

Manufacturers & Chemical Industry Council of North Carolina

March 7, 2003

Ms. Marion Deerhake
2108 St. Mary's Street
Raleigh, NC 27608

Subject: Proposal to Amend Hydrogen Sulfide AAL

Dear Ms. Deerhake:

At the February 2003 Air Quality Committee meeting, you had the opportunity to hear several presentations concerning a proposal to revise the Acceptable Ambient Level (AAL) for hydrogen sulfide. As you will recall, the existing AAL is 2100 ug/m³, and the Science Advisory Board (SAB) has offered three options for revising the AAL, two of which are a 1-hour AAL and two of which are 24-hour AAL's. The three options are: 56 ug/m³ (1-hr), 33 ug/m³ (24-hr), and 120 ug/m³ (24-hr).

During my presentation to the Committee on behalf of the four members of the Manufacturers and Chemical Industry Council of North Carolina (MCIC) who are directly and significantly impacted by the proposal, I referenced comments that MCIC had received from several sources that we consulted during our evaluation of the SAB's conclusions as well as the overall impact of the EMC's adoption of any one of the SAB's options. Attached are copies of two documents. The first, titled "NCASI Comments on the North Carolina Scientific Advisory Board on Toxic Air Pollutants Toxicity Assessment for Hydrogen Sulfide", was prepared by Dr. Vickie Tatum of NCASI (This document also includes a list of the 11 studies that I referenced during my presentation). Dr. Tatum is a toxicologist by education and training, is an expert in hydrogen sulfide toxicology, and has studied hydrogen sulfide toxicology for more than a decade.

The second document, a memorandum addressed to my from Bruce A. Dalton, MD, FACOEM, contains the comments and observations that Dr. Dalton offered with respect to his review of both the SAB's recommendations and a memorandum from Dr. Luanne Williams concerning the health impacts costs associated with hydrogen sulfide exposure. Dr. Dalton is the Contract Medical Director for Weyerhaeuser Corporation and regularly consults with Weyerhaeuser and other companies on medical issues associated with occupational and environmental exposure to various contaminants.

During the February meeting, several questions were asked concerning the reductions in hydrogen sulfide that would be realized under each of the AAL options offered by the SAB, as well as the cost attendant to each option. Emission reductions that would be necessary to comply with the 1-hour AAL of 56 ug/m³, as well as the costs to achieve those reductions are currently known. Each of the companies worked for several months

to develop those cost estimates. However, it is not possible at this juncture, without further detailed analysis of site emissions at each plant site, to determine a reasonably reliable estimate of cost for the other two AAL options.

What we do know at this point is that both the emission reductions achieved and the expenditures necessary to achieve those reductions will be dramatically different for the pulp and paper sites, depending upon whether or not the wastewater collection and treatment systems at those sites are exempted from the air toxics rule. This is true because the emissions from the wastewater treatment plants at pulp and paper facilities constitute such a high percentage of total site hydrogen sulfide emissions. In fact, the hydrogen sulfide emissions from the pulp mill wastewater treatment systems constitute such a large percentage of the overall plant site emissions that if those wastewater treatment plant emissions are exempted, the paper mills may be able to comply with the hydrogen sulfide AAL without any significant expenditure of capital. If wastewater treatment plant emissions for the pulp and paper companies are not excluded, the costs to comply with either of the AAL options (1-hour or 24-hour) is the same, and the technology improvements necessary to comply would consist of abandoning the existing wastewater lagoons at four of the five mill sites and construction of either activated sludge or high purity oxygen (UNOX type) wastewater treatment systems (the exception is one mill where activated sludge technology is already employed – that mill would have to cover all of the activated sludge system, collect the gases, and incinerate the gases elsewhere in the mill). From an operation and maintenance standpoint the costs, though currently not quantified, will be increased as the period over which compliance is measured is diminished (more operational flexibility with 24-hour AAL than with 1-hour AAL).

The same is not true for the phosphate mill. Plant point source emissions, rather than wastewater treatment plant emissions, make up the large percentage of the phosphate mill emissions. Emission reductions necessary to comply with the three AAL options are: 3.47 million pounds – 56 ug/m³; 3.36 million pounds – 33 ug/m³; and 3.29 million pounds – 120 ug/m³. The cost to comply with the 24-hour AAL of 33 ug/m³ is 13% less than the cost to comply with the 1-hour AAL of 56 ug/m³. The cost to comply with the 24-hour AAL of 120 ug/m³ is 53% less than the cost to comply with the 1-hour AAL of 56 ug/m³ and 46% less than the cost to comply with the 24-hour AAL of 33 ug/m³.

There has been considerable discussion about hydrogen sulfide emissions from hog farms. We believe that there is no significant difference between hydrogen sulfide emissions from hog farms in North Carolina and hog farms in the midwest. However, Division of Air Quality staff commented at the February meeting that there were major differences due to both pH and purple sulfur bacteria concentrations. If you so desire, we can provide additional information to support our position that there is no clear distinction between hog lagoon emissions of hydrogen sulfide in the midwest and in North Carolina. We continue to believe that hydrogen sulfide emissions generated by animal waste handling facilities constitute approximately 85% of the total hydrogen sulfide emissions in North Carolina.

I recognize that the task before you is daunting. However, in light of the dozen or so additional amendments to air toxic AAL's that the EMC will take up following the action on hydrogen sulfide, and the precedent(s) that may be established by your actions on hydrogen sulfide, I urge you to take your time and carefully consider not just the health issues, but all of the economic and social ramifications of your decision as well. As I said at the February meeting, the easiest course for the EMC to take is to simply defer to the highly respected members of the SAB to make the decision on the AAL. However, to do so would be a tremendous disservice to the people of our state, and would be contrary to the EMC's role as the state's "risk manager". In that role, as set out in Article 21, Chapter 143-211 of the North Carolina General Statutes, you have the difficult task of setting standards that are "designed to protect human health, to prevent injury to plant and animal life, to prevent damage to public and private property, to insure the continued enjoyment of the natural attractions of the State, *to encourage the expansion of employment opportunities, to provide a permanent foundation for healthy industrial development* and to secure for the people of North Carolina, now and in the future, the beneficial uses of these great natural resources." (emphasis added)

MCIC and its member companies stand ready to assist you in any way possible. Please do not hesitate to call me (919-834-9459, ext 31) if you have questions or if I can be of further assistance.

Sincerely,

A. Preston Howard, Jr. P.E.
President

cc: Secretary Bill Ross
Mr. Keith Overcash