stream. Numerous homes in this community are on water supply wells, some of which may be bored wells extracting groundwater from the more-vulnerable, shallow water table. The Division is concerned with the presence of numerous downgradient (down-slope) receptors and therein, a higher potential exposure risk. The information you have provided with your request does not address this major concern;

AQUIFER PROTECTION SECTION – Asheville Regional Office (ARO)  
2090 U.S. 70 Highway, Swannanoa, NC 28778-8211  
Phone: 828-296-4500 \ FAX : 828-299-7043  
Customer Service: 1-877-623-6748  
Internet: [www.ncwaterquality.org](http://www.ncwaterquality.org)

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3. Should the engineered controls such as the geosynthetic liner, impervious surfaces, culvert, etc. be compromised and leaching occur, there appears to be few if any viable remedial or corrective measures to address a problem. Given the volume of ash fill proposed, removal would not be an option. With limited corrective measure options available and no contingency proposed, we can not support a setback exemption;
4. Condition II.5 of your permit allows use of ash exceeding these ceiling and monthly average concentrations as structural fill only if overlain by impervious surfaces (e.g., building footprint, paved area, etc.) and used at individually permitted use sites. According to permit Condition IV.(1)(a), the Asheville Airport structural fill site is considered individually-permitted by the Division. Permit Condition II.5.a. exemption is allowed at individually permitted sites as stipulated in Condition IV.1. which requires the establishment of a compliance and review boundary around ash use site located outside the property boundary of the source-generating facility. Please establish a compliance and review boundary in accordance with 15A NCAC 2L .0107(f) for the Asheville Airport site including proposing location of monitoring wells, surface water sampling, etc. This monitoring is also being required by the Division through permit Condition IV.(2)(a). Please provide documentation addressing this issue within 90 days; and,
5. While the Asheville Airport's 401 certification references the "non-discharge requirements", Condition 12 of that permit offers further clarification and restrictions by stating that "no waste ash fill over waters".

If Progress Energy believes the concerns outlined above can be addressed, you may resubmit your request with additional supporting documentation to include, but not limited to, information to address these topics:

1. Progress Energy is to provide additional information on how the estimated 6% of ash fill that will not be overlain by building footprint or paved surface on this project will be addressed if that ash exceeds the concentrations listed in the table within Condition 5.;
2. In order to evaluate any setback reduction request, you would need to: (1) Demonstrate that use of ash as structural fill for this project within 50 ft. of the stream will provide equal or better protection of the waters of the State; (2) Identify potential receptors including water supply wells within 1000 ft. downgradient of the fill area; and, (3) Identify any remedial or corrective measures or strategy that would be available if ash constituents are detected in surface or groundwater at the site. Your demonstration should include a risk assessment or analysis for all potential exposure pathways and predict potential environmental impact should engineered controls fail;
3. The Division is requesting that you evaluate the cost-effectiveness of:(1) overlaying the ash fill with a  $1 \times 10^{-6}$  cm/sec geosynthetic clay liner to further reduce potential infiltration and subsequent leaching of ash constituents, and (2) using a composite liner such as a 60 mil HDPE membrane with either an underlying geosynthetic clay liner with a maximum hydraulic conductivity of  $5 \times 10^{-9}$  cm/sec, or a 3-foot compacted clay liner with a maximum hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec.;
4. From the available drawings, it is not clear the extent to which the underlain liner will 'wrap' on the sides of the fill area as well as at the upgradient portion, nearest the junction box;
5. Please specify the life expectancy of the culvert material and include any contingency plan for repairing the culvert should it be necessary in the future;
6. Verification that the Asheville Airport Authority has submitted an application for modification of the existing 401 permit, specifically, Condition 12 to allow ash to be used as fill over a culverted stream; and,
7. The subject permit allows you, the permit holder, to request an exemption to the 50 ft. stream setback. Conditions that would likely be included with any permission to encroach on the 50 ft. setback would include groundwater (monitoring well and possibly water supply well) and stream monitoring at a minimum. Any long-term monitoring to verify the performance of the engineered controls to protect surface and groundwater would be the responsibility of Progress Energy and therein, any required corrective measures pursuant to 15A NCAC 2L .0106(d). One alternative arrangement would be for Asheville Airport to apply for a permit pursuant to T15A NCAC 02T .1204 and seek setback reductions through a variance. Please provide documentation as to any access



agreements, deed restrictions etc. between Progress Energy and the Asheville Airport in regard to this structural fill project.

If you feel that the above-referenced items can be sufficiently addressed, please forward the supporting documentation to APS ARO for additional review and reconsideration of your request. If you should have any questions, please do not hesitate to contact me directly at 828.296.4680.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. Landon Davidson', written over a horizontal line.

G. Landon Davidson, LG  
Regional Supervisor Aquifer Protection Section

CC: SWP ARO – Roger Edwards  
Cyndi Karoli / John Dorny – 401 certification DWQ  
Jon Risgaard - APS ND CO  
Director – Asheville Airport