GRAYMONT COMMENTS ON:
NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS: LIME MANUFACTURING PLANTS AMENDMENTS
89 FED. REG. 9088 (FEB. 9, 2024)

SUBMITTED ELECTRONICALLY TO THE ENVIRONMENTAL PROTECTION AGENCY
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I. Introduction

Graymont appreciates the opportunity to comment on the Environmental Protection Agency's ("EPA") supplemental proposed amendments to the National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants (Docket No. EPA-HQ-OAR-2017-0015) ("Proposed Rule"). Graymont is the second largest lime producer in the United States and currently operates 16 major source kilns in Michigan, Wisconsin, Pennsylvania, Utah, Montana, and Nevada that are subject to the Lime Manufacturing National Emission Standards for Hazardous Air Pollutants ("Lime NESHAP"). Graymont's lime and limestone products are used for purification of air and water, and the production of items essential to a modern economy such as steel, paper, and metals.

Graymont is a member of the National Lime Association ("NLA") and joins with NLA's comments on the Proposed Rule.

II. Executive Summary

Graymont appreciates EPA's reconsideration of a number of technical issues in the 2023 proposal, including the intra-quarry variability factor ("IQVF") for mercury. Graymont is providing additional comment in the following areas:

- **MACT Floor Limits for organic HAP ("oHAP") and Dioxins/Furans ("D/F")**: The data set on which EPA bases the MACT floors is extremely limited and reflects emissions that are so low as to be, in most cases, below the detection limits. The statistical methodology on which EPA relies to set the MACT floor is not adequately justified and does not ensure an "achievable" limit that results in a reduction in HAP.

- **Development of IQVF for Mercury**: Rather than rely on weighted averages of boreholes to establish the IQVF for mercury, EPA should instead utilize the individual samples.

- **Addressing HCl Emissions Variability**: Graymont joins with NLA's request for a health-based emission limit ("HBEL"), supports subcategorization, but requests that EPA provide an option for continuous emissions monitoring in conjunction with a 30-day rolling average limit.

III. The oHAP and D/F MACT Floors are Not Justified as Reasonable Estimates of Emissions Achieved by the Best-Performing Sources

The MACT floor must reflect "[t]he maximum degree of reduction in emissions that is deemed achievable" where the standard is "not less stringent that the emission control that is achieved in practice by the best controlled similar source." 42 U.S.C. § 7412(d)(3). The standard therefore must (1) result in a reduction in emissions, that (2) is achievable in practice. If emissions of individual oHAP and D/F cannot be reasonably quantified in

existing stacks—because of the extremely limited test data combined with repeated instances of emissions that are too low to register in the tests—the resulting MACT floor "do[es] not, as the CAA requires, represent a reasonable estimate of emissions achieved by the best-performing sources." *Cement Kiln Recycling Coalition v. EPA*, 255 F.3d 855, 865 (D.C. Cir. 2001). In this case, EPA has not met its burden of justifying the use of the representative method detection level times three (3X RDL) for the MACT floors for oHAP and D/F.

While EPA may rely on statistical tools such as the UPL method to estimate such MACT floors, courts "have not given EPA free rein in its estimation techniques." *Nat'l Ass'n of Clean Water Agencies v. EPA* (*NACWA*), 734 F.3d 1115, 1131 (D.C. Cir. 2013). Indeed, "[i]f EPA chooses to use statistics as a shortcut for meeting the Congressional mandate to set MACT floors, it must justify its statistical analysis." *Id*. This standard requires EPA to adequately explain how its estimate "reasonably represents the emissions level achieved by the average source." *United States Sugar Corp. v. EPA*, 830 F.3d 579, 637 (D.C. Cir. 2016).

Graymont recognizes that the D.C. Circuit in *NACWA* upheld the use of 3X RDL when incorporating non-detect data in the development of emission limits for certain pollutants emitted by sewage sludge incinerators. 734 F.3d at 1155. But in this case, the test data are even more limited—particularly for D/F. Indeed, the existence of non-detects for D/F in lime kilns is because there are no oHAP available to react with HCl in their formation, even though the right temperature profile exists. Where there are no detectable emissions present, EPA cannot reasonably establish a reduction in emissions that is achievable in practice. EPA's rough estimate of a total 20 ton per year reduction of oHAP is not grounded in reliable methodology and a reduction of D/F of 4.7×10^{-8} tons per year simply equates to 0 tpy. Regulation of these pollutants reflects an exercise in futility.

Moreover, these reductions are based on assumptions that if formaldehyde or acetaldehyde were present at a 3X DL value, these compounds could be removed by active controls such as activated carbon or regenerative thermal oxidizers ("RTOs"). This is a gross overstatement. Activated carbon injection ("ACI") is not effective for formaldehyde or acetaldehyde removal as these compounds will not adsorbed by the ACI at the stack temperatures encountered (>300F). Carbon adsorption of formaldehyde and acetaldehyde is similar chemistry to methane adsorption (i.e., negligible) at these temperatures and extremely low concentrations. Examining the effectiveness of an RTO, as impractical as it sounds, shows it may produce more formaldehyde than it removes, and this is in addition to the CO, NOx, and CO2 it certainly creates and emits from the combustion of natural gas. Moreover, RTOs are prone to emissions from methane slip, a potent greenhouse gas. An RTO is only useful for high concentration/low flowrate sources such as those encountered in the synthetic organic chemical industry. Thus, EPA should decline to set emission standards for oHAP and D/F because they are not practically achievable and are not necessary.

IV. Graymont Comments on EPA's Proposed Standards for Mercury and HCl

A. EPA Should Revise its Methodology for Calculating a Mercury Intra-Quarry Variability Factor

EPA's revised MACT floor limit appropriately reflects an IQVF for mercury ("Hg"), resulting in a new proposed standard of 34 lbs Hg/Mtons lime. Graymont supports the use of an IQVF to reflect variability—but urges EPA to use the 77 individual samples as opposed to weighted averages of boreholes. As discussed below, reliance on a weighted average results in the suppression—and not the expression—of Hg variability, which is the purpose of the IQVF.

The IQVF proposal was based upon the data treatment of stone samples from two MACT floor lime plant quarries. In the case of the Graymont data from the Eden quarry, EPA utilized weighted averages from 5 borehole samples, which consisted of samples taken at six-foot intervals from the surface to 93 feet below ground surface ("bgs").

Graymont's rationale for utilization of weighted averages was to minimize the variability associated with varying sample depths and to prepare the data for inclusion in the selected quarry modeling software. From the Geological Quality Assurance Plan: "*Sample data, interval and thickness will be broken down further into a weighted average. A weighted average will be used to reduce bias from varying sample interval thickness*" And "*Weighted data will be used for the analysis of the location (and) then be compared a cross the specific area and within the geological unit. The analysis can then be used to determine whether homogeneity exists both laterally (2-dimensionally*) *and vertically (3-dimensionally) across each specific mining area and unit*." The purpose of utilization of a weighted average was to suppress variability associated with sample depth (e.g., a sample at 12 feet bgs could then be compared without bias to a sample from 36 ft bgs) and to prepare the sample data for inclusion in the quarry model that would then characterize Hg concentration across the ore deposit.

Weighted borehole averages were an appropriate data treatment for the quarry modeling exercise, which sought to *express* the Hg characterization of an ore body. But weighted averages should not be used for the IQVF calculation because sample averages, weighted or otherwise, *suppress* variability. Suppressing variability through averaging defeats the purpose of the IQVF exercise to express the variability of the ore body. If the IQVF is an exercise to define variability of the quarry, the flawed utilization of averaged samples would result in a suppression of the estimate of natural variability of the ore deposit.

In order to accurately estimate quarry variability, EPA should instead utilize the individual samples as opposed to weighted averages of boreholes consistent with the calculation performed by Trinity Consultants in their December 9, 2021, memorandum "Proposed MACT Emission Limit Calculations for Mercury from Lime Kilns." The utilization of approximately 77 individual samples into the IQVF exercise would allow for a non-variability suppressed treatment of the data. This technique would allow EPA to rely on a

much larger, quality-controlled set of data and would yield a more accurate expression of the ore body's Hg variability.

B. EPA Should Provide Operators with an Option for Continuous HCl Monitoring with a 30-Day Rolling Average

Graymont joins with NLA's comments and urges EPA to set a health-based standard for HCl of 300 tpy, not to exceed 685 pounds per hour. To the extent that EPA finalizes a MACT floor for HCl, Graymont also agrees the subcategorization is appropriate. Graymont requests, however, that EPA provide operators with additional flexibility for determining compliance with emission limits. Graymont supports the use of five-year performance testing and parametric monitoring; however, for HCl Graymont requests that EPA also provide operators with a regulatory alternative of installation and operation of a certified continuous emissions monitoring system ("CEMS") in conjunction with a 30-day rolling average to manage sorbent injection.

EPA has broad discretion to determine appropriate compliance options, including when continuous monitoring is required. *See NACWA*, 734 F.3d at 1115 (relying on EPA's discretion under 42 USC § 7661c not to use CEMs "if alternative methods are available that provide sufficiently reliable and timely information for determining compliance" and deferring to EPA's technical expertise to determine that a combination of annual emissions testing and parameter monitoring meets that standard). In this case, Graymont submits that EPA should use its discretion to give sources additional flexibility to manage compliance.

If an operator follows the Proposed Rule's compliance procedures and sets dry sorbent injection rates, this may not guarantee future compliance with the standard if the stack HCl concentration is variable. To address the risk, operators with variable HCl emissions would have no choice but to rely upon inelegant "set it and forget it" sorbent injection systems calibrated for worst-case sorbent injection rates. Not only would this result in periods of substantial sorbent over-injection—resulting in unnecessary costs for sorbent—but operational impacts could be material.

An additional concern for operators utilizing HCl CEMS as a feedback control loop for dry sorbent control is the potential for a short term upset creating an HCl emission limit violation of any 3-hour block average. The Credible Evidence Rule requires that a Responsible Official must report any deviations or exceedances of emission limits during the compliance certification process. An operator could petition the agency for an alternative monitoring plan consistent with the framework of 40 C.F.R. § 63.8 (f), but it should be noted that such an alternative monitoring plan would not provide the operator with any meaningful relief from short term emission excursions as the form of the emission standard would remain a 3-hour block average.

To address the potential for variable HCl emissions from lime kilns, Graymont recommends that EPA provide operators with an alternative 30-day rolling average limit for operators that choose to install and operate a certified HCl CEMS. This approach is

consistent with the Subpart DDDDD NESHAP for industrial boilers and process heaters, in which operators that use a CEMS for HCl are exempt from the performance testing and operating limit requirements specified in for the HAP for which CEMS are used. 40 C.F.R. § 63.7510(b).

Additionally, Graymont recommends the following additions to Tables 1, 5 and 6 to Subpart AAAAA of Part 63-Continuous Compliance with Operating Limits:

Modify Table 1 to provide 30-day rolling average HCl emission limits for subcategories of lime kilns equipped with dry sorbent injection that is controlled by an outlet HCl CEMS feedback control loop.

Add the following to Table 5:

For….	You must….	Using….	According to the following requirements
20. Each lime kiln equipped with dry sorbent injection that is controlled by an outlet HCl CEMS feedback control loop	Continuously monitor lime production rate and HCl mass emission rate	An HCl CEMS and flow monitor installed, certified, and maintained consistent with the applicable requirements of 40 CFR Part 60 Appendix B, PS-15 or PS-18, PS-6, and 40 CFR 60 Appendix F, Procedure 1.	In lieu of a five-year performance test, the operator may elect to use an HCl CEMS to demonstrate continuous compliance with a 30-day rolling average

And add the following to Table 6:

For….	For the following operating limit….	You must demonstrate continuous compliance by….
8. Each lime kiln equipped with dry sorbent injection that is controlled by an outlet HCl CEMS feedback control loop	Maintain the sorbent injection rate such that the stack HCl concentration remains below the 30-day rolling HCl emission limit	Collect and retain the HCl CEMs data. The HCl CEMS must be certified and maintained consistent with the applicable requirements of 40 CFR Part 60 Appendix

		B, PS-15 or PS-18, PS-6, and 40 CFR 60 Appendix F, Procedure 1.

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