

May 30, 2006

J. Wick Havens  
Chief, Division of Air Resource Management  
Bureau of Air Quality  
P. O. Box 8468  
Harrisburg, PA 17105-8468  
[jhavens@state.pa.us](mailto:jhavens@state.pa.us)

Re: Ozone Transport Region Measures under Consideration by OTC & MANEVU

Dear Mr. Havens:

The National Lime Association (NLA) appreciates the opportunity to comment on Pennsylvania's use of the Ozone Transport Commission's (OTC's) characterization of NOx control technologies for lime kilns [36 Pa.B. 2071, April 28, 2006]. We are writing to ensure that PADEP is aware of the most current version of OTC's summary of NOx control technologies for lime kilns dated May 3, 2006 (attached) when finalizing control measures for the lime industry.

On April 28, PADEP requested comments on control measures under consideration for model rule development. The notice referenced control technologies summaries developed by OTC at the following website: [http://www.otcair.org/projects\\_details.asp?FID=93&fview=stationary](http://www.otcair.org/projects_details.asp?FID=93&fview=stationary). Since that time, OTC has updated their control technology summary for lime kilns (see May 3 version, attached).

NLA supports OTC's decision to designate good combustion practices as the candidate control measure for lime kilns. However, OTC's summary states that such reductions in NOx emissions would be achievable for "less than \$2,000 per ton." We are not aware of the basis of OTC's cost estimate. In any case, we believe that the costs of additional NOx reductions would be much greater than \$2,000 per ton because most lime kilns in Pennsylvania are subject to RACT plans that require optimized combustion. In addition, lime plants already have tremendous economic incentives to optimize combustion in order to reduce fuel use. Accordingly, we recommend that PADEP adopt OTC's decision to specify optimized combustion for lime kilns, but that it not retain the \$2,000 per ton estimate.

If you have any questions regarding these comments, please do not hesitate to contact me at (703) 243-5488.

Sincerely,



Arline M. Seeger  
Executive Director

Attachment: OTC Control Measure Summary for Lime Kilns, May 3, 2006

**CONTROL MEASURE SUMMARY FOR  
 Lime Kilns**

<p><b>Control Measure Summary:</b> Good combustion practices and kiln operation for Lime Kilns. These kilns are used for the calcination of limestone. Lime kilns are also often associated with paper mills.</p>	<p align="center"><b>Emissions (tons/year) in Ozone Transport Region</b></p>							
<p><b>2002 existing measure: NSR; PSD; State RACT.</b>  <i>Emission Reductions:</i>  <i>Control Cost:</i>  <i>Timing of Implementation:</i>  <i>Implementation Area:</i> OTR</p>	<p align="center"><b>NO<sub>x</sub></b></p> <table border="0"> <tr> <td>Uncontrolled:</td> <td align="right">4,649</td> </tr> <tr> <td>2002 Reduction:</td> <td align="right">0</td> </tr> <tr> <td>2002 Base:</td> <td align="right">4,649</td> </tr> </table>		Uncontrolled:	4,649	2002 Reduction:	0	2002 Base:	4,649
Uncontrolled:	4,649							
2002 Reduction:	0							
2002 Base:	4,649							
<p><b>Candidate measure: Good combustion practices and kiln operation</b>  <i>Emission Reductions:</i> Under Evaluation  <i>Control Cost:</i> less than \$2,000 per ton  <i>Timing of Implementation:</i> 01/01/09  <i>Implementation Area:</i> OTR</p>	<p align="center"><b>NO<sub>x</sub></b></p> <table border="0"> <tr> <td>2009 Base including growth:</td> <td align="right">5,228</td> </tr> <tr> <td>2009 Reduction:</td> <td align="right"><u>TBD</u></td> </tr> <tr> <td>2009 Remaining:</td> <td></td> </tr> </table>		2009 Base including growth:	5,228	2009 Reduction:	<u>TBD</u>	2009 Remaining:	
2009 Base including growth:	5,228							
2009 Reduction:	<u>TBD</u>							
2009 Remaining:								
<p><b>Policy Recommendation of State/Workgroup Lead:</b> Continue to evaluate good combustion practices and kiln operation to reduce NO<sub>x</sub>. It is recommended that a program be developed that tests combustion modifications for this category of sources. Continue to track emerging technologies and transfer of techniques applicable to cement kilns to the lime industry.</p>								
<p><b>Brief Rationale for Recommended Strategy:</b> This technology is now available and can be used across the variety of vertical and rotary kilns used in stand-alone operations and in conjunction with pulp mills and chemical processing.</p>								
<p><b>REFERENCES:</b></p> <p>European Commission, Integrated Pollution Prevention and Control (IPPC) Bureau. <i>Reference Document on Best Available Techniques in the Cement and Lime Manufacturing Industries</i>. December 2001. "The direct transfer of low-NO<sub>x</sub> burner technology from cement kilns to lime kilns is not straightforward. In cement kilns, flame temperatures are higher and low-NO<sub>x</sub> burners have been developed for reducing high initial levels of 'thermal NO<sub>x</sub>'. In most lime kilns the levels of NO<sub>x</sub> are lower and the 'thermal NO<sub>x</sub>' is probably less important."</p> <p>Northeast States for Coordinated Air Use Management. <i>Assessment of Control Technology Options for BART-Eligible Sources: Steam Electric Boilers, Industrial Boilers, Cement Plants, and Paper and Pulp Facilities</i>. March 2005. "Due to the design of the lime kiln, SNCRs and SCRs are not viable NO<sub>x</sub> reduction techniques. Installing low-NO<sub>x</sub> burners is also not a practical NO<sub>x</sub> reduction technique according to a BACT analysis conducted on a new lime kiln in 1997...combustion modification such as decreasing excess air is the best way to reduce NO<sub>x</sub> emissions".</p>								

**Stakeholder Comment Summary:**

Since 1998, BACT analyses of NO<sub>x</sub> controls have been prepared for 11 new commercial lime kilns that have been thoroughly reviewed by U.S. EPA, state and local agencies, and the public. They all reached the conclusion that add-on controls for NO<sub>x</sub> for new lime kilns are not technically or economically possible. Instead, permits for these new kilns define BACT as

efficient combustion practices, minimization of fuel consumption, and excess air for the combustion process, or some similar control techniques (see EPA Clearinghouse).

OTC's control measure summary should be revised to reflect the infeasibility of SNCR and SCR controls for lime kilns. This finding is consistent with all other authorities that have evaluated the potential application of NO<sub>x</sub> controls on lime kilns