UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
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ATLANTA, GEORGIA 30303-8960

DEC 11 2013

Mr. John Shrock
Environmental Consulting & Technology, Inc.
6440 Southpoint Parkway, Suite 1130
Jacksonville, Florida 32216

Re: Conditional Approval: Use of Tier 3 Method for NO_2 AERMOD Modeling
Jacksonville Lime, LLC, Jacksonville, Florida

Dear Mr. Shrock:

This letter contains our review comments and conditional approval of the Tier 3 alternate, non-default, detailed screening modeling technique Ozone Limiting Method (OLM) in the nitrogen dioxide (NO_2) impact assessment supporting the Jacksonville Lime Prevention of Significant Deterioration (PSD) Permit Application. The PSD permit application is for the construction and operation of a lime manufacturing facility in Jacksonville, Florida. The basis for the use the Tier 3 OLM procedure is provided in 40 CFR 51 Appendix W, Guideline on Air Quality Models (GAQM), and in subsequent U.S. Environmental Protection Agency clarification memoranda, *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard* (March 1, 2011) and *Applicability of Appendix W Guidance for the 1-hour NO_2 National Ambient Air Quality Standard* (June 28, 2010). Based on the guidance documents, our review of the provided dispersion modeling protocols and supplemental information/documents, and discussions with the Florida Department of Environment Protection (FDEP), we believe the application of the Tier 3 OLM procedure with the enclosed conditions is appropriate for this project. Therefore, the EPA is providing conditional approval, as provided in this letter, for the use of the Tier 3 OLM modeling technique for the required NO_2 National Ambient Air Quality Standards (NAAQS) compliance impact assessment supporting the PSD permit application for this Jacksonville Lime facility. We appreciate you working with FDEP and EPA Region 4 in resolving our concerns on the proposed Tier 3 OLM modeling procedure.

The GAQM establishes the models and modeling techniques that can be used for ambient air quality impact modeling to demonstrate compliance with federal clean air standards, such as NAAQS and PSD increments. Section 5.2.4 of the GAQM [Models for Nitrogen Dioxide (Annual Average)] discusses a multi-tiered approach with the Tier 3 being the least conservative and most robust requiring more detailed project specific information. The refined Tier 3 techniques can be considered on a case-by-case basis with approval of the reviewing authority. As defined in Section 3.0 (b) of Appendix W, the reviewing authority is the EPA Regional Office. The June 28, 2010, EPA memorandum referenced above further states that the Tier 3 procedures are non-regulatory options within the EPA-preferred AERMOD model that require justification and approval by the EPA Regional Office on a case-by-case basis.

The justification required for case-by-case approval of a Tier 3 non-regulatory AERMOD default option must follow the procedures and content provided in Appendix W Section 3.2, Use of Alternate Models - specifically Section 3.2.2, paragraph (e). Two of the required five items in this section (i.e., items i and iv) have already been fulfilled for AERMOD in past demonstrations and documentations. The provided Supplemental Air Quality Dispersion Modeling Protocol (Use of Tier 3 Method for 1-Hour NO_2 Modeling) [October 2013], initial protocol and protocol supplements, and other supporting information addressed the remaining three items; applicability of the procedure to the problem, availability of needed data bases to perform analyses, and protocol of methods and procedures to be used in application of the Tier 3 technique.

Therefore, the Tier 3 screening procedure proposed for the NO_2 NAAQS compliance impact modeling supporting a PSD permit application for the construction of the new Jacksonville Lime, LLC facility in Jacksonville, Florida is approved with the following conditions.

Ozone Data – Hourly ozone observations from the nearest monitor, Duval County Sheffield Elementary School (Site ID 031-0077), were selected as representative for this project. The ozone data record to be used was contemporaneous with meteorological data record used in the modeling (i.e., 2006 - 2011).

Since the ozone data are for the same meteorological period used in the modeling, the measured hourly ozone values will be paired with the corresponding hourly modeled concentrations. The selected ozone observations and temporal pairing with modeled observations is acceptable contingent on the use of the following procedure to replace missing ozone values:

- Linear interpolation based on previous and subsequent hours for missing data gaps of 3 or less.
- Maximum monthly ozone concentrations are used to replace all missing hourly values for gaps of 4 or more.

NO_2 Background Data – The most recent 2-year data period (2008-2011) from the nearest NO_2 monitoring station (Kooker Park - ID 031-0032) was selected as representative. Pairing of modeled and monitored concentrations based on hour-of-day was proposed using an hour-of-day background NO_2 concentration record based of the 3-year average of the 98th-percentile values for each hour. These data and application procedures are acceptable.

In- Stack NO_2/NOx Ratios – With the exception to the Jacksonville Lime kilns and the two coal-fired boilers (i.e., units JEANOR16 and JEANOR17) of the nearby Jacksonville Electric Authority Northside Generating Station (JEANGS), all stacks will use the default in-stack NO_2/NOx ratio of 0.5 (EPA Memorandum *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard* (March 1, 2011)) noted for use in the absence of more appropriate source-specific values.

The in-stack NO_2/NOx ratio of 0.14 is approved for the Jacksonville kilns based on the provided stack test data from similar lime kilns at Carmeuse Lime and Stone facilities located in Michigan (April 2013) and Virginia (December 2011). The value of 0.14 is the maximum ratio of all the test runs – a conservative upper-bound value – obtained in the December 2011 stack test at the Carmeuse Starsburg, Virginia facility .

The proposed in-stack NO_2/NOx ratio for the two coal-fired boilers at JEANGS is based on stack data from similar dry-bottom, wall-fired, pulverized coal boilers at the Palatka, Florida Seminole Generating

Station. The Seminole facility CEMS data reveals in-stack NO_2/NOx ratios less than 0.02. A conservative in-stack NO_2/NOx ratio of 0.10 is proposed for the JEANGS coal boilers. Direct measurement of the in-stack NO_2/NOx ratios for JEANGS units 16 and 17 is scheduled for November 2013. Use of 0.10 in-stack NO_2/NOx for the JEANGS coal-fired boilers is approved contingent on the November 2013 stack tests result indicating NO_2/NOx ratios equal or less than this value.

In summary, the EPA believes the proposed procedures and data bases provided in the Tier 3 modeling description, as clarified in this letter, are appropriate for application of the OLM procedure for the NO_2 air quality impact modeling provided in support of the PSD permit application for the proposed new Jacksonville Lime, LLC facility. This approval of the application of the Tier 3 OLM procedure is only for this PSD permit application and is contingent on the conditions contained herein. Use of the Tier 3 procedure on any other PSD permit applications will require approval by EPA Region 4 on a case-by-case basis.

We will continue to work with FDEP in their review of the PSD permit application containing the air quality impact modeling using the OLM procedure. Please note that our approval of the use of OLM for this PSD project does not represent any determination or disposition of this permitting action. If you have any questions please contact Stanley Krivo at 404/562-9123.

Sincerely,

Carol L. Kemker for

Jeaneanne M. Gettle
Acting Division Director
Air Pesticides and Toxic
Management Division

cc: Tom Rogers – FDEP