Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

December 27, 2016

Mr. Robert Kaplan
Acting Regional Administrator
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3950

Re: State Implementation Plan Submittal for Indiana Regarding 1-Hour SO_2 Attainment Carmeuse Lime, Inc. in Lake County, Indiana (Commissioner's Order #2016-04) Addendum Documentation of the Public Participation Process

Dear Mr. Kaplan:

Pursuant to Section 110 of the Clean Air Act (CAA) and Title 13 of the Indiana Code (IC), the Indiana Department of Environmental Management (IDEM) submits an amendment to the Indiana state implementation plan (SIP) for Carmeuse Lime, Inc. (Carmeuse) in Commissioner's Order 2016-04. IDEM submitted a request for parallel processing of the amendment to Indiana's SIP on November 18, 2016. IDEM scheduled a public hearing concerning the proposed SIP revision on December 20, 2016, and the public comment period concluded on December 21, 2016. No comments were received during the public comment period. Additionally, there was no request for a public hearing during the comment period, thus a hearing was not held.

The attached enclosure consists of the following:

- Commissioner's Order #2016-04 issued on November 16, 2016, that establishes permanent and enforceable sulfur dioxide (SO_2) emission limits for Carmeuse, located in Lake County, Indiana, in order to ensure continued attainment of the 2010 1-hour sulfur dioxide (SO_2) standard in the area surrounding the facility. The Commissioner's Order contains emission limitations and emission rates for Rotary Kilns EU-1, EU-2, EU-3, EU-4, and EU-5, which shall not exceed nine and forty-eight hundredths (9.48) pounds per hour, each, calculated as a rolling seven hundred and twenty (720) operating hour average, per kiln, as well as reporting and recordkeeping requirements and method for compliance. The effective date for the emission limitations in the Commissioner's Order begins seven calendar days from the issuance of the permit modification required to allow the use of natural gas

within the affected kilns, but no earlier than January 31, 2017. It contains and meets the requirements set forth in 42 U.S.C. §7407(d)(3)(E)(iii) and the conditions will become applicable requirements as defined in 326 IAC 2-7-1(6).

- Administrative checklist, modeling summary and documentation of the public participation process.

This submittal consists of one (1) hard copy of the required documentation. An electronic version of the submittal in PDF format that is identical to the hard copy has been sent to Doug Aburano, Chief of U.S. EPA Region 5's Attainment Planning and Maintenance Section and Chris Panos of U.S. EPA Region 5.

IDEM requests that U.S. EPA proceed with review and approval of this amendment to Indiana's SIP. If you have any questions or need additional information, please contact Brian Callahan, Chief, Air Quality Standards and Implementation Section, Office of Air Quality at (317) 232-8244 or bcallaha@idem.IN.gov.

Sincerely,

Keith Baugues

Keith Baugues
Assistant Commissioner
Office of Air Quality

KB/sad/bec/gf
Attachments: Supporting Documents

cc: Doug Aburano, U.S. EPA Region 5 (no enclosures)
John Mooney, U.S. EPA Region 5 (no enclosures)
Steve Rosenthal, U.S. EPA Region 5 (no enclosures)
Pamela Blakley, U.S. EPA Region 5 (no enclosures)
John Summerhays, U.S. EPA Region 5 (no enclosures)
Keith Baugues, IDEM-OAQ (no enclosures)
Scott Deloney, IDEM-OAQ (no enclosures)
Mark Derf, IDEM-OAQ (w/ enclosures)
Mike Mosier, IDEM-OAQ (no enclosures)
Christine Pedersen, IDEM-OAQ (no enclosures)
Betsy Zlatos, IDEM-OAQ (no enclosures)
Brian Callahan, IDEM-OAQ (w/ enclosure)
File Copy

Supporting Documents

Attachment A: Administrative Checklist (40 CFR 51, Appendix V)

Attachment B: Commissioner's Order #2016-04

Attachment C: Legal Notice of Public Hearing and Certificates of Web Publication

Attachment D: Modeling Summary

Data, calculations, and methodology for determining sulfur dioxide emission limitations and emission rates for Carmeuse's Rotary Kilns EU-1, EU-2, EU-3, EU-4, and EU-5 are available upon request.

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Attachment A

Administrative Checklist

ADMINISTRATIVE CHECKLIST (40 CFR 51, Appendix V)

1. The submittal is accompanied by a formal letter of submittal from the governor or his designee.	Enclosed
2. Evidence that the State has adopted the plan in the State code or body of regulations; or issued the permit, order, consent agreement ("document"); in final form.	Attachment B
a. Date of adoption or final issuance:	November 16, 2016
b. The effective date of the plan, if different from the adoption/issuance date.	18 days after issuance
3. Evidence that the State has the necessary legal authority under state law to adopt and implement the plan.	IC 13-14-1-9 IC 13-14-2-1
4. A copy of the actual regulation or document submitted for approval and incorporation by reference into the plan, including the following:	Attachment B
a. Indication of the changes made to the existing approved plan, where applicable.	
b. The submittal shall be a copy of the official State regulation or document signed, stamped, dated by the appropriate state official indicating that it is fully enforceable by the State. Effective date shall be stated in the document itself.	
5. Evidence that the State followed all of the procedural requirements of the State's laws and constitution in conducting and completing the adoption/issuance of the plan.	Attachment B
6. Evidence that public notice was given, including date of proof of publication.	Attachment C
7. Certification that public hearings were held in accordance with information provided in public hearing notice.	Attachment C
8. Compilation of public comments and State's response.	Attachment C
9. Technical Support Document (if source specific change).	Attachment D

Attachment B

Commissioner's Order for Carmeuse Lime, Inc.
addressing the 1-hour SO_2 NAAQS

Lake County

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

STATE OF INDIANA)
COUNTY OF MARION) SS:
) BEFORE THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IN THE MATTER OF:)
ORDER OF THE COMMISSIONER)
PURSUANT TO IC 13-14-2-1)
FOR CARMEUSE LIME INC.)

NOTICE AND ORDER OF THE COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

This Notice and Order of the Commissioner of the Department of Environmental Management ("Order") is issued pursuant to Indiana Code ("IC") 13-14-1-9, IC 13-14-2-1, and IC 13-14-2-7. During the Commissioner's review, it was determined that the Petition should be granted according to the terms specified below:

PETITION

Petitioner is Carmeuse Lime, Inc. ("Carmeuse" or "Petitioner"), a stationary lime manufacturing plant with Source I.D. Number 089-00112, located at 1 North Carmeuse Drive in Gary, Lake County, Indiana, and permitted under the Part 70 air operating permit program.

The United States Environmental Protection Agency (U.S. EPA) published the final Data Requirements Rule (DRR) for the 2010 1-hour SO_2 Primary National Ambient Air Quality Standard (NAAQS), in the *Federal Register* on August 21, 2015 (80 FR 51052). The DRR was promulgated in order to establish minimum requirements for air agencies to characterize 1-hour SO_2 air quality concentrations across the country, with an emphasis on doing so in the vicinity of sources that have the largest annual SO_2 emissions to aid in the implementation of the 2010 primary 1-hour SO_2 standard. Implementation of the new 1-hour SO_2 standard began in 2013 when U.S. EPA established nonattainment areas based on monitoring data. On March 2, 2015, U.S. EPA entered into a federal Consent Decree with the Sierra Club and Natural Resources Defense Council (NRDC) that established a timeline for the completion of air quality characterizations and designations in all remaining areas of the country. The Consent Decree required U.S. EPA to complete the designations in three additional rounds: Round 2 by July 2, 2016, Round 3 by December 31, 2017, and Round 4 by December 31, 2020.

On January 7, 2016, Indiana submitted to U.S. EPA a list of 11 stationary sources for air quality characterization pursuant to the DRR requirements as part of the Round 3 designation process. The DRR considers air dispersion modeling and ambient air monitoring appropriate ways to assess local SO_2 concentrations and the DRR also provides states with a third option to establish a permanent and federally enforceable facility-wide limit on SO_2 emissions from a

listed source to below 2,000 tons per year. A source that limits its SO_2 emissions under the third option is not subject to the requirements for air quality characterization. Though the Petitioner is not one of the 11 stationary sources listed by IDEM and its SO_2 emissions are less than 2,000 tons per year, it has been identified by IDEM as a source that could impact overall SO_2 air quality in the area surrounding it.

On November 16, 2016, the Petitioner submitted a request to the Commissioner to impose permanent and enforceable SO_2 requirements on the Petitioner in order to ensure continued attainment of the 2010 1-hour SO_2 NAAQS in the area surrounding Carmeuse.

By January 13, 2017, the Indiana Department of Environmental Management ("IDEM") intends to recommend that Lake County be designated as attainment for the 2010 1-hour SO_2 NAAQS. The recommendation will be based on modeling that includes, among other requirements, permanent and enforceable SO_2 requirements at Carmeuse.

The Petitioner proposed that it be required to comply with emission rates for Rotary Kilns EU-1, EU-2, EU-3, EU-4, and EU-5 that would provide for modeled attainment of the 2010 1-hour SO_2 NAAQS.

FINDINGS

Pursuant to IC 13-14-2-1(b) and IC 13-14-2-7(1), the Commissioner may issue Orders to secure compliance with Indiana's environmental statutes and rules, and to impose emission limitations or other restrictions to demonstrate attainment of the ambient air quality standards, including the ambient air quality standard for SO_2 at 326 Indiana Administrative Code ("IAC") 1-3-4(b)(1)(A).

Petitioner's proposal and this Order are intended to support IDEM's intended recommendation that Lake County be designated as attainment for the 2010 1-hour SO_2 NAAQS.

Based on the foregoing information, IDEM finds the following:

1. Permanent and enforceable SO_2 emission requirements for Carmeuse are required in order to model continued attainment of the 2010 1-hour SO_2 NAAQS in areas surrounding the Petitioner.

2. Adding SO_2 emission requirements to the Petitioner's Part 70 Operating Permit is not adequately permanent to assure continued attainment of the 2010 1-hour SO_2 NAAQS. An Order of the Commissioner of IDEM is required to ensure SO_2 emission requirements remain permanent and enforceable, as required by 42 U.S.C. § 7407(d)(3)(E)(iii).

3. Approval by U.S. EPA of the Commissioner's Order into the Indiana State Implementation Plan ("SIP") is required to make the Order requirements federally enforceable. Upon approval into the Indiana SIP, the Order requirements become applicable requirements as defined in 326 IAC 2-7-1(6).

4. Based on modeling conducted by IDEM, the SO_2 emission rates in Order paragraph 2 are adequate to assure continued attainment of the 2010 1-hour SO_2 NAAQS.

ORDER

1. This Order approves the Petition submitted by the Petitioner according to the terms specified below. This Order imposes on Petitioner the SO_2 emission requirements described below.

2. Requirements:

   a. The SO_2 emissions from Rotary Kilns EU-1, EU-2, EU-3, EU-4, and EU-5 shall not exceed nine and forty-eight hundredths (9.48) pounds per hour, each, calculated as a rolling seven hundred and twenty (720) operating hour average, per kiln.

3. The Petitioner shall comply with the requirements in Order paragraph 2, beginning seven (7) calendar days from the issuance of the permit modification required to allow the use of natural gas within the affected kilns, but no earlier than January 31, 2017.

4. As required by 326 IAC 2-7-2(d)(1) and 326 IAC 2-7-5, the Petitioner shall apply to incorporate these Order requirements as set for forth in Order paragraphs 2 and 5 into its Part 70 Operating Permit within thirty (30) days of the effective date of U.S. EPA's approval of the requirements contained within this Commissioner's Order into the State Implementation Plan.

5. The Petitioner shall comply with the reporting, stack testing, compliance determination and recordkeeping requirements specified in this paragraph beginning seven (7) calendar days from the issuance of the permit modification required to allow the use of natural gas within the affected kilns, but no earlier than January 31, 2017.

   a. Reporting: The Petitioner shall submit to IDEM, on a quarterly basis, a report of the SO_2 emissions in pounds per hour from each of Rotary Kilns #1 through #5 (EU-1 through EU-5) on a rolling seven hundred and twenty (720) operating hour average calculated for each kiln. Each report will be submitted not later than thirty (30) days after the end of the calendar quarter being reported.
   b. Stack Testing: The Petitioner shall perform SO_2 testing of Rotary Kilns #1 through #5 (EU-1 through EU-5) utilizing methods approved by the Commissioner at least once every thirty (30) months from the date of the most recent valid stack test. The testing is required in order to develop the SO_2 scrubbing factors used to demonstrate compliance with the SO_2 emission rates in Order paragraph 2. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Permit Condition C.8, Performance Testing, in Title V Permit No. T089-34191-00112 contains Petitioner's obligation with regard to the performance testing required herein. Representative sampling of the as-fed limestone, coal, engineered fuel (EF), and glycerin shall be conducted during each stack test run and the sulfur content analysis of the collected samples shall be included in the stack test report for development of the SO_2 scrubbing factor. Material sampling (as-fed during test) and analysis methods shall be included in the test protocol submitted to OAQ. Stack testing shall be conducted with limestone representative of the material processed in the kiln (dolomitic limestone or high calcium limestone). Testing shall be conducted for both dolomitic limestone and high calcium limestone if the kiln is used or is anticipated to be used to process both. The initial SO_2 stack test for each kiln shall occur no later than 180 days from the effective date as determined in Order paragraph 3. For kilns that process both dolomitic limestone and high calcium

limestone, the stack test for the second product processed in the kiln shall occur by the later of 180 days from the effective date as determined in Order paragraph 3 or 90 days after the second product is first processed, whichever occurs last.

c. Compliance determination: Petitioner shall demonstrate compliance with the SO_2 emission rates in Order paragraph 2 above as follows:

Sampling, Analysis and Calculations:

(i) Sampling: Each shipment of limestone, glycerin, engineered fuel (EF), and coal is sampled and analyzed by an independent laboratory, utilizing American Society for Testing and Materials (ASTM) standards for sampling and chemical analysis. The certified analyses that accompany each shipment shall be the source of the data of the sulfur content in both the limestone and coal calculation of the hourly SO_2 emissions for reporting. Either a certificate of analysis or certification that the EF complies with Carmeuse's specifications will be the source of the data of the sulfur content in the EF for calculation of the hourly SO_2 emissions for reporting. Information concerning the sulfur content of pipeline quality natural gas shall be the source of the data of the sulfur content in the natural gas. Pursuant to 326 IAC 7-4.1-2(c), the current sampling and analysis protocol to be used in lieu of certified analyses, certificates of analysis, or certification of compliance with Carmeuse's specifications for limestone, coal, glycerin, and/or EF is as follows:

(a) The sample acquisition points shall be at locations where representative samples of the respective material shipments may be obtained.

(b) Minimum sample size shall be in accordance with ASTM specifications for representative samples in the size fraction and quantity delivered.

(c) Samples shall be composited and analyzed in accordance with ASTM specifications.

(1) For limestone, a sample shall be taken for each boat/barge load received and analyzed.

(2) For glycerin, a sample shall be taken for each truck load received and analyzed.

(3) For EF, analysis of a composite sample consisting of each truck load received per month.

(4) For coal, a sample shall be taken for each rail load received and analyzed.

(d) Preparation of the sample and sulfur content analysis, where applicable, shall be determined pursuant to 326 IAC 3-7-2(c), (d), and (e).

(ii) For each kiln, the Petitioner shall calculate the SO_2 scrubbing factor for each product type as follows:

Scrubbing Factor (SF) $_{Kiln(i)\ /\ Product(i)}$ = 1- [$SO_{2,\ stack\ test(i)}$ / ($S_{input\ STest(i)}$ *2 * 2000)]

Where, for purposes of this paragraph 5.c.(ii), $S_{input\ STest(i)}$ =

[(%$S_{limestone\ STest(i)}$ x Usage $_{limestone\ STest(i)}$) / 100] +
[(%$S_{coal\ STest(i)}$ x Usage $_{coal\ STest(i)}$) / 100]+
[(%$S_{glycerin\ STest(i)}$ x Usage $_{glycerin\ STest(i)}$) / 100]+
[(%$S_{EF\ STest(i)}$ x Usage $_{EF\ STest(i)}$) / 100] +
[($S_{natural\ gas\ STest(i)}$ x Usage $_{natural\ gas\ STest(i)}$) / (7000 x 2000)]

%$S_{STest(i)}$ = weight percent sulfur in limestone, coal, glycerin or EF inputs, as applicable, as determined by sampling and analysis for the respective material input during the most recent valid stack test for Kiln(i) for the applicable product type (Product(i)).

$S_{natural\ gas\ STest(i)}$= sulfur content of natural gas (grains/dscf) during the most recent valid stack test for Kiln(i) for the applicable product type (Product(i)).

Usage $_{STest(i)}$ = average limestone, coal, glycerin, EF or natural gas input to the kiln during the most recent valid stack test for Kiln(i) for the applicable product type (Product(i)) in tons/hr or dscf/hr as applicable.

The Petitioner shall recalculate the scrubbing factor within thirty (30) days after receiving the results of the most recent valid stack test for SO_2 for Kiln(i) for the applicable product type (Product(i)).

(iii) The Petitioner shall calculate hourly SO_2 emissions (lb/hr) for each of Rotary Kilns #1 through #5 (EU-1 through EU-5) by the following calculations using the input values determined in Order paragraphs 5.c.(i) and 5.c.(ii) above:

$$SO_2\ Emissions_{Kiln\ (i)}\ (lb/hr) = (1 - SF_{Kiln(i)/Product(i)})\ x\ S_{Input}\ x\ 2\ x\ 2000$$

Where

$SF_{Kiln(i)/Product(i)}$ = Scrubbing Factor value determined in Order paragraph 5.c.(ii) from most recent valid stack test for Kiln(i) for the applicable product type (Product(i)) for which the total sulfur input during the test was the same as or greater than the total sulfur input for the hour. If the total sulfur input for the hour is greater than the total sulfur input during the most recent valid stack test for Kiln(i) for the applicable product type (Product(i)), then the Scrubbing Factor value used shall be the value determined based on the results of the most recent prior valid stack test for Kiln(i) for the applicable product type (Product(i)) for which the total sulfur input during the test was the same as or greater than the total sulfur input for the hour.

Hour of operation is defined as any hour that fuel is being combusted within the affected kiln(s).

For the time period beginning seven (7) calendar days from the issuance of the permit modification required to allow the use of natural gas within the affected kilns, but no earlier than January 31, 2017 and the completion of the initial stack testing discussed in Order paragraph 5.b for each kiln and product type, Petitioner shall continue to use the existing scrubbing factors to calculate SO_2 emissions. However, following the development of new scrubbing factors based on the results of the initial stack tests for each kiln and product type, Petitioner shall recalculate the SO_2 emissions for the period beginning seven (7) calendar days from the issuance of the permit modification required to allow the use of natural gas within the affected kilns, but no earlier than January 31, 2017 to the date the new scrubbing factors were determined using the new scrubbing factors. If Petitioner has filed reports as required by Order paragraph 5.a based on the existing scrubbing factors, Petitioner shall submit revised reports based on the use of the new scrubbing factors.

When limestone or product is NOT present in a kiln, the SF shall be equal to zero (0).

For purposes of this paragraph 5.c.(iii), S_{input} = [(%$S_{limestone}$ x Hourly Input $_{limestone}$) / 100] +
[(%S_{coal} x Hourly Input $_{coal}$) / 100]+
[(%$S_{glycerin}$ x Hourly Input $_{glycerin}$) / 100]+
[(%S_{EF} x Hourly Input $_{EF}$) / 100] +
[($S_{natural\ gas}$ x Hourly Input $_{natural\ gas}$) / (7000 x 2000)]

%S = weight percent sulfur in limestone, coal, glycerin or EF inputs, as applicable, as determined by the most recent vendor analysis or sampling, in accordance with 5.c.(i) - Sampling above.

$S_{natural\ gas}$ = sulfur content of natural gas (grains/dscf).

Hourly Input = limestone, coal, glycerin, EF or natural gas input to the kiln in tons/hr or dscf/hr as applicable.

(iv) The Petitioner shall calculate the rolling seven hundred and twenty (720) operating hour average SO_2 emissions (lbs/hr) for each Rotary Kiln #1 through #5 (EU-1 through EU-5) by adding the hourly SO_2 emissions calculated in Order paragraph 5.c.(iii) for each Rotary Kiln to the preceding seven hundred and nineteen (719) hours of operation for each rotary kiln, then divide by seven hundred and twenty (720) to derive the rolling average emissions per kiln per averaging period.

d. Recordkeeping: The Petitioner shall maintain records of the sampling and analysis of raw material and fuels, certifications, other documentation, and the equations used to demonstrate compliance with the emission requirements in Order paragraph 2. These records shall be retained for a period of at least five (5) calendar years.

This Order shall apply to and be binding upon the Petitioner, its successors and assigns. No change in ownership, corporate, or partnership status of the Petitioner shall in any way alter its status or responsibilities under this Order.

Nothing in this Order shall prohibit future revisions to the emission rates in Order paragraph 2, including increases in such emission rates, provided such future revisions demonstrate continued attainment of the 1-hour SO_2 NAAQS, satisfy the requirements in Section 110(l) of the Clean Air Act (42 U.S.C. §7410(l)), and any necessary revisions to the applicable regulations and SIP are obtained.

EFFECTIVE DATE OF ORDER

Pursuant to IC 13-14-2-1(d), IC 4-21.5-3-1, IC 4-21.5-3-5(a)(6), and 40 CFR 51.102, IDEM will give notice of this Order to each entity to whom the Order is directed and affected neighbors by mailing and to the general public by publication.

Pursuant to IC 4-21.5-3-7(a)(3), IC 4-21.5-3-2(e), and IC 4-21.5-3-5, this Order may be appealed by a Petition for review within eighteen (18) days after the date affected persons were given notice of the Order by U.S. mail. Information on petitions for review of this Order can be found at IC 4-21.5-3-7 and 315 IAC 1-3-2.

Pursuant to IC 4-21.5-3-5(f) and IC 4-21.5-3-2(e), this Order is effective eighteen (18) days from mailing of the notice unless a Petition for review has been filed before or on the eighteenth (18th) day. However, the compliance date for the SO_2 emission requirements in Order paragraph 2 begins seven (7) calendar days from the issuance of the permit modification required to allow the use of natural gas within the affected kilns, but no earlier than January 31, 2017.

Pursuant to 40 CFR 51.103, IDEM will submit this Order to U.S. EPA as a revision to the Indiana SIP. Upon approval by the U.S. EPA, this Order will be part of the Indiana SIP.

Persons seeking judicial review of this Order may do so in accordance with IC 4-21.5-5.

If you have procedural or scheduling questions regarding your request for review, you may contact the Office of Environmental Adjudication at (317) 232-8591. If you have questions regarding this Order, please contact Betsy Zlatos, Office of Legal Counsel, by telephone at (317)233-5645 or email at bzlatos@idem.IN.gov.

Dated at Indianapolis, Indiana this 16th day of November, 2016.

Carol S. Comer
Commissioner
Indiana Department of Environmental Management

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Attachment C

Public Participation Documentation

Indiana Department of Environmental Management
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Michael R. Pence
Governor

Carol S. Comer
Commissioner

Legal Notice for Public Hearing
State Implementation Plan (SIP) Submittal

Carmeuse Lime, Inc.
Commissioner's Order No 2016-04

Notice is hereby given under 40 CFR 51.102 that the Indiana Department of Environmental Management ("IDEM") is accepting written comments and providing an opportunity for a public hearing regarding a revision to the Indiana State Implementation Plan (SIP) for Carmeuse Lime, Inc. in Gary, Lake County, Indiana. All interested persons are invited and will be given reasonable opportunity to express their views concerning the proposed revision to the SIP.

The purpose of this notice is to solicit public comment on a proposed revision to the SIP that is accomplished by Commissioner's Order No. 2016-04 for Carmeuse Lime, Inc. The Commissioner's Order imposes a sulfur dioxide emission limit upon Carmeuse Lime, Inc. This Commissioner's Order will be submitted to the United States Environmental Protection Agency ("U.S. EPA") for approval as a revision to the Indiana SIP.

Any person may submit written comments on the proposed SIP revision. Written comments must be postmarked or delivered in person on or before December 21, 2016.

Any person may request a public hearing on the proposed SIP revision. Requests for a public hearing must be submitted on or before December 16, 2016. A hearing has been scheduled for December 20, 2016 at 6:00 p.m. local time. The hearing will occur at the Merrillville Branch of the Lake County Public Library, Meeting Room A, 1919 West 81st Avenue, Merrillville, Indiana 46410. If no timely request for a public hearing is received by December 16, 2016, the hearing will be cancelled. Interested parties can check the online IDEM calendar at http://www.in.gov/activecalendar/EventList.aspx or contact Mark Derf at the contact information listed below to see if the hearing has been cancelled. Interested parties may present oral or written comments at the public hearing, if held.

Comments and supporting documentation, or a request for a public hearing must be sent in writing to Mark Derf via the information provided below. Please refer to Commissioner's Order 2016-04 in all correspondence.

Mark Derf
Indiana Department of Environmental Management
Office of Air Quality
100 North Senate Avenue
Mail Code 61-50 IGCN 1003
Indianapolis, Indiana 46204

Phone: (317) 233-5682
Fax: (317) 233-2342
E-mail:MDERF@idem.IN.gov.

Individuals requiring reasonable accommodations for participation in this event should contact the Indiana Department of Environmental Management, Americans with Disabilities Act coordinator at:

Attn: ADA Coordinator
Indiana Department of Environmental Management
Indiana Government Center North
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

or call (317) 233-1785 (V). Speech and hearing impaired callers may contact IDEM via the Indiana Relay Service (711) or (800) 743-3333. Please provide a minimum of 72 hours notification.

A copy of the Commissioner's Order is available to any person upon request and is available for public inspection at the following locations:

Indiana Department of Environmental Management
Office of Air Quality
Indiana Government Center-North
100 North Senate Avenue
10th Floor
Indianapolis, Indiana 46204

and

Indiana Department of Environmental Management
Northwest Regional Office
330 West U.S. Highway 30, Suites E and F
Valparaiso, Indiana 46385

and

Merrillville Branch of the Lake County Public Library
1919 West 81st Avenue
Merrillville, Indiana 46410

The Commissioner's Order is also available on the IDEM website at:
http://www.in.gov/idem/6974.htm.

For additional information, please contact Mark Derf at the contact information provided above.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Michael R. Pence
Governor

Carol S. Comer
Commissioner

November 16, 2016

CERTIFICATE OF PUBLICATION

This is to certify that the Indiana Department of Environmental Management (IDEM) notice of public comment period and opportunity for a Public Hearing regarding the following:

- **Commissioner's Order #2016-04 for Carmeuse Lime, Inc.**

was published on IDEM's web site on November 16, 2016. It is expected that it will remain posted on the site until at least December 20, 2016.

The document in full was also made available the same day online at the following web address:

http://www.in.gov/idem/6974.htm

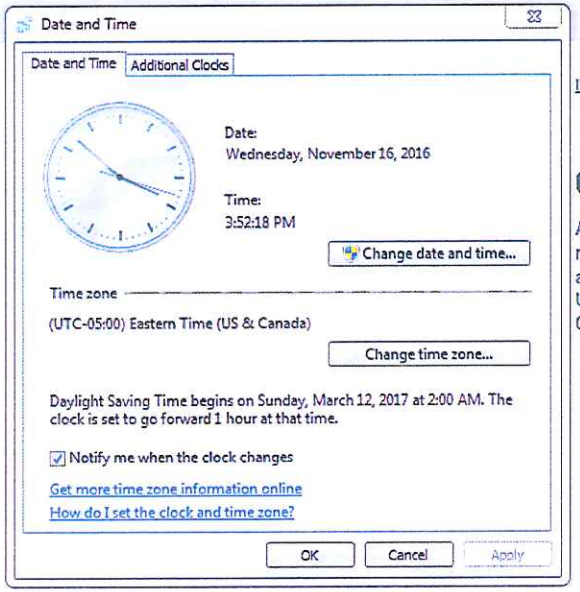
Web publication of the notice was at the request of Scott Deloney, Branch Chief, Programs Branch, Office of Air Quality, IDEM.

By:

Mike Finklestein
IDEM Webmaster

Attachments:
Copy of web page as published.

Indiana Department of Environmental Management



Blue-Green Algae
Community Environmental Health
Criminal Investigations
CTAP: Compliance and Technical Assistance Program
Enforcement
Environmental Education
Hoosier Riverwatch
Indiana Beach Program
Land Quality
Partners for Pollution Prevention
Pollution Prevention
Recycle Indiana
Storm Water Permitting
Waste Tire Program
Water Quality

IDEM > Rules > Commissioner's Orders

Commissioner's Orders

A Commissioner's Order is a permanent enforceable order specifically authorized by an air rule as an alternative to a rule requirement. Once issued, a Commissioner's Order becomes a condition in an air permit. In most cases, a Commissioner's Order will be submitted to U.S. EPA for approval as an amendment to Indiana's state implementation plan for the Clean Air Act.

- **Commissioner's Order #2016-04 for Carmeuse Lime, Inc.:**
  - Notice and Order of the Commissioner of the Department of Environmental Management [PDF]
  - Legal Notice of Public Hearing [PDF]
- **Commissioner's Order #2016-03 for SABIC Innovative Plastics Mt. Vernon, LLC:**
  - Notice and Order of the Commissioner of the Department of Environmental Management [PDF]
  - Legal Notice of Public Hearing [PDF]
- **Commissioner's Order #2016-02 for Clifty Creek Generating Station of Indiana:**
  - Notice and Order of the Commissioner of the Department of Environmental Management [PDF]
  - Legal Notice of Public Hearing [PDF]
- **Commissioner's Order #2016-01 for A.B. Brown Generating Station of Indiana:**
  - Notice and Order of the Commissioner of the Department of Environmental Management [PDF]
  - Legal Notice of Public Hearing [PDF]
- **Commissioner's Order #2015-01 for Abengoa Bioenergy of Indiana:**
  - Notice and Order of the Commissioner of the Department of Environmental Management [PDF]
  - Legal Notice of Public Hearing [PDF]
- **Commissioner's Order #2014-01 for Jeffboat LLC:**
  - Notice and Order of the Commissioner of the Department of Environmental Management [PDF]
  - Legal Notice of Public Hearing [PDF]
- **Commissioner's Order #2009-OAQ-01:**
  - Notice of Commissioner's Order [PDF]

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- Acronyms List
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- Enforcement Database
- Forms.IN.gov
- Impaired Waters (e303d)
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- Enforcement
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Date and Time

Date and Time | Additional Clocks

Date:
Wednesday, November 16, 2016

Time:
4:12:38 PM

Change date and time...

Time zone

(UTC-05:00) Eastern Time (US & Canada)

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Daylight Saving Time begins on Sunday, March 12, 2017 at 2:00 AM. The clock is set to go forward 1 hour at that time.

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		Dates	Comment?	
Multi-County Notices				
Wolverine Pipeline Co	NPDES Final New [PDF]	10/21/2016 - 11/08/2016	No	Counties: Lake, LaPorte, Porter, St. Joseph Project Manager: Nicole Gardner Permit Number: IN0064491
Jasper				
Remington Truck Stop WWTP (fka Crazy D's)	NPDES Draft Modification [PDF]	11/03/2016 - 12/05/2016	Yes	Project Manager: John Donnellan Permit Number: IN0063363
Iroquois Bio-Energy Co, LLC	NPDES Final Renewal [PDF]	10/28/2016 - 11/15/2016	No	Project Manager: Beth Noel Permit Number: IN0062707
Rensselaer Municipal Electric Utility	Renewal of a Part 70 Operating Permit [PDF]	10/04/2016 - 11/03/2016	Yes	Permit Number: T073-36842-00020
Lake				
Carb-Rite Company	Significant Revision to a Federally Enforceable State Operating Permit (FESOP) [PDF]	11/17/2016 - 12/17/2016	Yes	Permit Number: 089-37627-00093
Commissioner's Order #2016-04 for Carmeuse Lime, Inc.	Legal Notice and Opportunity for Public Hearing [PDF]	11/16/2016 - 12/16/2016	Yes	Project Manager: Mark Derf A copy of the commissioner's order is available on the IDEM Commissioner's Orders page.
Ferro Corporation - Former Keil Chemical Facility	RCRA Corrective Action Notice of Remediation Plan [PDF]	11/11/2016 - 12/11/2016	Yes	Project Manager: Robert Marshall Permit Number: IND082071234
Exxon Mobil Oil Corp - East Chicago	NPDES Draft Renewal [PDF]	11/03/2016 - 12/05/2016	Yes	Project Manager: Devery DeBoy Permit Number: IN0056910
BP Products North America, Inc. - Whiting Business Unit	Significant Modification to a Part 70 Operating Permit [PDF]	11/01/2016 - 12/01/2016	Yes	Permit Number: 089-37390-00453
ArcelorMittal USA LLC - Indiana Harbor Long Carbon (SW)	NPDES Final Renewal [PDF]	11/10/2016 - 11/30/2016	No	Project Manager: Beth Noel Permit Number: IN0063355
Silgan Containers Manufacturing Corporation	Renewal of a Part 70 Operating Permit [PDF]	10/27/2016 - 11/26/2016	Yes	Permit Number: T089-37278-00202
Turkey Creek Bank Stabilization	401 Water Quality Certification Public Notice [PDF]	10/27/2016 - 11/17/2016	Yes	Project Manager: Marty Maup Applicant Company: Lake Co Surveyor's Office Permit Number: 2016-557-45-MTM-A

DERF, MARK
Interested Parties Memo for Carmeuse
Here's a draft of this memo. I'll make sure to get Keith's initials on it before it goes out but wanted some more sets

Desktop | 4:12 PM 11/16/2016

Attachment D

Carmeuse:

Modeling Summary

Lake County

Carmeuse Lime Inc. – Commissioner's Order Modeling

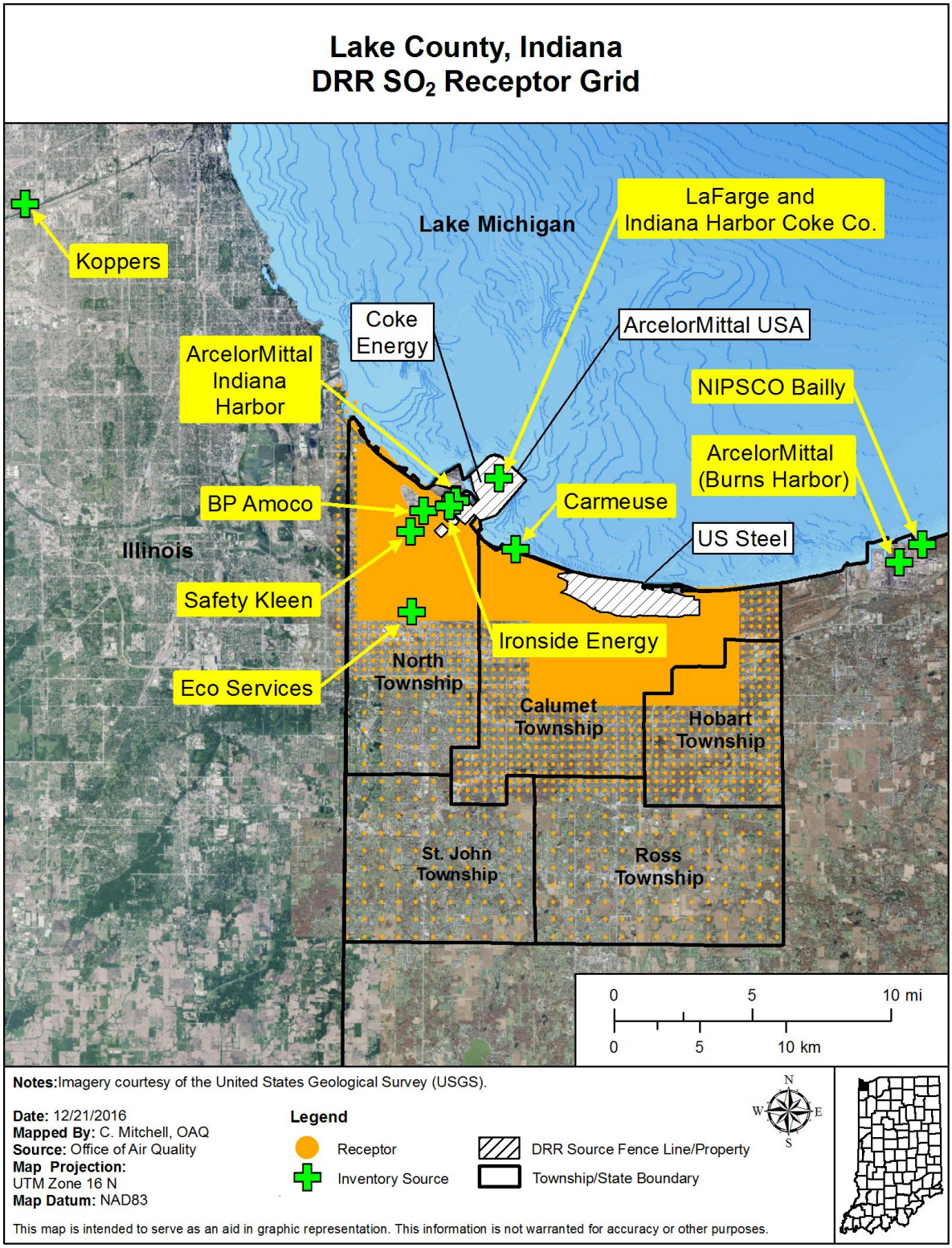
Background

Carmeuse Lime, Inc. (Carmeuse) is a stationary lime manufacturing plant with Source I.D. Number 089-00112, located at 1 North Carmeuse Drive in Gary, Lake County, Indiana. For the Data Requirements Rule (DRR) in Lake County, three sources were identified as exceeding an emissions threshold limit of 2,000 tons of sulfur dioxide (SO_2) for 2014. Sources with SO_2 emissions below 2,000 tons per year in the vicinity of a DRR source but found to have modeled impacts that warranted air quality characterization of the area, were also included. Carmeuse was not identified initially as exceeding the emission threshold; however was identified as one such source that could impact overall SO_2 air quality for the county.

Initial modeling, using actual emissions data from 2013-2015 for sources in Lake and Porter Counties, showed modeled 1-hour SO_2 concentrations higher than the 1-hour SO_2 National Ambient Air Quality Standard (NAAQS) of 75 parts per billion or 196.2 micrograms per cubic meter ($\mu g/m^3$). The high modeled concentrations were attributed to Carmeuse with their highest modeled impacts occurring near the facility. After discussions with Carmeuse, they submitted a request for a Commissioner's Order on November 15, 2016 to establish SO_2 emission limits that would be federally enforceable and permanent. The Commissioner's Order (2016-04) was signed on November 16, 2016.

Figure 1 below shows the property boundary of the facilities and the extent of the 10 kilometer modeling receptor grid into nearby townships. The 10 kilometer receptor grid also extends northward into Lake Michigan. The receptor grid was revised to remove receptors located over Lake Michigan since this is an area where a SO_2 monitor could not be located as per the SO_2 NAAQS Designations Modeling Technical Assistance Document, Section 4.2.

Figure 1 - Map of the Lake County, Indiana DRR Sources and Surrounding Area



AERMOD Dispersion Model

In accordance with Appendix A of Appendix W to 40 Code of Federal Regulations (CFR) Part 51, Indiana used the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) version 15181. BPIPPRIME was used to account for any building downwash concerns.

All regulatory default options were selected to perform the air quality analysis for the Lake County DRR sources with the exception of the use of the adjustment to the surface friction velocity, (ADJ_U*) Beta option in their modeling analysis. This Beta option has been demonstrated to provide better model performance for determining 1-hour SO_2 concentrations. A request to use the ADJ_U* Beta option was submitted to U.S. EPA on November 9, 2016.

Urban Population

Population and city area data were taken from the 2010 census and www.usa.com. Population density was calculated from this website. At least one-fourth of Gary, Indiana's land area consists of a lime kiln facility and U.S. Steel. Those facilities are by definition considered urban areas. The density of Gary's population, excluding the area of U.S. Steel, is greater than 750 people per kilometer. The cities with populations greater than 750 people per square kilometer (Gary, Hammond, East Chicago, Whiting, Munster, and Highland) were added together to obtain a population value of 243,149 for the modeled area with an urban land use classification.

Receptors

Receptors are placed along each DRR source's plant property spaced 50 meters apart, and in a 100 meter grid out 5 kilometers from the DRR sources. Two distinct receptor grids were established for characterizing air quality in Lake County. The first grid is centered at the western portion of Lake County, near Arcelor Mittal - Indiana Harbor, Coke Energy, and Indiana Harbor Coke Company; while the second grid is centered at U.S. Steel. Beyond this is a 500 meter grid extending out 10 kilometers south and west of U.S. Steel. Beyond this, a coarser receptor grid of 1,000 meter grid extends out to the Indiana/Illinois state and Porter county boundaries.

Meteorology/Wind Rose

The Gary IITRI surface meteorological data and the Lincoln, Illinois upper air meteorological data taken from 2013 through 2015 were used to determine the meteorological conditions surrounding the three Lake County DRR sources and Carmeuse. The Gary IITRI surface meteorological data will be used to more accurately include the influence of Lake Michigan on the meteorological conditions at and in the area immediately surrounding the three Lake County DRR facilities and Carmeuse. The Gary IITRI surface data was processed without turbulence parameters in order to use the ADJ_U* Beta option.

Emissions Summary

Carmeuse, along with Lake and Porter County SO_2 sources in Indiana and one large SO_2 source in Illinois were included in the DRR modeling for Lake County. Many of Arcelor Mittal - Indiana Harbor and Coke Energy emission units in Lake County used 2013-2015 Continuous Emission Monitoring (CEM) data. U.S. Steel does not have CEM data, however report seasonally and daily varying emission fractions for several of their emissions units and these emission fractions were used in the modeling. Seasonal and daily varying emission fractions were used with other non-DRR sources greater than 100 tons/year when available. If CEM data and seasonal or daily varying emissions were not available for the DRR source emission units, then actual annual SO_2 emissions were averaged over the period of time that data was not available.

The 2013-2015 EMITS databases of actual emissions for sources in Lake County were used to determine emissions for the non-DRR SO_2 sources in the area. Facilities in Lake County were included in this analysis if their 2014 SO_2 emissions totaled more than 40 tons of SO_2 per year. This approach accounts for 99.85% of SO_2 emissions from Lake County, Indiana for 2014. Two Porter County DRR SO_2 sources (ArcelorMittal – Burns Harbor and NIPSCO Bailly) were included in the Lake County DRR modeling analysis. IDEM identified one source in the State of Illinois that emitted over 250 tons of SO_2 in 2014 and located within 30 kilometers of the Lake County, Indiana sources. Two coal-fired power plants in Cook County, Illinois were shut down in 2012 and not included in the modeling analysis. The following list of facilities in Table 1 will be included in the air quality modeling analysis to establish SO_2 emission limits for Carmeuse.

Table 1 - SO_2 Emissions Inventory for Lake County DRR Modeling Analysis

Source	Source ID	Location	2013-2015 Average SO_2 Emissions (tpy)
BP Products, North America Inc.	18-089-00003	Lake County, IN	478.4
Cargill, Inc	18-089-00203	Lake County, IN	16.5
Eco Services Corp.	18-089-00242	Lake County, IN	255.6
ArcelorMittal USA	18-089-00316	Lake County, IN	1430.8
Indiana Harbor Coke Company	18-089-00382	Lake County, IN	2441.1
Ironside Energy LLC	18-089-00448	Lake County, IN	204.5
ISPAT Inland LaFarge North America	18-089-00458	Lake County, IN	122.9
ArcelorMittal – Burns Harbor	18-127-00001	Porter County, IN	12,189
NIPSCO Bailly Generating Station	18-127-00002	Porter County, IN	2013-2015 CEMS Data
Koppers Inc.	170000035076	Cook County, IL	1,785.7

Temporal Varying Seasonal 1-Hour Seasonal SO_2 Background

Temporally varying seasonal 1-hour SO_2 background concentrations were taken from the Hammond 141st Street (Site ID18-089-2008) SO_2 monitor in Lake County and input directly into the AERMOD model for the modeling analysis. Table 2 shows the hourly seasonal 1-hour SO_2 concentrations in parts per billion (ppb) which represents the background concentrations for the northern Lake County area.

Table 2 - 99th Percentile Temporally Varying Seasonal SO_2 Background Concentrations (ppb) from Hammond SO_2 Monitor (2013-2015)

	Hr 1	Hr 2	Hr 3	Hr 4	Hr 5	Hr 6	Hr 7	Hr 8
Winter	5.4	5.7	5.94	6.08	6.12	6.18	5.8	6.14
Spring	5.74	5.53	5.44	5.34	5.6	6.07	6.4	7.03
Summer	4.87	4.63	4.6	4.8	5.57	5.28	6.01	6.57
Fall	5.03	4.13	5.34	3.84	4.61	6.35	6.1	6.28

	Hr 9	Hr 10	Hr 11	Hr 12	Hr 13	Hr 14	Hr 15	Hr 16
Winter	6.73	7.03	8.76	7.72	7.89	7.18	8.78	7.84
Spring	8.27	8.43	9.19	7.68	8.2	8.09	8.14	8.86
Summer	8.97	7.54	8.77	8.31	9	7.96	8.95	6.51
Fall	8.1	8.04	8.11	6.84	8.08	7.52	8.16	7.74

	Hr 17	Hr 18	Hr 19	Hr 20	Hr 21	Hr 22	Hr 23	Hr 24
Winter	6.9	6.18	6.44	5.74	5.58	5.74	5.68	5.58
Spring	8.85	9.4	9.24	7.76	7.9	6.84	7	7.84
Summer	7.76	7.87	7.97	6.31	6.04	8.07	5.69	5.14
Fall	8.91	6.81	7.12	7.31	6.75	5.37	4.9	3.8

Modeled Emissions Limits

Carmeuse's SO_2 emissions are distributed amongst their five kilns. In order to establish hourly emissions limits for Carmeuse, modeling was conducted to determine limits that demonstrated compliance with the 1-hour SO_2 standard. Each kiln has six stacks so modeling for the Commissioner's Order determined each kiln would be limited to 12.0 pounds of SO_2/hour or 2.0 pounds of SO_2/hour for each stack of each kiln. The three DRR sources, surrounding SO_2 source inventories and temporally varying season SO_2 background concentrations were included in the modeling to establish Carmeuse's emission limits.

The 720 operating hour rolling average limit was based on the 12.0 pound/hour modeled limit established for each kiln. U.S. EPA recommended using a flat averaging ratio for emission units with no emission controls, as referenced in Table 1 of U.S. EPA's "Guidance for 1-hour SO_2 Nonattainment Area SIP Submissions". Based on the average ratio of 99th percentile 30-day average SO_2 emission values to the 99th percentile of hourly SO_2 emission values of 0.79, the corresponding 720 operating hour average for each kiln was calculated to be 9.48 lb/hr. Table 3 shows the modeled results used to establish Carmeuse's hourly SO_2 emission limits.

Table 3 - Carmeuse 1-Hour SO_2 Modeling Results

Modeled Source	Modeled Emission Limit per Kiln (lb/hr)	Modeled Concentration Including Seasonal Hourly Background (µg/m^3)	1-Hour SO_2 NAAQS (µg/m^3)	Facility Models Attainment
Carmeuse	12.0	191.9	**196.2**	**Yes**

Summary

Carmeuse Lime Inc. was identified as an emission source that could impact overall SO_2 air quality for Lake County in the air quality characterization required in the DRR. Initial Lake County DRR modeling showed 1-hour SO_2 modeled impacts that would not comply with the 1-hour SO_2 standard. Carmeuse requested a Commissioner's Order to establish hourly SO_2 emission limits to attain the 1-hour SO_2 standard. Based on an hourly modeled emission limit of 12.0 lbs of SO_2/hr per kiln, Carmeuse is able to demonstrate attainment of the 1-hour SO_2 standard when modeled with all other DRR sources in Lake County as well as SO_2 inventory sources in surrounding counties and states. All other modeling parameters were maintained from the Lake County DRR modeling.