



Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments

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Subpart S—Lime Manufacturing

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Subpart S—Lime Manufacturing

**U. S. Environmental Protection Agency
Office of Atmosphere Programs
Climate Change Division
Washington, D.C.**

FOREWORD

This document provides EPA's responses to public comments on EPA's Proposed Mandatory Greenhouse Gas Reporting Rule. EPA published a Notice of Proposed Rulemaking in the Federal Register on April 10, 2009 (74 FR 16448). EPA received comments on this proposed rule via mail, e-mail, facsimile, and at two public hearings held in Washington, DC and Sacramento, California in April 2009. Copies of all comments submitted are available at the EPA Docket Center Public Reading Room. Comments letters and transcripts of the public hearings are also available electronically through <http://www.regulations.gov> by searching Docket ID *EPA-HQ-OAR-2008-0508*.

Due to the size and scope of this rulemaking, EPA prepared this document in multiple volumes, with each volume focusing on a different subject area of the rule. This volume of the document provides EPA's responses to the significant public comments received for 40 CFR Part 98, Subpart S—Lime Manufacturing.

Each volume provides the verbatim text of comments extracted from the original letter or public hearing transcript. For each comment, the name and affiliation of the commenter, the document control number (DCN) assigned to the comment letter, and the number of the comment excerpt is provided. In some cases the same comment excerpt was submitted by two or more commenters either by submittal of a form letter prepared by an organization or by the commenter incorporating by reference the comments in another comment letter. Rather than repeat these comment excerpts for each commenter, EPA has listed the comment excerpt only once and provided a list of all the commenters who submitted the same form letter or otherwise incorporated the comments by reference in table(s) at the end of each volume (as appropriate).

EPA's responses to comments are generally provided immediately following each comment excerpt. However, in instances where several commenters raised similar or related issues, EPA has grouped these comments together and provided a single response after the first comment excerpt in the group and referenced this response in the other comment excerpts. In some cases, EPA provided responses to specific comments or groups of similar comments in the preamble to the final rulemaking. Rather than repeating those responses in this document, EPA has referenced the preamble.

While every effort was made to include significant comments related to 40 CFR Part 98, Subpart S—Lime Manufacturing in this volume, some comments inevitably overlap multiple subject areas. For comments that overlapped two or more subject areas, EPA assigned the comment to a single subject category based on an assessment of the principle subject of the comment. For this reason, EPA encourages the public to read the other volumes of this document with subject areas that may be relevant to 40 CFR Part 98, Subpart S—Lime Manufacturing.

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SUBPART S—LIME MANUFACTURING

1. DEFINITION OF SOURCE CATEGORY

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 12

Comment: There is some ambiguity regarding which lime kilns, equipment, and operations are covered by the Proposed Rule. Subpart S requires facilities that contain a “lime manufacturing process” to report emissions, but the Rule does not define the term under 40 C.F.R. 98.6, Definitions. See 40 C.F.R. 98.191.40 C.F.R. 98.190 discusses the lime manufacturing process as using “a rotary lime kiln to produce a lime product”. It appears that the Proposed Rule merely copied the 1977 definition of “rotary lime kiln” contained in the New Source Performance Standards. See 40 C.F.R. 60.341(d). The definition in Subpart S appears to exclude vertical and other types of lime kilns from the Rule. Another ambiguity can be seen in 40 C.F.R. 98.192(b), which requires sources to report GHG gases from “each lime kiln and any other stationary combustion unit.” However, the Rule does not identify what equipment would constitute a “stationary combustion unit.” The Proposed Rule should clarify what sources and equipment are covered by the Proposed Rule. The Proposed Rule should be clarified to identify the sources and equipment subject to this Rule, i.e., those involved in the manufacture of lime. LWB suggests that EPA incorporate into the Proposed Rule the definition of “lime manufacturing plant” contained in the National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants (“Lime MACT”), 40 C.F.R. 63. 708 1(a)(1) and 7082. Rather than use a thirty-year old definition of “rotary lime kiln,” the Proposed Rule should incorporate the more recent definition of “lime manufacturing plant” developed after lengthy discussions between EPA and the lime industry. A lime manufacturing plant includes any facility that manufactures a lime product by calcination of limestone, dolomite or shells. Id. at 63.7081(a)(1). This definition would apply to new and existing kilns, associated coolers, and processed stone handling (“PSH”) operations located at a lime manufacturing plant. Id. at 63.7082(a). [Footnote: “A PSH operations system includes all equipment associated with PSH operations beginning at the processed stone storage bin(s) or open storage piles and ending where the processed stone is fed into the kiln. It includes man-made processed stone storage bins (but not open processed stone storage piles), conveying system transfer points, bulk loading or unloading systems, screening operations, surge bins, bucket elevators, and belt conveyors, No other materials processing operations are subject to this subpart.” 40 C.F.R. 63. 7082(g).] The Lime MACT explains that PSH equipment includes all equipment beginning at the processed stone storage bin and ending where the processed stone enters the kiln, such as man-made processed stone storage bins, conveying systems, bulk loading and unloading systems, screening operations, surge bins, bucket elevators, and belt conveyors. Id. at 63.7082(g). Use of the Lime MACT’s definition of lime manufacturing process would make certain that all new and existing lime kilns (not just rotary kilns) are captured by the Proposed Rule, and it would provide certainty to the regulated community regarding which stationary combustion units are required to report emissions. See 40 C.F.R. 63.7081(a)(1) and 7082(a) and (g).

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Kimberly S. Lagomarsino
Commenter Affiliation: Mississippi Lime
Document Control Number: EPA-HQ-OAR-2008-0508-1568
Comment Excerpt Number: 1

Comment: Mississippi Lime Company has noticed that there is ambiguity concerning lime kilns covered by the proposed rule. It appears that the rule is written to only apply to "lime manufacturing processes [that] use a rotary lime kiln to produce a lime product... [40 CFR 98.190]." However, within the lime industry and at Mississippi Lime Company, lime products are produced using kiln types other than simply "rotary lime kilns" (e.g., vertical kilns). Also, there is ambiguity about what combustion sources, exactly, must be included in the reporting. 40 CFR 98.192(a) notes that emissions must be reported from "fuel combustion at each lime kiln and any other stationary combustion unit." However, it is not clear if such units only include stationary combustion units involved in the lime manufacturing process. Suggestion: Please clarify the proposed rule to identify the sources and equipment subject to this rule (e.g., those involved in the manufacture of lime). Also, as suggested in the National Lime Association's comments to the proposed rule, please amend the definition of "lime manufacturing plant" to be consistent with the definition contained in the National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants, the "lime MACT" (40 CFR 63.7081).

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas
Commenter Affiliation: National Lime Association (NLA)
Document Control Number: EPA-HQ-OAR-2008-0508-0520.1
Comment Excerpt Number: 1

Comment: There is some ambiguity regarding which lime kilns, equipment, and operations are covered by the Proposed Rule. Subpart S requires facilities that contain a "lime manufacturing process" to report emissions, but the Rule does not define the term under 40 C.F.R. § 98.6, Definitions. See 40 C.F.R. § 98.191. Lime manufacturing process is described as using "a rotary lime kiln to produce a lime product." 40 C.F.R. § 98.190. It appears that the Proposed Rule merely copied the 1977 definition of "rotary lime kiln" contained in the New Source Performance Standards. See 40 C.F.R. § 60.341(d). The description in Subpart S appears to exclude vertical and other types of lime kilns from the Rule. Another ambiguity can be seen in 40 C.F.R. § 98.192(b), which requires sources to report GHG gases from "each lime kiln and any other stationary combustion unit." However, the Rule does not identify which equipment would constitute a "stationary combustion unit." The Proposed Rule should clarify which sources and equipment are covered by the Proposed Rule. The Proposed Rule should be clarified to identify the sources and equipment subject to this Rule, i.e., as those involved in the manufacture of lime. NLA suggests that the Proposed Rule incorporate the definition of "lime manufacturing plant" contained in the National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants ("Lime MACT"), 40 C.F.R. §§ 63.7081(a)(1) and 7082. Rather than use a thirty-year old definition of "rotary lime kiln," the Proposed Rule should adopt the more recent definition of "lime manufacturing plant" developed after lengthy discussions between EPA and the lime industry. Under the Lime MACT, a lime manufacturing plant includes any facility that

manufactures a lime product by calcination of limestone, dolomite or shells. Id. at § 63.7081(a)(1). This definition would apply to all kiln types, associated coolers, and processed stone handling (“PSH”) operations located at a lime manufacturing plant. [Footnote: “A PSH operations system includes all equipment associated with PSH operations beginning at the processed stone storage bin(s) or open storage piles and ending where the processed stone is fed into the kiln. It includes man-made processed stone storage bins (but not open processed stone storage piles), conveying system transfer points, bulk loading or unloading systems, screening operations, surge bins, bucket elevators, and belt conveyors, No other materials processing operations are subject to this subpart.” 40 C.F.R. § 63.7082(g).] Id. at § 63.7082(a). The Lime MACT explains that PSH equipment includes all equipment beginning at the processed stone storage bin and ending where the processed stone enters the kiln, such as manmade processed stone storage bins, conveying systems, bulk loading and unloading systems, screening operations, surge bins, bucket elevators, and belt conveyors. Id. at § 63.7082(g). Use of the Lime MACT’s definition of lime manufacturing process would ensure that all kiln types (not just rotary kilns) are captured by the Proposed Rule, and it would provide certainty to the regulated community regarding which stationary combustion units are required to report emissions. See 40 C.F.R. §§ 63.7081(a)(1) and 7082(a) and (g). To clarify that all lime kilns are covered by the Proposed Rule and to identify covered equipment, the following provisions should be revised as follows: (a) 40 C.F.R. § 98.190 should be revised as follows: “Lime manufacturing plants use a kiln to produce a lime product . . .” (b) 40 C.F.R. § 98.191 should be revised as follows: “You must report GHG emissions under this subpart if your facility is a lime manufacturing plant, as defined in 40 C.F.R. § 63.7081(a)(1), and the facility meets the requirements in either § 98.2(a)(1) or (2).” (c) 40 C.F.R. § 98.192(a) should be revised as follows: “You must report CO₂ process emissions from all kilns combined as specified in this subpart.” (d) 40 C.F.R. § 98.192(b) should be revised as follows: “You must report CO₂, N₂O, and CH₄ emissions from fuel combustion for all kilns combined and related equipment subject to 40 C.F.R. §§ 63.7081(a)(1) and 7082. You must follow the requirements of subpart C of this part.”

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Richard M. O'Rourke

Commenter Affiliation: Miami-Dade Water and Sewer Department

Document Control Number: EPA-HQ-OAR-2008-0508-1806

Comment Excerpt Number: 1

Comment: The rule is not clear to me as to whether or not the CO₂ emissions associated from the on-site re-processing of water softening residuals in the rotary kilns at our water treatment facilities are covered by this rule, as the kiln is used for on-site material recovery of the quick lime used in water treatment, and the process was excluded from (NESHAPS) for Lime Manufacturing Plants (LMP). (40 CFR Part 63, Subpart AAAAA) as well as Subpart HH - Lime Manufacturing Plants. I know of our two kilns and of one other in Dayton, Ohio which engage in the recovery and reuse of water softening residuals which this rule needs to more clearly address. Unless the water treatment processes are changed, the water treatment plants will still need to use quick lime, and the quick lime will still have to be manufactured and transported to these facilities, the additional CO₂ emissions from the transport fuel usage needs to be evaluated, in some fashion, to determine if these process emissions need to be addressed in the reporting rule.

Response: The NESHAP definition of Lime Manufacturing Plants has been adopted in the final rule and clearly excludes processes for water softening. EPA may address these emissions in future rulemakings.

2. GHGS TO REPORT

Commenter Name: Kimberly S. Lagomarsino

Commenter Affiliation: Mississippi Lime

Document Control Number: EPA-HQ-OAR-2008-0508-1568

Comment Excerpt Number: 17

Comment: 40 CFR 98.192(b) requires sources to report emissions from "each lime kiln and any other stationary combustion unit." Suggestion: Please clarify whether this requirement is restricted to combustion units involved in the lime manufacturing process, or if it includes all stationary combustion units at a lime manufacturing facility.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Jeffrey Carlton

Commenter Affiliation: Specialty Minerals Inc. (SMI)

Document Control Number: EPA-HQ-OAR-2008-0508-0907.1

Comment Excerpt Number: 1

Comment: SMI and other producers of precipitated calcium carbonate (PCC) react calcium oxide (lime), water and carbon dioxide under carefully controlled conditions to form the final product at lime plants and at pulp and paper mills. As explained below, the carbon dioxide used in this process is normally recovered from combustion and process emissions from these sites. This carbon dioxide becomes sequestered in the PCC product and cannot be released to atmosphere without recalcining the PCC at temperatures above 1750 degrees F. Under EPA's proposed Greenhouse Gas Reporting Regulations, the emissions calculations required of lime and paper manufacturers do not include a deduction for the carbon dioxide that is taken up as a raw material during the production of PCC. This omission thus results in an overstatement of total carbon dioxide emissions in the U.S. by approximately one million metric tonnes per year. SMI is requesting that the proposed regulations be revised to include this important deduction and thereby avoid overestimating total U.S. carbon dioxide emissions. Precipitated calcium carbonate is used in a variety of industries, including paper, plastics, paints, roof and floor tiles, sealants and food-grade applications (e.g., toothpaste, antacids, animal feed). PCC is produced by combining calcium oxide (lime), water and carbon dioxide in a vessel under carefully controlled conditions. SMI estimates that approximately 2.3 million metric tonnes of PCC are produced each year in the United States. SMI and other PCC manufacturers produce PCC at two types of facilities. PCC for the paper industry is frequently produced at small plants located at the paper mill customer sites. SMI currently operates 25 PCC plants at paper mills in the United States and an additional 27 sites around the world. At these locations the lime reburn kiln and/or the power boiler is typically used as the source of carbon dioxide. PCC is also produced at lime production facilities. In these situations, the lime kiln gas is used as the source of carbon dioxide. SMI is aware of three lime facilities in the United States that produce PCC in this manner. SMI

owns one of these operations in the US and also operates a similar facility located near Birmingham, England. PCC is produced by combining calcium oxide (lime), carbon dioxide, and water in vessels. The process at begins when dry calcium oxide is combined with water to produce calcium hydroxide, as shown below: $\text{CaO} + \text{H}_2\text{O} = \text{Ca(OH)}_2$ The calcium hydroxide is then combined with carbon dioxide to form PCC, as per the following chemical reaction: $\text{CO}_2 + \text{Ca(OH)}_2 = \text{CaCO}_3 + \text{H}_2\text{O}$ As mentioned above, the carbon dioxide for this process is typically obtained from a paper mill lime kiln, recovery boiler or power boiler. PCC plants located at a lime plant use the gas from the facility's lime kiln as the source of carbon dioxide. The carbon dioxide that reacts with the calcium hydroxide in the PCC process is permanently captured. PCC is chemically identical to naturally occurring calcium carbonate found in limestone deposits. The carbon dioxide that is now part of the PCC molecule cannot be released from either precipitated or naturally occurring calcium carbonate without the high temperature calcination process that takes place in the lime kiln PF1 PT. As a result of SMI's process, the carbon dioxide will not be emitted from the PCC product under normal conditions of use or final disposal. The 2.3 million metric tonnes of PCC that is produced each year in the U.S. by the various producers represents approximately 1 million metric tonnes of carbon dioxide that is sequestered and is not emitted to atmosphere. Pure, bone dry calcium carbonate (either precipitated or natural) contains 44% carbon dioxide. However, pure calcium carbonate deposits do not exist in nature. PCC, which is substantially more pure than natural calcium carbonate, still contains small amounts of bound water and impurities. As a result, the actual amount of carbon dioxide contained in PCC will vary from 40 – 44% of the final PCC product. The amount of carbon dioxide that is captured by the PCC process can be measured using ASTM C25 Section 22 - Determination of Carbon Dioxide by Standard Method. SMI requests that EPA include a method to recognize the permanent sequestration of carbon dioxide in the PCC product and similar products where carbon dioxide that would otherwise contribute to greenhouse gas emissions is used as a raw material. This method should provide credit to the entity utilizing the carbon dioxide as a raw material. Such credit would encourage the development and use of this and similar technologies that beneficially recover carbon dioxide. Granting credits for end users of carbon dioxide would have the side benefit of encouraging sequestration technologies, and potentially new "green" jobs, at the locality that would otherwise be impacted by the release of waste gas emissions.

Response: See EPA's Response to Public Comments for Subpart PP Suppliers of Carbon Dioxide at the response to comment EPA-HQ-OAR-2008-0508-0380.1 excerpt 40.

3. SELECTION OF PROPOSED GHG EMISSIONS CALCULATION AND MONITORING METHODS

Commenter Name: Kimberly S. Lagomarsino

Commenter Affiliation: Mississippi Lime

Document Control Number: EPA-HQ-OAR-2008-0508-1568

Comment Excerpt Number: 16

Comment: EPA's proposed rule only provides emission calculation methods for by-products/wastes such as lime kiln dust; a method for determining emissions from by-products/wastes from wet scrubbers is not included. Suggestion: Please adopt the National Lime Association recommendation of separately determining plant-wide emissions from wet scrubber

by-products/wastes, then adding these emissions figures to the emissions from lime production, other by-products/wastes, and fuel combustion, as required by the National Lime Association Protocol.

Response: We appreciate the comments to clarify that emissions from wet scrubber sludge be calculated. We have revised the language in Subpart S (Lime Manufacturing) under Section 98.193 of the final rule to clarify that scrubber sludge is included in the calculations for byproducts/wastes.

Commenter Name: Kimberly S. Lagomarsino

Commenter Affiliation: Mississippi Lime

Document Control Number: EPA-HQ-OAR-2008-0508-1568

Comment Excerpt Number: 15

Comment: 40 CFR 98.193(b)(1) requires that a monthly emission factor be calculated for each kiln for each type of lime produced using Equation S-1. Mississippi Lime Company is not able to calculate emissions from each kiln. Suggestion: Please revise 98.193(b)(1) to indicate that a monthly emission factor must be calculated for each type of lime product. Additionally, Mississippi Lime Company supports the replacement of Equation S-1 with the National Lime Association's Proposed S-1 Equation.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Kimberly S. Lagomarsino

Commenter Affiliation: Mississippi Lime

Document Control Number: EPA-HQ-OAR-2008-0508-1568

Comment Excerpt Number: 14

Comment: According to 40 CFR 98.193(b), if a facility does not have a CEMS, it is required to "calculate CO₂ process emissions based on the production of each type of lime and calcined by-products/wastes produced at each kiln..." It is not feasible for Mississippi Lime Company to calculate such emissions from each kiln because lime and by-products/wastes from multiple kilns are aggregated in common handling and storage equipment prior to placement in bags, trucks, or railcars for measurement and sale. Suggestion: As with the cement industry, which has a similar manufacturing process to the lime industry and is permitted to calculate CO₂ process emissions "from all kilns at the facility" [40 CFR 98.83(b)(1)], please revise 98.193(b) to indicate that if a facility does not have a CEMS, it is required to "calculate CO₂ process emissions based on the production of each type of lime and calcined by-products/wastes produced at all kilns combined...."

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Kimberly S. Lagomarsino

Commenter Affiliation: Mississippi Lime

Document Control Number: EPA-HQ-OAR-2008-0508-1568

Comment Excerpt Number: 11

Comment: 40 CFR 98 Subpart S - Lime Manufacturing requires the lime industry to calculate, monitor, and report CO₂ process emissions on a kiln-specific basis. However, this requirement differs from the National Lime Association Protocol referenced in the Preamble of the rule for calculation of process-related CO₂ emissions. As such, it is inconsistent to require kiln-specific data calculation and reporting when the National Lime Association Protocol specifically calls for data determination and reporting of CO₂ emissions on a facility-wide, or across all kilns, basis. Consequently, any reported kiln-specific emissions would only be estimates, and would not be directly measured CO₂ emissions. Suggestion: Please revise 98.192(a) to read "you must report aggregated CO₂ process emissions from each facility...." Suggestion: Please revise 98.193(b) to read "if you do not operate and maintain a CEMS that measures total CO₂...calculate CO₂ process emissions based on the production of each type of lime and calcined by-products produced at all kilns combined...."

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 8

Comment: Facility-Wide Emissions from Wet Scrubbers: The proposed Rule does not include an emissions calculation method for all known byproducts and wastes, such as sludge from wet scrubbers. Facility-wide emissions from wet scrubbers should be calculated separately and then added to emissions from lime production, byproducts, and fuel combustion, as permitted by the NLA Protocol. See Attachment 1 for NLA's Proposed S-2b Equation [see DCN:EPA-HQ-OAR-2008-0508-0719.1] for calculating facility-wide emissions from wet scrubbers.

Response: See the response to comment EPA-HQ-OAR-2008-0508-1568, excerpt number 16.

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 7

Comment: The equations in the Proposed Rule requiring the lime industry to calculate process emissions for each kiln are unnecessarily complex. The Industry's protocol calls for lime manufacturing plants to calculate process emissions by: (1) quantifying the amount of each type of lime produced at the facility or each kiln, depending on plant configuration; (2) quantifying the amount of byproduct/waste (LKD, scrubber sludge, or off-specification material) generated at the facility or kiln, depending on the plant configuration ; (3) measuring the percentage of calcium oxide (CaO) and magnesium oxide (MgO) contained in each type of lime and byproduct/waste produced at the facility; and then (4) multiplying the amount of lime/byproduct by an appropriate emission factor that is derived from the oxide content of the material. This emissions calculation method has been standardized in an industry protocol based on actual plant

data. LWB Refractories supported measuring and reporting of GHG emissions since 2003, when the National Lime Association and its members committed to participate in DOE's Climate VISION Program by reducing by 8% on an aggregate basis GHG emissions from fuel combustion per ton of lime product between 2002 and 2012. DOE's Climate VISION Program requires the lime industry to report to DOE aggregated industry data regarding energy-related CO₂ emissions/ton of lime (the "energy intensity of lime manufacturing"). There is no requirement for facilities to calculate or report data for each kiln, nor is it essential to collect kiln-specific information. Rather, the Climate VISION "program offers a range of reporting methodologies from stringent direct measurement to simplified calculations using default factors and allows reporters to report using the methodological option they choose." Preamble to U.S. EPA Proposed Rule on Mandatory Reporting of Greenhouse Gases, 74 Fed. Reg. 16,448, 16,458 (April 10, 2009). [[Footnote: Data provided by individual facilities or companies is not disclosed to DOE or any other party, including NLA members, because this information is sensitive business information. Revealing the energy intensity of each kiln would provide competitors with information about the cost structure for each product.] The range of reporting options permitted by DOE's reporting program and the variability in lime manufacturing operations resulted in the development of the NLA CO₂ Emissions Calculation Protocol for the Lime Industry, English Units Version, Revised Feb. 5, 2008" (referred to herein as the "NLA Protocol"), which is designed to estimate emissions using as much actual data as possible. Looking at the NLA Protocol, it appears that all members provide kiln-specific information, but the fact is that some members develop facility-wide data because the NLA Protocol seeks, but does not mandate, kiln-specific data. Many lime manufacturers allocate lime production across multiple kilns in order to report a "per kiln" value on the spreadsheet. The allocation may be based on stone input, hours of operation and/or other plant specific information and conditions. To support mandatory emissions reporting program designed to report direct measurements of greenhouse gases emitted from facilities, the NLA Protocol should be used to determine and report facility-wide emissions based on actual measurements. The configuration of many lime plants results in use of multiple kilns to make a single product that is aggregated into a single handling and storage system. The aggregation of lime products makes it extremely difficult to estimate the amount of product produced at an individual kiln. Similarly, the oxide content of lime and byproducts sold is also measured on a product, not kiln, basis. The lack of kiln-specific production and oxide content data requires many lime manufacturers to collect data for all kilns combined and then allocate data across all kilns. Allocations are not typically based on direct measurements of lime or byproduct produced at the kiln or the oxide content of material produced at the kiln. The NLA Protocol anticipated allocation of data for "bubbled" plants. The integrated nature of lime plants and the NLA Protocol's reliance on actual data from multiple kilns and the facility support LWB's comment that it is essential that the lime industry be permitted to report process emissions for all kilns combined. This is consistent with the Rule's objective to collect emissions information on a facility level and also with EPA's treatment of the cement industry, which is permitted to report greenhouse gases emissions for "all kilns combined." See Preamble of the Proposed Rule for Mandatory Reporting of Greenhouse Gas Emissions, 74 Fed. Reg. at 16,452; 40 C.F.R. 98.82 and 98.83(b)(1). The Preamble to Proposed Rule states it will follow the NLA Protocol to calculate process emissions, but the Proposed Rule largely ignores its procedures. See 74 Fed. Reg. at 16,523. However, throughout Subpart S of the Proposed Rule, EPA requires the lime industry to calculate, monitor, and report CO₂ process emissions for each kiln. The disparate treatment of the lime industry appears to be based on a lack of understanding of the configuration and operation of many lime plants and a misapprehension of the intent and application of the NLA Protocol. For some lime plants that aggregate product, actual data is collected for all kilns combined. Requiring a kiln-specific emissions calculation methodology will not improve the accuracy of data because plants would

need to incorporate default values instead of relying on actual data. We propose that 40 C.F.R. 98.193(b) be made identical to the cement reporting provision by stating that: “If you do not operate and maintain a CEMS...you shall calculate CO₂ process emissions based on the production of each type of lime and calcined byproducts/wastes produced all kilns combined according to the procedures in paragraphs (b)(1) through (4) of this section.” The NLA Protocol facilitates accurate emission estimates by requesting reporting companies to use as much site-specific data as possible. The NLA Protocol uses the same equation to separately calculate CO₂ process emissions from each type of lime, byproducts, and wastes. The results of each calculation are then summed together to determine facility process emissions. Lime plants determine process emissions by determining the amount of lime product or byproduct/waste produced and then applying an emissions factor based on the measured oxide content of the material. When typical lime plant data is used to calculate emissions using both the NLA Protocol and the Proposed Rule methods (Equations S-1, S-2 and S-3), the Proposed Rule method understates emissions by approximately four percent compared to the NLA Protocol method. This is due largely to the byproduct/waste correction factor calculation (Equation S-2) and the default correction factor for the proportion of hydrated lime (Equation S3). Considering the more accurate nature of the NLA Protocol and the industry’s familiarity with the Protocol’s requirements, the Proposed Rule should incorporate the emission calculation methods used in the NLA Protocol. Incorporating the NLA Protocol would allow lime plants to continue using established methodologies that result in the most accurate characterization of emissions from their facilities. It would also fully utilize the numerous efforts and improvements that have been made throughout industry to implement best management practices for compiling accurate greenhouse gas reports. LWB proposes to replace Equations S-2 and S-3 with those provided in Attachment 1 [see DCN:EPA-HQ-OAR-2008-0508-0719.1]. If EPA accepts NLA’s proposed equations, then 40 C.F.R. 98.1 97(a)(5) should be deleted because there will be no need to apply a correction factor. Calculating CO₂ Process Emissions from Lime: Revise 40 C.F.R. 98.193(b) to state that if a facility does not have a continuous emissions monitor system, then it is required to calculate CO₂ process emissions for each type of lime and calcined byproducts/wastes produced for all kilns combined. Many lime plants aggregate production data across multiple kilns, and measure the oxide content for each lime product. Calculation of process emissions for all kilns combined is consistent with facility-wide Title V air permits and a common industry practice of using bag, truck, and rail scales to measure the amount of lime product sold by the facility. The European Union Emission Trading System Guidelines recognizes that use of mass balance calculations by the lime industry may provide the most accurate estimates of GHG emissions. 40 C.F.R. 98.193(b)(1) should be revised to be consistent with the NLA Protocol by stating: “You must calculate a monthly emission factor for each type of lime produced using Equation S-1 of this section”. Equation S-1 should be revised so that the factor “EF” represents the emissions factor for lime type I, metric tons CO₂/metric tons lime.” See Attachment 1 for Proposed S-1 Equation [see DCN:EPA-HQ-OAR-2008-0508-0719.1]. Calculating CO₂ Process Emissions from Byproducts/Wastes: Certain facilities utilize a single dust collector for multiple kilns. In such cases, individual kiln specific data for byproducts/wastes is unavailable. Other lime plants combine LKD from multiple kilns, while others combine multiple products. 40 C.F.R. 98.193(b) should be revised to state that if a facility does not have a continuous emissions monitor system, then it is required to calculate CO₂ process emissions for each type of lime and calcined byproducts/wastes produced for all kilns combined. As discussed previously, CO₂ process emissions for byproducts/wastes not sold should be calculated using a facility generation rate. The Proposed Rule should be revised to follow the NLA Protocol. 40 C.F.R. 98.193(b), Equation S-2 should incorporate the same formula to calculate process emissions from lime. See Attachment 1 for NLA’s Proposed Equation S-2a [see DCN:EPA-HQ-OAR-2008-0508-0719.1].

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 7

Comment: Considering the more accurate nature of the NLA Protocol and the industry's familiarity with the Protocol's requirements, the Proposed Rule should incorporate the emission calculation formulae used in the NLA Protocol because they develop emission factors based on actual oxide measurements of each type of lime and calcined byproduct/waste. Incorporating the NLA Protocol would allow lime plants to continue using established methodologies and to fully utilize the numerous efforts and improvements that have been made throughout the industry to implement best management practices for compiling accurate greenhouse gas reports.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 3

Comment: The Proposed Rule Should be Consistent with Plant Operations and the NLA Protocol by Prescribing Facility-Wide, Not Kiln-Specific, Calculation of Process Emissions for Each Product Sold (40 C.F.R. §§ 98.193 and 98.194). The equations in the Proposed Rule requiring the lime industry to calculate process emissions for each kiln are unnecessarily complex. The NLA Protocol requires lime manufacturing plants to calculate process emissions by: (1) measuring the quantity of each product and calcined byproduct/waste produced and the actual oxide content of the material; (2) developing an appropriate emission factor for each product/calcined byproduct/waste; and (3) multiplying the quantities of each by an appropriate emission factor. The NLA Protocol uses the same equation to separately calculate CO₂ process emissions from each type of lime, calcined byproducts, and wastes. The results of each calculation are then summed together to determine total facility process emissions. This emission calculation methodology facilitates accurate emission estimates because it is based on actual plant data and has been standardized in the NLA Protocol.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 2

Comment: The Preamble to the Proposed Rule states it will follow the NLA CO₂ Emissions Calculation Protocol for the Lime Industry, English Units Version, Revised Feb. 2, 2009” [See Attachment 2 in DCN:EPA-HQ-OAR-2008-0508-0520.1] to calculate process emissions for the lime industry. See 74 Fed. Reg. 16,606, 16,523 (April 10, 2009). However, EPA appears to have misinterpreted important aspects of the Protocol. Throughout Subpart S of the Proposed Rule, EPA requires the lime industry to calculate, monitor, and report CO₂ process emissions for each kiln, instead of facility-wide calculations. The disparate treatment of the lime industry appears to be based on a misapprehension of the intent and application of the NLA Protocol, a lack of understanding of the configuration and operation of many lime plants, and an inaccurate assumption that kiln-specific emissions calculations are more accurate than facility-wide calculations. The NLA Protocol was created in support of NLA’s 2003 commitment to participate in the U.S. Department of Energy’s (“DOE”) Climate VISION Program. NLA’s members agreed to reduce by 8% on an aggregate basis GHG emissions from fuel combustion per ton of lime product between 2002 and 2012. See Letter from Stuart Wolfe, Graymont, and Arline Seeger, NLA, to The Honorable Spencer Abraham, U.S. Department of Energy, June 11, 2003 [See Attachment 3 in DCN:EPA-HQ-OAR-2008-0508-0520.1 to view letter]. DOE’s Climate VISION Program requires the lime industry to report to DOE aggregated industry data regarding energy-related CO₂ emissions/ton of lime (the “energy intensity of lime manufacturing”). [Footnote: Data provided by individual facilities or companies is not disclosed to DOE or any other party, including NLA members, because this information is sensitive business information. Revealing the energy intensity of each kiln would provide competitors with information about the cost structure for each product.] DOE does not require facilities to calculate or report data for each kiln, nor is it essential to collect kiln-specific information. Rather, the Climate VISION “program offers a range of reporting methodologies from stringent direct measurement to simplified calculations using default factors and allows reporters to report using the methodological option they choose.” Preamble to U.S. EPA Proposed Rule on Mandatory Reporting of Greenhouse Gases (“Preamble”), 74 Fed. Reg. 16,448, 16,458 (April 10, 2009). Lime plants are not a series of individual kilns, each one producing a separate product and waste stream. Many lime plants are integrated facilities using multiple kilns to produce one or more products that are collectively conveyed, stored and measured. In general, limestone goes into the kiln and three materials are produced: lime, lime kiln dust, and carbon dioxide. The schematic of a “Typical Lime Plant” [See Attachment 4 of DCN:EPA-HQ-OAR-2008-0508-0520.1 for lime plant schematics] shows how limestone is fed into kilns. Depending on the type(s) of product produced, various types of lime are made by heating limestone (calcium carbonate) to high temperatures. Once the limestone is heated by the combustion of fuel (most lime plants use solid fuels), the limestone (Calcium carbonate “CaCO₃”) is “calcined” into lime (calcium oxide, “CaO”), and carbon dioxide (“CO₂”). Plants that produce dolomitic lime, which contains magnesium oxide, use a different feedstock. Because of the high temperatures required, calcining is an energy intensive process. Lime typically leaves the kilns via a common cross-over belt that carries the lime product to a common sizing and storage silo. The “Typical Lime Plant” [See Attachment 4 of DCN:EPA-HQ-OAR-2008-0508-0520.1 for lime plant schematics] illustrates how lime product from multiple lime kilns is combined into a single handling and storage system. Because customers purchase a specific level of reactivity, lime plants determine the oxide content of the lime products. Lime plants account for their inventory and verify sales by weighing the amount of product being sold. Lime is shipped via rail, truck or barge. Lime is loaded into trucks and rail cars and weighed with scales that are calibrated annually in accordance with the National Institute of Standards and Technology (“NIST”) guidelines and state consumer protection laws. State departments of transportation enforce the accuracy of truck and rail weight measurements within specified standards. For lime shipped by barge, the material is either loaded into rail cars for weight, or loaded directly into barges that use certified vessel-

specific displacement tables to measure the lime loaded. To calculate annual lime sales from a given plant, the owner or operator will reconcile the total amount of lime sold in a given year with physical measurements of lime product stored in storage facilities at the beginning and end of the year to account for lime produced, but not yet sold. The lime manufacturing process also generates calcined byproducts and wastes, e.g., lime kiln dust (“LKD”), off-spec lime, and scrubber sludge. LKD from one or more kilns is captured in one or more baghouses, depending on the plant configuration. Calcined byproduct LKD is sold “as is” or mixed with lime products and handled, stored, and shipped in the same manner as lime. Unsold LKD, unsold off-spec lime, and scrubber sludge generated at the facility are disposed. To support a mandatory emissions reporting program designed to report direct measurements of greenhouse gases emitted from facilities, the NLA Protocol can and should be used to determine and report facility-wide emissions based on actual measurements. A cursory review of the NLA Protocol may suggest that all NLA members are providing kiln-specific information. However, plant configuration and operation that results in use of multiple kilns to make a single product that is aggregated into a single handling and storage system necessitates the development of facility-wide data for each type of lime product/calcined byproduct/waste. Similarly, some lime plants have a single dust collection system for multiple kilns, making it extremely difficult to estimate the amount of product and calcined byproduct produced at an individual kiln. Finally, lime plants determine the oxide content of each type of lime and calcined byproducts sold, regardless of which kiln generated the material. The lack of kiln-specific production and oxide content data requires many lime manufacturers to collect data for all kilns combined and then allocate data across all kilns in order to report a “per kiln” value on the spreadsheet, which may not represent direct per-kiln measurements, as required by the Proposed Rule. The allocation may be based on stone input, hours of operation and/or other plant-specific information and conditions. The integrated nature of lime plants and the NLA Protocol’s reliance on actual data from multiple kilns at the facility support NLA’s comment that lime plants can provide more accurate process emissions calculations if the lime industry is permitted to report process emissions for all kilns combined. This is consistent with the Rule’s objective to collect emissions information on a facility level and also with EPA’s treatment of the cement industry, which is permitted to report greenhouse gases emissions for “all kilns combined.” See Preamble, 74 Fed. Reg. at 16,452; 40 C.F.R. §§ 98.82 and 98.83(b)(1).

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

4. DETAILED GHG EMISSION CALCULATION PROCEDURES/EQUATIONS IN THE RULE

Commenter Name: Kimberly S. Lagomarsino

Commenter Affiliation: Mississippi Lime

Document Control Number: EPA-HQ-OAR-2008-0508-1568

Comment Excerpt Number: 13

Comment: The National Lime Association Protocol outlines the methodology of determining CO₂ process emissions from each type of lime and by-products/wastes produced, and then summing the emissions to obtain total facility emissions. This practice requires calculating an emission factor for each calcined lime type as well as each calcined by-product/waste. As

compared to Equation S-2 in 98.193(b), use of the National Lime Association Protocol to determine by-product/waste process emissions is more precise due to the use of measured values and stoichiometry versus correction factors. Suggestion: Please delete 98.197(a)(5) and revised 98.193(b)(2) to be consistent with the National Lime Association Protocol for determining emissions from calcined byproducts/wastes.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Dean C. DeLorey

Commenter Affiliation: Beet Sugar Development Foundation (BSDF) Environmental Committee

Document Control Number: EPA-HQ-OAR-2008-0508-0559.1

Comment Excerpt Number: 14

Comment: In addition the rules specifically refer to rotary kilns with regard to methods for calculating GHG emissions. The sugar industry uses vertical, not rotary kilns to generate CO₂ and CaO. . Methods for reporting emissions from vertical kilns must be described.

Response: The definition for lime manufacturing plants has been updated to be similar to the Lime NESHAP which defines all kiln types used in lime manufacturing. In a similar fashion, calculations can be carried out for all lime manufacturing kiln types (including rotary and vertical kilns) in the final rule. For further explanation, a response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Dean C. DeLorey

Commenter Affiliation: Beet Sugar Development Foundation (BSDF) Environmental Committee

Document Control Number: EPA-HQ-OAR-2008-0508-0559.1

Comment Excerpt Number: 13

Comment: The U.S. sugar beet processing industry has used lime kilns for over 100 years to generate carbon dioxide (CO₂) and calcium oxide (CaO) for juice purification. The CO₂ and CaO are recombined in the purification process. Reporters should be allowed to take credit for capture of CO₂ during purification.

Response: See the response to comment EPA-HQ-OAR-2008-0508-0907.1, comment excerpt 1.

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 10

Comment: 40 C.F.R. § 98.193(b)(3), Equation S-3 applies factors which make the actual values less significant which underestimate emissions. The NLA Protocol requires lime plants to use actual plant data to calculate total facility process emissions by summing together the results of

each separate CO₂ process emission calculation from each type of lime, calcined byproduct, and waste. The Proposed Rule should be revised to follow the NLA Protocol. 40 C.F.R. § 98.193(b)(3) should be revised to be consistent with facility-wide reporting and the NLA Protocol by stating: “You must calculate annual CO₂ process emission for all kilns combined using Equation S-3 of this section.” 40 C.F.R. § 98.193(b)(3), Equation S-3 should be revised to follow the NLA Protocol. [See Attachment 1 of DCN:EPA-HQ-OAR-2008-0508-0520.1 for NLA’s Proposed Equation S-3.] When comparing the calculation of the process emissions for a typical lime plant using both the NLA Protocol and the Proposed Rule methods (Equations S-1, S-2 and S-3), the Proposed Rule method understates emissions by approximately four percent compared to the NLA Protocol method because the Proposed Rule’s Equations use factors other than measured values. [Footnote: Equations S-2 and S-3 in the Proposed Rule appear to be adapted from the emissions calculation method adopted by the Intergovernmental Panel on Climate Change (IPCC) (Preamble, 74 Fed. Reg. at 16,523). The IPCC method, which is based on international lime production, places less emphasis on actual plant-specific data and, therefore, can underestimate emissions. The NLA equations, in contrast, are based on American lime production, and place more emphasis on plant-specific data.] Because many lime plants obtain actual and more accurate data regarding the amount and chemical composition of lime and calcined byproduct generated on a product, not kiln-by-kiln, basis, the Proposed Rule should be revised to reflect the need for facility-wide process emissions calculations for each type of lime and calcined byproduct/waste generated at all kilns combined. NLA proposes that 40 C.F.R. § 98.193(b) be revised to state that: “If you do not operate and maintain a CEMS...you shall calculate CO₂ process emissions based on the production of each type of lime and calcined byproducts/wastes produced at all kilns combined according to the procedures in paragraphs (b)(1) through (4) of this section.” Calculation of process emissions for all kilns combined is consistent with the NLA Protocol.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 9

Comment: The NLA Protocol uses the same equation to separately calculate CO₂ process emissions from each type of lime, calcined byproduct, and waste. The results of each calculation are then summed together to determine total facility process emissions. Therefore, the equation to calculate the monthly emission factor for each calcined byproduct and waste should incorporate the same formula to calculate the monthly emissions factor for lime. The Proposed Rule should be revised to follow the NLA Protocol. 40 C.F.R. § 98.193(b)(2) should be revised to state “You must calculate a monthly emission factor for each type of calcined byproduct/waste sold and calculate an annual emission factor for calcined byproducts/wastes not sold using Equation S-2 of this section.” 40 C.F.R. § 98.193(b)(2), Equation S-2 should be revised to incorporate the same formula to calculate process emissions from lime. [See Attachment 1 of DCN:EPA-HQ-OAR-2008-0508-0520.1 for NLA’s Proposed Equation S-2.] NLA’s proposed S-2 Equation is more accurate than the Proposed Rule’s byproducts/waste equation (40 C.F.R. § 98.193(b)(2), Equation S-2). Emissions calculations made using the NLA Protocol are more accurate because those formulae use only measured values and stoichiometry. The Proposed Rule’s Equation S-2 requires the calculation of a “correction factor” and, therefore, does not rely

exclusively on actual facility data. If NLA's proposed S-2 Equation is accepted, then 40 C.F.R. § 98.197(a)(5) should be deleted because there will be no need to apply a correction factor.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 8

Comment: The NLA Protocol facilitates accurate emission estimates by requesting reporting companies to use as much site-specific data as possible. 40 C.F.R. § 98.193(b)(1), Equation S-1 generally follows the NLA Protocol, which requires the use of actual oxide measurements of each lime type to develop an emission factor. However, Equation S-1 in the Proposed Rule also requires sources to develop kiln-specific emissions factors for each type of lime produced. This deviates from the Protocol's requirement of an emissions factor for each lime type. The configuration of many lime plants precludes direct measurements of the quantity and oxide content of lime produced at each kiln. 40 C.F.R. § 98.193(b)(1) should be revised to be consistent with the NLA Protocol by stating: "You must calculate an emission factor for each type of lime produced using Equation S-1 of this section." 40 C.F.R. § 193(b)(1), Equation S-1 should be revised so that the factor "EF" represents the emissions factor for lime type I, CO₂/lime." [See Attachment 1 of DCN:EPA-HQ-OAR-2008-0508-0520.1 for NLA's Proposed S-1 Equation.] Use of an emission factor for each lime type is consistent with the NLA Protocol.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

5. MONITORING AND QA/QC REQUIREMENTS

Commenter Name: Kimberly S. Lagomarsino

Commenter Affiliation: Mississippi Lime

Document Control Number: EPA-HQ-OAR-2008-0508-1568

Comment Excerpt Number: 18

Comment: 1) 40 CFR 98.194(b) requires lime plants to determine the oxide content (calcium oxide and magnesium oxide) "of each type of lime and each type of calcined by-product/waste produced from each lime type by an off-site laboratory analysis on a monthly basis." Suggestion: Mississippi Lime Company concurs with EPA's approach to determine the oxide content of each type of lime on a monthly basis, as this methodology is consistent with lime manufacturing practices that use multiple kilns for production of a single lime product. However, we believe that monthly measurement of oxides in byproducts/wastes is unnecessary given the fact that byproducts/wastes contribute a relatively small portion of total plant emissions. Please revise 98.194(b) to allow for the annual measurement of oxides in byproducts/wastes of each type of lime. 2) 40 CFR 98.194(c) requires the use of "the most recent analysis of calcium oxide and magnesium oxide content of each type of lime product in monthly calculations." As multiple

product samples are collected and analyzed over a given month, utilizing only the "most recent" analysis would present an unrepresentative picture of oxide content. Suggestion: Please revise 98.194(c) to permit facilities to collect CaO and MgO data during the same month as the production data so that the facilities can run multiple tests and then average the values for more representative data. 3) 40 CFR 98.194(b) requires lime manufacturing facilities to exclusively use off-site laboratories to determine the chemical composition (percent total CaO and percent total MgO) of each type of lime and each type of calcined by-product/waste produced. Mississippi Lime Company believes this requirement to be overly restrictive, in that it does not permit utilization of on-site laboratories located at lime plants that meet the necessary testing requirements to perform the required analysis. In addition, most other industrial sources are permitted to utilize laboratories located at their facilities (e.g., 40 CFR 98.294(b)) and the use of on-site plant labs is consistent with the National Lime Association Protocol and industry practice. Suggestion: Please revise 98.194(b) allow determination of the "chemical composition (percent total CaO and percent total MgO) of each type of lime and each type of calcined byproduct/waste produced from each lime type by laboratory analysis on a monthly basis."

Response: We agree with the commenter and have revised the rule in response to these comments. We believe that these changes will not change the accuracy of the reported emissions. Specifically, we have revised the rule in 98.193 "Calculating GHG emissions" and 98.194 "Monitoring and QA/QC" to allow facilities to make annual measurement of oxides in byproducts/wastes of each type of lime product *not sold*. In addition, we have revised the rule and allow facilities to collect CaO and MgO data during the same month as production data to allow multiple tests to be run and average values to be used in calculations.

Finally, we have revised the rule to allow flexibility in using on site or offsite laboratories. A complete response to this comment has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 16

Comment: 40 C.F.R. 98.194(c) requires the use of the most recent analysis of calcium oxide and magnesium oxide content of each type of lime produced in monthly calculations. LWB believes that this requirement will not yield representative data. Lime plants should be permitted to collect CaO and MgO data during the same month as production data so that lime plants may test multiple samples and then average the values so that the data is more representative. Therefore, 40 C.F.R. 98.194(c) should be revised to state: "You must use the analysis of calcium oxide and magnesium oxide content of each lime product collected during the same month as the production data in monthly calculations."

Response: See the response to comment EPA-HQ-OAR-2008-0508-1568, excerpt 18.

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 15

Comment: LWB interprets the Proposed Rule as requiring measurement of the oxide content for each type of lime and byproduct/waste produced. LWB agrees that oxide sampling should be performed for each product type because it is consistent with some lime manufacturing operations that use multiple kilns to produce a single product. However, LWB believes that monthly oxide measurements of byproducts/wastes are unnecessary because byproducts/wastes contribute a relatively small portion of total plant emissions. LWB proposes that 40 C.F.R. 98.194(b) be revised to allow annual measurement of oxides in byproduct/waste.

Response: See the response to comment EPA-HQ-OAR-2008-0508-1568, excerpt 18.

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 14

Comment: 40 C.F.R. 98.194(b) requires lime plants to measure monthly the oxide content of each type of lime and byproduct/waste using ASTM C25- 06 and the NLA Protocol. 40 C.F.R. 98.194(b) should also be revised to permit lime plants to use either ASTM method C25-06 or the NLA Protocol to determine the oxide content of lime product or byproducts/wastes. While ASTM C25-06 is widely used to calculate oxide content, some plants follow the NLA Protocol to use other sampling methods such as x-ray fluorescent. The suggested change will allow more flexibility in determining the oxide content with no decrease in data quality. If EPA accepts LWB's comment to separately calculate facility-wide emissions from scrubber sludge, then the Proposed Rule should likewise be revised to include annual measurement of oxides in scrubber sludge using either ASTM C25-06 or the NLA Protocol. 40 C.F.R. 98.194(b) should be revised to state that lime plants can use either ASTM or the NLA Protocol to measure oxide content.

Response: We revised the final rule language to allow either ASTM method or the NLA Protocol to measure oxide content. For the purposes of this rulemaking, we believe that both methods will provide comparable results for these parameters.

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 13

Comment: The Proposed Rule unreasonably restricts lime plants to use off-site commercial laboratories to measure the oxide content of each sample. 40 C.F.R. 98.194(b). There is no reason to require lime plants to send all samples off-site, while other industrial sources are permitted to use on- or off-site laboratories. See e.g., Monitoring and QA/QC requirements for Soda Ash at 40 C.F.R. 98.294(b). Like other industries, lime plants have adequate laboratories that routinely conduct these tests and meet specified sampling and testing requirements, as required by the NLA protocol. LWB believes the requirement for the lime industry to use only off-site commercial laboratories is based on a misstatement by a U.S. Geological Survey employee to an EPA contractor. The USGS employee acknowledges that "Commercial lime plants normally have onsite lab facilities to allow the quality control checks necessary to produce

quicklime and hydrate that meets their product specifications.” See RE: email From Mike Miller (USGS) to Arline Seeger (NLA), dated April 20, 2009. In fact, use of an on-site lab may improve data quality. For example, samples sent off-site have an increased risk of testing delay or transportation problems. Because of the propensity of calcium oxide to hydrate, transportation or testing delays could bias the CaO and MgO content downward, which could underestimate emissions. The added expense associated with using an off-site laboratory may also minimize the number of samples. Use of on-site laboratories may result in more frequent sampling, a better data set, and more accurate emissions data.

Response: See the response to comment EPA-HQ-OAR-2008-0508-1568, excerpt 18.

Commenter Name: Kimberly S. Lagomarsino

Commenter Affiliation: Mississippi Lime

Document Control Number: EPA-HQ-OAR-2008-0508-1568

Comment Excerpt Number: 12

Comment: FR 98.194(a) requires lime manufacturers to "determine the quantity of each type of lime produced at each kiln and the quantity of each type of calcined by-product/waste produced for each lime type...at the kiln on a monthly basis." However, as in the cement industry, the lime industry rarely directly measures the amount of lime and byproducts/wastes produced on a kiln-by-kiln basis. Traditionally, lime produced from multiple kilns is conveyed to crushing and screening processes for segregation and storage in separate product silos. Partially calcined limestone and coal ash ring from multiple kilns are routed to waste conveyors and then into bins as waste material. In addition, the use of direct weighing devices such as weigh hoppers and belt weigh feeders, referenced in 98.194(a), are not the most accurate means of measuring lime and by-products/wastes produced. Thus, these devices are not commonly utilized for measuring lime and by-products/wastes, as are the more accurately calibrated bag, truck, and rail scales used to quantify lime products sold to customers. In addition, lime kiln dust, the largest lime by-product/waste generated from Mississippi Lime Company's lime production activities, is removed from baghouse dust collectors by screw conveyors and then pneumatically transferred to silos for storage and commercial sale. This product is often useful for engineering applications and soil stabilization; however, direct measurement of pneumatic transfer is not feasible. Thus, salable lime kiln dust is weighed on calibrated truck scales used to quantify the material sold to customers. Such aforementioned scales are very accurate because they are calibrated annually in accordance with NIST guidelines and state consumer protection laws as well as Department of Agriculture requirements. Therefore, these scales are utilized to directly measure lime and by-products/wastes sold to customers. The sales figures are then used to determine total lime produced annually by cross-checking scale readings against physical inventories in material storage bins/silos at the beginning and end of each calendar year. Additionally, lime and by-products/wastes from multiple kilns are aggregated in common handling and storage equipment prior to placement in bags, trucks, or railcars for measurement and sale. Therefore, as with the cement industry, direct measurements of lime and by-products/wastes produced need to be aggregated for all kilns combined at a facility. Suggestion: Please revise 98.194(a) to read "the quantity of lime types and LKD produced monthly at a facility must be determined by direct weight measurement using the same plant instruments used for accounting purposes, such as weigh hoppers, or belt feeders, or bag, truck, or rail scales." Such direct measurements shall be reconciled with physical inventories on an annual basis. This proposed reporting methodology is consistent with annual emission inventory reports submitted to federal, state, and local environmental regulatory agencies by Mississippi Lime Company.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 11

Comment: Byproducts and wastes, such as LKD, are collected in baghouses. LKD generated during the production process is captured by baghouses and sent by conveyor to a tank or bag/truck/rail car. LKD that is sold or mixed with a lime product is eventually measured in bag, truck, or rail scales or barges before it is shipped to the customer. However, LKD and wastes not sold are typically disposed in a land disposal unit. Because of the nature of LKD, belt weigh feeders are not appropriate devices to measure fine particle byproducts, such as LKD and wastes. Therefore, the methodology to quantify the amount of byproducts and wastes produced should reflect these differences. Proposed Rule For Method to Quantify the Amount of Byproduct/Waste Produced, 40 C.F.R. 98.194(a) should be revised to state: “The annual quantity of each byproduct/waste sold should be directly measured with either the same instruments used for accounting purposes, such as weigh feeders, and bag, rail or truck scales or barge measurements for byproduct sales, and a byproduct generation rate to measure those byproducts/waste that are not sold.” The largest volume byproduct generated at a lime plant is LKD, which is a very fine material. A large portion of LKD is sold, while the remainder is waste. LKD that is sold is typically conveyed pneumatically to a storage silo, which would not allow for the use of an in-line weighing device. As previously discussed, it would be very difficult to incorporate a new horizontal belt weigh feeder into an existing dust collection system. Even if belt weigh feeders or hoppers could be added to the facility, they cannot effectively measure the amount of LKD generated. LKD is a fine-grained material that will “flow” off a belt and could get caught in the belt’s mechanics, thereby affecting the calibration of the weigh device. Lime plants should be allowed to use bag, truck, and rail scales to measure the amount of LKD sold because they more accurately measure the quantity of byproducts sold than weigh feeders. For byproducts and waste not sold, many lime plants use a material balance approach that measures the stone used in comparison to the lime produced to indirectly measure the quantity of byproducts/wastes generated. The Proposed Rule should be consistent with industry practice to allow lime plants to use a generation rate to measure the byproducts/waste not sold.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 10

Comment: The Rule should be revised to permit measurement of lime from all kilns combined. The Rule should specify that measurements made by barges or bag, truck, and rail scales are acceptable measurement devices. However, not all lime produced in a year is measured and shipped during that same year. Therefore, lime plants should be required to annually cross-check

the measurements taken by bag/rail/truck scale of lime stored in silos at the beginning and end of each year. This will enable lime plants to account for lime produced, but not weighed and shipped.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 9

Comment: Measuring Lime and Byproducts/Waste Produced: The ability to accurately calculate process emissions using the NLA Protocol is highly dependent on the ability to measure the amount of lime and byproducts generated at the facility. The Proposed Rule fails to take into account how lime manufacturing plants measure their lime products and byproducts/wastes. The Proposed Rule should be revised to specify other types of measurement devices commonly used in the lime industry to more accurately measure lime and byproducts/wastes. EPA's proposed rule requires lime manufacturers to determine monthly the quantity of each type of lime and each type of byproduct produced at each kiln using direct weigh measurements such as weigh hoppers and belt weigh feeders. See 40 C.F.R. 98.194(a). Specifying the use of weigh hoppers and belt weigh feeders may not be appropriate for all lime plants, as they are not present and cannot be installed at all kilns. Common industry practice also includes the use of bag, truck and rail scales, which are as or more accurate than weigh hoppers and belt weigh feeders. As currently written, the Proposed Rule requires "direct measurements" of lime produced. To insure that lime plants can provide these measurements, the Proposed Rule should be revised to add that bag, truck, and rail scales can be used to directly measure the amount of lime sold by the facility. The central accounting mechanism for many lime plants is measuring the amount of material shipped. Lime from multiple kilns is often collected in a single silo, where it is stored until it is placed in bags, trucks or rail cars for shipment. Because it is vital that lime plants accurately weigh the material their customers will receive, bags, truck and rail cars are weighed with scales that are calibrated annually in accordance with NIST guidelines. Bag, truck and rail scales are also regulated by state consumer protection laws and state transportation regulations, which require the shipments to be accurate. If the Proposed Rule does not permit the use of bag, truck, and rail scales to measure product from all kilns combined, then lime plants will be required to add belt weigh feeders. Belt weigh feeders are reliable when in a horizontal position. It is impractical to retrofit many facilities with belt weigh feeders due to the physical characteristics and orientation of existing plant machinery and infrastructure. Reconfiguration of existing facility equipment and infrastructure to accommodate horizontal belt weigh feeders could easily require multi-million dollar expense with no gain in measurement accuracy. This is particularly true where there are multiple kilns, multiple fuels, and more than one quality of stone fed into the system. In addition, the accuracy and availability of belts and hoppers can be significantly impacted by the harsh operating environments (extreme heat for example), in the lime manufacturing plant production areas. The Proposed Rule should also be revised to refer more generally to "weigh feeders" because the term incorporates numerous measurement devices, including belts and hoppers. For Quantification of Lime, 40 C.F.R. 98.194(a) should be replaced with the following with regards to lime (the suggested language for LKD is discussed separately): "Determine the quantity of each product type of lime for all kilns combined. The quantity of each product type of lime sold should be directly measured monthly with the same instruments used for accounting purposes,

such as weigh feeders, bag, rail or truck scales and barge measurements. These direct measurements shall be reconciled annually with the difference in the beginning and end of year inventories for these products.” The Proposed Rule should allow direct measurement of lime product using bag, truck, and rail scales because these devices are consistent with how the lime industry accounts for its lime production. As stated previously, it would be very difficult to retrofit weigh belts into an existing plant. Reconfiguration of existing facility equipment and infrastructure to accommodate horizontal belt weigh feeders could easily require multi-million dollar expense with no gain in measurement accuracy. This is particularly true where there are multiple kilns, multiple fuels, and more than one quality of stone fed into the system.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 11

Comment: The NLA Protocol and the Proposed Rule require lime plants to determine the oxide content of each type of lime and calcined byproduct/waste produced. NLA has four comments on the Proposed Rule’s procedures for measuring oxide content: (1) the lime industry should not have a different requirement than other sectors to use only off-site laboratories when many lime plants have facilities that can complete the sampling and analysis required by this Rule; (2) lime plants should be permitted to use either ASTM method C25-06 or the NLA Protocol to determine the oxide content of the materials; (3) it is sufficient to require annual measurement of the oxide content in calcined byproducts/wastes not sold; and (4) permit lime plants to use CaO and MgO data collected during the same month as production data. To address each of these concerns, NLA proposes the following revision to 40 C.F.R. § 98.194(b). Our rationale for each proposed change is provided below: “You must determine the chemical composition (percent total CaO and percent total MgO) of each type of lime and each type of calcined byproduct/waste produced and sold by laboratory analysis on a monthly basis, and determine the chemical composition (percent total CaO and percent total MgO) for each type of calcined byproduct/waste that is not sold at least annually. This determination must be performed according to the requirements of ASTM C25-06, “Standard Test Methods for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime” (incorporated by reference – see 98.7) or the procedures in ‘CO₂ Emissions Calculation Protocol for the Lime Industry English Units Version’, February 5, 2008 (incorporated by reference – see 98.7).” 40 C.F.R. § 98.194(c) should be revised to state: “You must use the analysis of calcium oxide and magnesium oxide content of each lime product collected during the same month as the production data in monthly calculations.” 1. Like Most Source Categories, Lime Plants Should Be Permitted to Use Their Own Laboratories To Determine Oxide Content (40 C.F.R. § 98.194(b)). The Proposed Rule unreasonably restricts lime plants to use off-site commercial laboratories to measure the oxide content of each sample. 40 C.F.R. § 98.194(b). There is no reason to require lime plants to send all samples off-site, while most other industrial sources do not have this restriction. See e.g., Monitoring and QA/QC requirements for Soda Ash at 40 C.F.R. § 98.294(b). Like other industries, lime plants have laboratories that routinely conduct these tests and meet specified sampling and testing requirements, as required by the NLA Protocol. NLA believes the requirement for the lime industry to use only off-site commercial laboratories is based on a misstatement by a U.S. Geological Survey employee to an EPA contractor. The USGS employee

later acknowledged that “Commercial lime plants normally have onsite lab facilities to allow the quality control checks necessary to produce quicklime and hydrate that meets their product specifications.” See Email exchanges between Emily Coyner, NLA, and Tristan Kessler, ICF International dated April 20 and 21, 2009, and email exchange between M. Michael Miller, U.S.G.S. and Arline Seeger, NLA dated April 20, 2009 [See Attachment 5 of DCN:EPA-HQ-OAR-2008-0508-0520.1 for email exchanges]. Furthermore, few, if any, environmental programs or laws mandate the use of only off-site laboratory analysis. In fact, use of an on-site lab may improve data quality. For example, samples sent off-site have an increased risk of testing delay or transportation problems. Because of the propensity of calcium oxide to hydrate, transportation or testing delays could bias the CaO and MgO content downward, which could underestimate emissions. The added expense associated with using an off-site laboratory may also minimize the number of samples taken. In contrast, use of on-site laboratories may result in more frequent sampling (which increases representativeness of the results), averaging of multiple test results, and more accurate emissions data. As shown above, NLA requests that the reference to an “off-site” laboratory be deleted so that lime plants can choose to use on-site or off-site facilities.

2. Lime Plants Should Be Permitted to Use Acceptable Standardized Laboratory Procedures for Analyzing Oxide Content (40 C.F.R. § 98.194(b)). 40 C.F.R. § 98.194(b) requires lime plants to measure monthly the oxide content of each type of lime and calcined byproduct/waste using ASTM C25-06 and the NLA Protocol. 40 C.F.R. § 98.194(b) should be revised to permit lime plants to use either ASTM method C25-06 or the NLA Protocol. While ASTM C25-06 is widely used to calculate oxide content, some plants use other sampling methods specified in the NLA Protocol such as x-ray fluorescence. The suggested change will allow more flexibility in determining the oxide content with no decrease in data quality. As shown above, 40 C.F.R. § 98.194(b) should be revised to state that lime plants can use either ASTM method C25-06 or the NLA Protocol to measure oxide content.

3. Annual Oxide Sampling of Calcined Byproducts Is Sufficient Given That Calcined Byproducts Contribute Approximately 5% of Overall Lime Plant Emissions (40 C.F.R. § 98.194(b)). NLA interprets the Proposed Rule as requiring measurement of the oxide content for each type of lime and calcined byproduct/waste produced. NLA agrees that oxide sampling should be performed for each product type because it is consistent with some lime manufacturing operations that use multiple kilns to produce a single product. However, NLA believes that monthly oxide measurements of calcined byproducts/wastes not sold are unnecessary because calcined byproducts/wastes contribute a relatively small portion (about 5%) of total plant emissions. As indicated above, 40 C.F.R. § 98.194(b) be revised to allow monthly or annual measurement of oxides in each type of calcined byproduct/waste not sold.

4. The Proposed Rule Should Encourage Lime Plants to Perform Multiple Tests to Determine the Oxide Content (40 C.F.R. § 98.194(c)). 40 C.F.R. § 98.194(c) requires the use of the most recent analysis of calcium oxide and magnesium oxide content of each type of lime produced in monthly calculations. NLA believes that this requirement will not yield representative data and will limit data available for use to the last test performed during the month. Lime plants should be permitted to collect CaO and MgO data during the same month as production data so that lime plants may test multiple samples and then average the values so that the data is more representative.

Response: See the responses to comment EPA-HQ-OAR-2008-0508-1568, excerpt 18 and comment EPA-HQ-OAR-2008-0508-0719.1, excerpt 14.

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 6

Comment: The Lime Industry Uses a Generation Rate to Annually Quantify the Amount of Unsold Calcined Byproducts and Wastes (40 C.F.R. § 98.194(a)). Calcined byproducts (e.g., LKD) and wastes (e.g., scrubber sludge) not sold are typically disposed in a land disposal unit. Because of the nature of LKD and scrubber sludge, belt weigh feeders are not always appropriate devices to measure such fine particle calcined byproducts or liquid wastes. Therefore, the methodology to quantify the amount of calcined byproducts and wastes produced should be appropriate for all operations. Because calcined byproducts/wastes represent less than 5 percent of the total GHG emissions from a lime plant, annual quantification of calcined byproduct and wastes generated at a facility, using a generation rate (i.e., calcined byproduct to lime ratio) is appropriate. Proposed Rule For Method to Quantify the Amount of Calcined Byproduct/Waste Produced, 40 C.F.R. § 98.194(a) should be revised to state: “The quantity of each calcined byproduct/waste generated by all kilns combined, but not sold, may be determined annually by either direct measurement using the same instruments identified in this section or by using a calcined byproduct/waste generation rate.” The use of a generation rate to measure each calcined byproduct/waste not sold is consistent with the NLA Protocol and industry practice.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 5

Comment: The Lime Industry Uses Truck and Rail Car Scales and Barge Measurements To Measure the Quantity of Product and Calcined Byproducts Sold from All Kilns Combined (40 C.F.R. § 98.194(a)). EPA’s proposed rule requires lime manufacturers to determine monthly the quantity of each type of lime and each type of calcined byproduct produced at each kiln using direct weigh measurements such as weigh hoppers and belt weigh feeders. See 40 C.F.R. § 98.194(a). The Proposed Rule should be revised to permit the use of additional direct measurement devices currently in use by the lime industry. The central accounting mechanism for many lime plants is measuring the amount of each type of lime and calcined byproduct sold, regardless of which kiln produced the material. Each lime product and calcined byproduct is typically handled and stored in a common system, regardless of which kiln generated the product. Common industry practice is to account for lime and calcined byproduct sold by using truck and rail scales and barge measurements, which are as or more accurate than weigh hoppers and belt weigh feeders. As shown on the schematic of a Typical Lime Plants [See Attachment 4 of DCN:EPA-HQ-OAR-2008-0508-0520.1 for lime plant schematics], lime from multiple kilns is often collected in a single silo, where it is stored until it is placed in trucks or rail cars for shipment. Because it is vital that lime plants accurately weigh the material their customers will receive, truck and rail cars are weighed with scales that are calibrated annually and regulated by state and federal laws and regulations. Barges have certified vessel-specific displacement tables that accurately measure the lime and any calcined byproduct loaded. The Proposed Rule should be revised to allow the use of truck and rail scales or barges. In addition, not all lime produced in a year is measured and sold during that same year. Therefore, lime plants should be required to annually cross-check the measurements taken by rail/truck scale or barge readings with physical measurements of lime stored in silos at the beginning and end of each year, when measurements

represent lime sold. This will enable lime plants to account for lime produced, but not weighed and sold, during a given year. Use of weigh hoppers and belt weigh feeders may not be appropriate for all lime plants, as they are not present and cannot and should not be installed at all kilns. It will be impractical to weigh lime by retrofitting many facilities with belt weigh feeders due to the physical characteristics and orientation of existing plant machinery and infrastructure. Reconfiguration of existing facility equipment and infrastructure to accommodate belt weigh feeders could easily require multi-million dollar expense with no gain in measurement accuracy. See Schematic of the Typical Lime Plant [See Attachment 4 of DCN:EPA-HQ-OAR-2008-0508-0520.1 for lime plant schematics]. In addition, weigh hoppers and belt weigh feeders are not appropriate for all materials generated at a lime plant. The largest volume calcined byproduct generated at a lime plant is LKD, which is a very fine material that is collected in baghouses. Depending on the plant configuration, one baghouse can serve one or more kilns. LKD that is sold or mixed with lime products is conveyed pneumatically to a storage silo and is eventually measured in truck and rail scales or barges before it is shipped to the customer. Lime plants should be allowed to use barges or truck and rail scales to measure the amount of LKD sold, because they are accurate and can measure this type of fine-grained material. Finally, the Rule should be revised to refer more generally to “weigh feeders” because the term incorporates numerous measurement devices, including belts and hoppers. These proposed changes will help ensure that lime plants can provide direct measurements required by the Proposed Rule, 40 C.F.R. § 98.194(a). For Quantification of Lime and Calcined Byproducts Sold, 40 C.F.R. § 98.194(a) should be replaced with the following with regards to lime and calcined byproducts sold: “Determine the quantity of each product type of lime and each calcined byproduct generated by all kilns combined that is sold. The quantity of each product type of lime and calcined byproduct sold should be directly measured monthly with the same instruments used for accounting purposes, including, but not limited to, weigh feeders, rail or truck scales, and barge measurements. The direct measurements of each lime product shall be reconciled annually with the difference in the beginning and end of year inventories for these products, when measurements represent lime sold.”

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 4

Comment: The ability to accurately calculate process emissions using the NLA Protocol is highly dependent on the ability to measure the amount of lime and calcined byproducts generated at the facility. As discussed below, the Proposed Rule fails to take into account how lime manufacturing plants measure and account for lime products and calcined byproducts/wastes. The Proposed Rule should be revised to specify those measurement devices commonly used in the lime industry to more accurately measure lime and calcined byproducts/wastes sold.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

6. DATA REPORTING REQUIREMENTS

Commenter Name: Kimberly S. Lagomarsino

Commenter Affiliation: Mississippi Lime

Document Control Number: EPA-HQ-OAR-2008-0508-1568

Comment Excerpt Number: 21

Comment: The proposed rule is unclear concerning the reporting of process emissions and combustion emissions when both emission types are recorded by a CO₂ CEMS (i.e., Tier 4 methodology). Suggestion: Please clarify 98.196(a)(1) to indicate that sources with CEMS that capture both combustion and process emissions need report only the total CO₂ emissions from the source.

Response: We agree that emissions measured by CEMS can be reported as the total CO₂ emissions, covering process and stationary sources. The final rule language has been modified under 98.193 “Calculating GHG emissions” to allow facilities using CEMS (Tier 4 calculation methodology in Subpart C (General Stationary Combustion)) to report combined process and combustion emissions. We have also revised the final rule under 98.196 to clarify reporting requirements for lime manufacturing facilities using CEMS and for those not using CEMS.

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 21

Comment: According to the Preamble to the Proposed Rule, sources with CEMS capturing both process and combustion emissions that are emitted through a common stack are required to report emissions in accordance with Subpart C, and are not required to separately calculate and report process emissions. See Preamble, 74 Fed. Reg. at 16,479. However, the reporting requirements for lime process emissions in 40 C.F.R. 98.196(a)(1) require sources to report annual CO₂ process emissions. If emissions must be separated for reporting purposes, then a source may need to report Tier IV for total CO₂ measured by CEMS, and provide separate calculation estimates of process and combustion emissions under one of the other tiers. Furthermore, if sources are required to separately report process and combustion emissions, then the Proposed Rule should clarify which calculation method (Tier 1, 2, or 3) is acceptable for combustion emissions. See 40 CFR Part 75, Appendix G. 40 C.F.R. 98.196(a)(1) should be revised to clarify that sources with CEMS that capture both combustion and process emissions need report only the total CO₂ emissions from the source. As EPA indicated during our conference call on May 14, 2009, single reporting for units with CEMS that captures all emissions is reasonable in light of the fact that unit emissions are being calculated in accordance with Tier 4 methodology and furthers the Rule’s objectives of obtaining accurate data on facility-wide CO₂ emissions.

Response: See the response to comment EPA-HQ-OAR-2008-0508-1568, excerpt 21.

Commenter Name: Kimberly S. Lagomarsino

Commenter Affiliation: Mississippi Lime

Document Control Number: EPA-HQ-OAR-2008-0508-1568

Comment Excerpt Number: 19

Comment: Mississippi Lime Company understands the purpose of EPA's proposed rule to be the collection of "economy-wide data on [a] facility-level" of "accurate and timely information on GHG emissions" for use in "informing some future climate change policy decisions [Preamble Section I.E]." To this end, we applaud EPA's endeavors; however, requiring that data be reported on a kiln-specific level does nothing to advance the purpose of the rule. In fact, such data collection and reporting is infeasible for our lime manufacturing facilities. Suggestion: Please revise 98.196 to allow reporting of facility emissions information for all kilns combined.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 17

Comment: 40 C.F.R. 98.196(3)-(5) requires sources to report information about lime production capacity, emission factors, and operating hours and days for each kiln during a calendar year. While LWB agrees that the data should be retained in company records and be available for EPA review, the proposed Rule requires sources to divulge highly sensitive information that would give competitors important information about the efficiency, productivity, and capacity of a kiln and facility. Furthermore, public reporting of the capacity of lime production facilities, emission factors, and hours/days of operation do not further the objective of this GHG reporting rule, which is "to require reporting of annual emissions of carbon dioxide," 74 Fed. Reg. at 16,452. To achieve this objective, the Rule should require "facility-specific data of sufficient quality." Id. at 16,461 40 C.F.R. 98.196(3)-(5) should be deleted and instead require that facility information be retained within company records and be available for EPA review pursuant to 40 C.F.R. 98.197. This is also consistent with the reporting and recordkeeping requirements for the cement industry.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 36

Comment: 40 C.F.R. §§ 98.196(a)(3)-(5) requires sources to report information about lime production capacity, emission factors, and operating hours and days for each kiln during a calendar year. While NLA agrees that the data used to calculate the emission factor data should be retained in company records and be available for EPA review, the requirement for sources to divulge competitive and sensitive information is not prudent because it would give competitors important information about the efficiency, productivity, and capacity of a kiln and facility. For example, if detailed information about production, product quality and fuel use is reported, then competitors will have enough data to determine the efficiency of the kilns and, therefore, the cost

of production. In addition, publicly reporting CaO and MgO content provides critical information about product quality, which could be used by competitors to bid jobs and secure customers. While some lime plants may currently be required to report some of this data in the annual air emission inventories, it is reported on an annual basis. Monthly data provides much more detail regarding kiln efficiency and product quality. Furthermore, public reporting of the capacity of lime production facilities, product quality, monthly emission factors, and hours/days of operation do not further the objective of this GHG reporting rule, which is “to require reporting of annual emissions of carbon dioxide,” 74 Fed. Reg. at 16,452. To achieve this objective, the Rule should require “facility-specific data of sufficient quality” to calculate GHG emissions. 40 C.F.R. §§ 98.196(a)(3)-(5) should be deleted and instead require that emission factor information be retained within company records and be available for EPA review pursuant to 40 C.F.R. 98.197. This is also consistent with the reporting and recordkeeping requirements for the cement industry. Production capacity and operating hours and days are not required for calculation of emissions and should not be required as part of the rule.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 17

Comment: 40 C.F.R. § 98.196(a)(1) should be revised to clarify that sources with CEMS that capture both combustion and process emissions may report total CO₂ emissions from the source. As EPA indicated during a conference call between EPA and NLA staff on May 14, 2009, single reporting for units with CEMS that captures all emissions is reasonable in light of the fact that unit emissions are being calculated in accordance with Tier 4 methodology and furthers the Rule’s objectives of obtaining accurate data on facility-wide CO₂ emissions.

Response: See the response to comment EPA-HQ-OAR-2008-0508-1568, excerpt 21.

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 12

Comment: The Lime Industry Should Be Treated in a Manner Consistent with Other Source Categories that are Permitted to Report Facility Emissions (40 C.F.R. § 98.196). NLA agrees sources should accurately calculate and report annual CO₂ process emissions to develop an accurate GHG registry at a facility-level. However, the requirement that the lime industry report kiln-specific GHG emissions does not further the purpose and intent to develop facility-level data. See 40 C.F.R. § 98.196 (kiln-specific reporting of GHG emissions). Furthermore, the requirement for lime plants to report emissions data on a kiln basis is inconsistent with the requirement that cement facilities, which are similar to lime plants in their use of kilns and configuration, report information for the facility. 40 C.F.R. § 98.86. Common collection, storage, and measurement of lime and calcined byproducts from multiple kilns may preclude accurate per

kiln CO₂ process emissions calculations and reporting. Many of the lime plants that report “per kiln” values as part of NLA’s commitment under DOE’s Climate VISION Program do so by collecting data for all kilns combined and then roughly allocating the emissions among the kilns. While the aggregated data for the facility is based on direct measurement and very accurate, the allocations per kilns are not based on direct measurements as required by the Proposed Rule. 40 C.F.R. § 98.196(a) should be revised to state: In addition to the information required by § 98.3(c), each annual report must contain the information specified in paragraphs (a)(1) through (5) of this section for all kilns combined: This proposal is consistent with the requirement for the cement industry and it satisfies the objective of the Reporting Rule to collect and retain facility-level data.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

7. RECORDS THAT MUST BE RETAINED

Commenter Name: Kimberly S. Lagomarsino

Commenter Affiliation: Mississippi Lime

Document Control Number: EPA-HQ-OAR-2008-0508-1568

Comment Excerpt Number: 20

Comment: 40 CFR 98.197(a) requires lime manufacturing facilities to retain specified records for each kiln. As previously discussed, Mississippi Lime Company is unable to collect such data on a kiln-by-kiln basis. Suggestion: Please revise 98.197(a) to allow the retention of specified records for the facility.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Ron Downey

Commenter Affiliation: LWB Refractories

Document Control Number: EPA-HQ-OAR-2008-0508-0719.1

Comment Excerpt Number: 18

Comment: 40 C.F.R. 98.197(a)(1) requires lime plants to retain annual calcined byproduct/waste data summed up from monthly data. Because some lime manufacturers maintain monthly byproduct/waste data, LWB would like the provision to permit either annual or monthly calcined byproduct/waste data.

Response: See the response provided in section III of the preamble to this rule (see section S, Lime Manufacturing). Byproduct/waste data is required to be reported per month for amounts sold and annual (by generation rate) for quantities not sold.

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 15

Comment: 40 C.F.R. § 98.197(a)(5) requires facilities to retain monthly correction factors for byproducts/wastes for each kiln. If EPA accepts NLA’s proposal to follow the NLA Protocol, then there will be no need to apply a correction factor for byproducts/waste. Therefore, 40 C.F.R. § 98.197(a)(5) should be deleted.

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

Commenter Name: Leslie Bellas

Commenter Affiliation: National Lime Association (NLA)

Document Control Number: EPA-HQ-OAR-2008-0508-0520.1

Comment Excerpt Number: 14

Comment: Document Retention Requirements Should Mirror the Requirements for Facility-Wide Emissions Calculations and Reporting (40 C.F.R. 98.197(a)). If the Proposed Rule is revised to permit the lime industry, like cement, to report emissions for all kilns combined, then 40 C.F.R. 98.197(a) should likewise be revised. See e.g., 40 C.F.R. § 98.87 (cement plants required to retain records for “each Portland cement manufacturing facility.”). The record retention requirements in 40 C.F.R. § 98.3(g) is sufficient to insure that sources retain any kiln-specific data used to calculate and report emissions under this Rule. 40 C.F.R. § 98.197(a) should be revised to provide that “In addition to the records required by § 98.3(g), you must retain the following records specified in paragraphs (a)(1) through (4) of this section for all kilns combined.”

Response: The response has been provided in section III of the preamble to this rule (see section S, Lime Manufacturing).

8. OTHER SUBPART S COMMENTS.

Comment: Generally across the rule, commenters requested clarification on use of standards and in some cases proposed alternative standards for determining particular parameters used to estimate emissions.

Response: For Subpart S, in some cases we have decided to specify a list of specific industry consensus standards (ASTM C25-06 and the National Lime Association (NLA) Protocol) calculation of key parameter (e.g. chemical composition of lime products) and for other parameters we allow greater flexibility such as determination, quantity of feedstock consumption. For these other parameters, EPA has not prescribed specific methods, but provided guidance, requiring that facilities use methods and/or plant instruments used for accounting purposes. In the case of determining total quantity of each product type of lime and each calcined byproduct/waste (such as lime kiln dust) that is sold, there are a variety of industry consensus standards or practices and further some measurement procedures are specific to equipment being used on site at the facility, so we have provided flexibility and guidance on the types of methods to use. Where we have prescribed specific methods, it is because there are few primary applicable methods for determining chemical composition of the lime product. We have

prescribed standards commonly used by industry, such as the NLA Protocol for this determination to minimize burden. For the purposes of this rulemaking, use of these methods ensures consistency in the determination of key parameters and calculated emissions from the lime manufacturing industry.