



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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Ref: 8ARD-IO

Fred von Ahrens, Vice President of Manufacturing
Genesis Alkali Wyoming, LP
580 Westvaco Road, P.O. Box 872
Green River, Wyoming 82935

Re: Request for Applicability Determination: Applicability of the National Emission Standards for Lime Manufacturing Plants (40 CFR Part 63, Subpart AAAAA) to the Lime Kiln at the Genesis Alkali Wyoming, LP Westvaco Facility

Dear Mr. von Ahrens:

I am responding to your letter, dated April 6, 2020, requesting an applicability determination regarding 40 CFR part 63, National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants, 40 CFR 63.7080—63.7143 (Subpart AAAAA). Your letter seeks a determination as to whether the Westvaco facility operated by Genesis Alkali Wyoming, LP located in Green River, Wyoming is subject to the requirements of Subpart AAAAA. Specifically, you question whether the Westvaco facility is subject to Subpart AAAAA as a lime manufacturing plant (LMP) because of your contention that, “the facility is not used in manufacturing lime from stone or other dry material for sale.” A follow-up letter from Genesis Alkali dated October 1, 2020 made supporting arguments for your original request. As discussed below, the EPA determines that the Westvaco facility is an LMP as defined by Subpart AAAAA and is consequentially an affected facility under that Subpart and subject to all applicable standards and requirements found therein.

Facility Background

Your letter states that the Westvaco facility:

- “is a major source of hazardous air pollutants (HAP)”;
- “mines trona ore [...] and manufactures [various sodium end-products],” for the elaboration of various consumer and industrial products;
- as part of its operations includes, “a lime slaker and lime mud dryer (aka lime kiln), [...]. [CaO (quicklime)] reacts with water in [the] lime slaker to produce [Ca(OH)₂ (hydrated lime)] which reacts with [Na₂CO₃] in [a causticizer] to produce [NaOH] and calcium carbonate. [...] The calcium carbonate is calcined in the lime kiln to produce [CaO] to return to the caustic process”;
- “does not manufacture lime as a saleable product”; and
- “does not process limestone, nor manufacture lime.”

Your letter goes on to state that the lime kiln was installed in 1987, is fired with natural gas, is equipped with a wet scrubber, and is subject to a particulate matter (PM) permit limit that is more stringent on a pound per hour basis than the PM limit of Subpart AAAAA for lime kilns with wet scrubbers. Further, you state that the Westvaco's facility uses its "lime slaker and [lime kiln], similar to that at a pulp and paper, mill [*sic*] to recycle lime within the process in order to produce sodium hydroxide." You assert that this process is not similar to the typical 'captive' lime manufacturing process found at some steel mills because the facility does not continually calcine limestone quarried at the facility site or quarried for the specific and unique use of the Westvaco facility. Rather, the lime kiln solely calcines "wet calcium carbonate lime mud that is a byproduct of the manufacture of sodium hydroxide"

Subpart AAAAA

Subpart AAAAA establishes emission standards for HAPs for LMP as well as requirements for affected facilities to demonstrate initial and continuous compliance with said NESHAP.¹ The provisions of Subpart AAAAA are applicable to each owner/operator of an LMP that is a major source, or that is located at, or is part of, a major source of HAP emissions. For the purposes of the NESHAP, an LMP is any "establishment engaged in the manufacture of lime product (calcium oxide, calcium oxide with magnesium oxide, or dead burned dolomite) through calcination of limestone, dolomite, shells or other calcareous substances."² Subpart AAAAA explicitly exempts any LMP located at a kraft pulp mill, soda pulp mill, sulfite pulp mill, beet sugar manufacturing plant, or where the LMP only processes sludge containing calcium carbonate from water softening processes.³ Subpart AAAAA does not make any exemptions based on facilities that recover lime in processes similar to those found at exempted facility categories.

Applicability Determination Request and Follow-up Correspondence

As mentioned above, your letter emphasizes one idea above all others to question the applicability of Subpart AAAAA to the Westvaco facility: "Subpart AAAAA does not apply to the Westvaco Facility lime kiln because the facility is not manufacturing lime from stone or other dry material for sale." Your letter also quotes extensively from other supporting documents to express a second point, that the Agency has declined to regulate facilities as LMP in cases where the facility practices chemical recovery of lime as a component of the facility's process flow. You assert: "The process [at Westvaco] is very similar to lime kiln processes located at pulp and paper mills, which are exempt from 40 CFR Part 63, Subpart AAAAA. Facilities processing calcium carbonate waste sludge are also exempt from the NESHAP."

In your follow up correspondence, you emphasize two issues: (1) municipal water treatment plants that produce lime by calcining a calcareous sludge were exempted during rule finalization after water treatment plant representatives requested an exception during the public comment period of the 2004 Subpart AAAAA rulemaking; and (2) the units of the PM emission limit for lime kilns under Subpart AAAAA is denominated in pounds per ton of stone feed (lb/tsf), while the Westvaco facility does not calcine dry stone to chemically recover lime. The first argument supports an idea that exemptions

¹ 40 CFR 63.7080

² 40 CFR 63.7081(a)(1)

³ 40 CFR 63.7081(a)

provided for facilities with “similar” lime recovery processes would also be given to the Westvaco facility. The second point would support an assertion that EPA did not intend to apply Subpart AAAAA to facilities such as the Westvaco facility, which recovers lime through calcination of a calcareous sludge.

1. Non-sale of lime derived from calcium carbonate sludge

As stated in the previous section, 40 CFR 63.7081(a)(1) defines an LMP, for the purposes of determining the applicability of Subpart AAAAA, as any establishment engaged in the manufacture of lime product by calcination of any one or combination of various calcium bearing substances, explicitly including a broad category of material, “other calcareous substances,” as a potential feedstock. Subpart AAAAA is applicable to facilities that produce lime regardless of whether the feedstock is stone, dry material, or any other calcareous substance which may not be considered a traditional feedstock for a lime kiln. The only LMP for which Subpart AAAAA does not apply are those which are not themselves or otherwise associated with a major source of HAP or else belong to one of the several source categories explicitly listed for exemption in § 63.7081(a). Your letter informs us that the Westvaco facility: (1) produces lime from the calcination of a calcium carbonate bearing sludge (i.e., a “calcareous substance”); (2) is a major source of HAP; and (3) is not a member of any of the explicitly exempted source categories.

There is a connected question of applicability implied by your letters as well: Do the emission limitations of Subpart AAAAA apply to the lime kiln in operation at the Westvaco facility if it does not calcine quarried stone? In addressing what parts of an LMP are covered by Subpart AAAAA, the regulatory text states, “this subpart applies to each existing or new *lime kiln* ... located at an LMP that is a major source” [emphasis added].⁴ We look at the definition of ‘lime kiln’ found in Subpart AAAAA to ascertain whether the atypical processes found at the Westvaco facility’s kiln exclude your LMP from regulation under the Subpart. Subpart AAAAA, in short, defines a ‘lime kiln’ as, “the device, including an associated preheater, used to produce a lime product from *stone feed* by calcination” [emphasis added].⁵ This would seem to support your argument that a kiln processing lime sludge, specifically, is not a lime kiln subject to the Subpart. However, we must also look at the definitions for ‘limestone’ and ‘processed stone’ to conclude what the Subpart includes as ‘stone feed.’ Limestone is defined as “the material comprised primarily of calcium carbonate (referred to sometimes as calcitic or high calcium limestone) [...]” and processed stone is defined as “limestone or other calcareous material that has been processed to a size suitable for feeding into a lime kiln.”⁶ The lime sludge used at Westvaco is both a material comprised primarily of calcium carbonate and a calcareous material processed to a size suitable for feeding into a lime kiln. These definitions illustrate that Subpart AAAAA uses ‘stone’ and ‘limestone’ as shorthand for any calcium carbonate rich material processed by a kiln for the production of lime. This would include a lime sludge as seen at the Westvaco facility.

As for whether the lime produced from calcination is marketed, the fact that the Westvaco facility does not produce lime for sale is inconsequential in determining applicability of Subpart AAAAA. The regulatory text of Subpart AAAAA makes no exemptions based on the sale or non-sale of lime

⁴ 40 CFR 63.7082(a)

⁵ 40 CFR 63.7143

⁶ *Ibid.*

manufactured at an LMP. Indeed, the preamble for the 2004 final rule promulgating the NESHAP includes ‘captive’ lime manufacturing plants as affected facilities under Subpart AAAAA which manufacture lime that is not for sale, but for use in other production processes at the same facility.⁷ External sale of the lime produced at the LMP was never a criterion for applicability of Subpart AAAAA and the reuse of lime manufactured at Westvaco for other production activities does not exempt the facility from the NESHAP.

2. Regulatory history of deferral to regulate

You base your secondary argument, that EPA has declined to regulate facilities such as the Westvaco facility as LMP, primarily on two documents: (1) the 2002 Federal Register preamble for the proposed NESHAP; and (2) a 2000 EPA applicability determination regarding the application of the 1984 new source performance standard for LMP codified at 40 CFR part 60, subpart HH.

First, your letter correctly states that the preamble for the proposed LMP NESHAP says, “the emission units included in the definition of affected sources for the NESHAP were selected based on regulatory history, to be consistent with the lime manufacturing [NSPS] at 40 CFR 60, Subpart HH. However, the preamble only asserts that the general regulated source category is the same between 40 CFR part 60, subpart HH and 40 CFR part 63, subpart AAAAA. Both of these subparts regulate facilities “engaged in the production of high calcium lime, dolomitic lime, and dead-burned dolomite.”⁸ The preamble does not state, as your letter would seem to assert, that EPA limits itself to only the emission units and affected facilities regulated by 40 CFR part 60, subpart HH. A comparative reading of Subparts HH and AAAAA shows many differences that would indicate the applicability criteria of one should not be used to interpret the applicability criteria of the other. For instance, Subpart HH only regulates, solely and specifically, ‘rotary’ lime kilns at LMP, while the definition of an affected lime kiln is expanded in Subpart AAAAA to include rotary kilns, vertical kilns, fluidized bed kilns, etc.⁹

Second, as alluded to in the first point, one should not use an applicability determination regarding Subpart HH to interpret the application of Subpart AAAAA. The applicability determination from August 2000 was correct that Subpart HH was not applicable to the soda pulp mill in question. However, that determination has no strict bearing on your request. Both the operational definitions and applicability criteria of the two Subparts are distinct and different from one another. For example, Subpart AAAAA defines an LMP as, “any plant which uses a lime kiln to produce lime product from limestone or other calcareous material by calcination.” Subpart HH defines the LMP as, “any plant which uses a rotary lime kiln to produce lime product from limestone by calcination.” Subpart AAAAA expands the definition of an LMP to include a facility with *any* type of lime kiln- not just rotary kilns- and calcinating *any* type of calcareous substance- not just dry, quarried limestone- to produce lime. Again, we conclude that the Westvaco facility is not exempted from Subpart AAAAA.

⁷ U.S. EPA. National emission standards for hazardous air pollutants for lime manufacturing plants. 69 FR 394-395. 2004.

⁸ 67 FR 78053

⁹ See 40 CFR 60.341 and 40 CFR 60.7143

3. *Water treatment plants*

40 CFR 63.7081 explicitly exempts LMPs that only process sludge containing calcium carbonate from water softening processes. This exemption resulted from EPA's considered response to one commenter during the 2002 rulemaking actions for Subpart AAAAAA.¹⁰ Your letter is correct in suggesting that facilities previously or otherwise defined by the applicability criteria may seek specific exemptions from a given rule. However, the exemption in question was granted during the rulemaking process and is explicitly given in the regulatory text of Subpart AAAAAA. The question before us here is whether the Westvaco facility meets the applicability criteria as finalized. Given that the EPA was presented with a category of facilities which would otherwise be captured by the applicability criteria, and chose to only narrowly exempt kilns processing sludge containing calcium carbonate *from water softening processes* [emphasis added], we cannot conclude that EPA intended to exempt facilities with similar processes. Considering this argument does not affect our overall deliberation on the applicability of Subpart AAAAAA to Westvaco.

4. *Emission standard units*

The emission limits for lime kilns given in Table 1 to Subpart AAAAAA are denominated in lb/tsf. Your follow-up letter is correct in stating that the colloquial use of 'stone feed' does not accurately describe the lime kiln feedstock at the Westvaco facility. However, we are strictly addressing the applicability of Subpart AAAAAA to Westvaco. As explained earlier, the Subpart AAAAAA definition of 'stone feed' is expansive and includes all calcareous materials used for the production of lime. The emission limit units do not suggest that EPA did not intend to regulate lime kilns that solely process calcium carbonate bearing sludge.

EPA Determination

In concluding our evaluation of your arguments, we fall back to a plain reading of § 63.7081 to determine applicability of Subpart AAAAAA to the Westvaco facility. This section is clear that all owners or operators of an LMP that is a major source, or co-located with a major source, of HAPs are subject to the NESHAP. In this same section concerning applicability, an LMP is defined as "an establishment engaged in the manufacture of lime product (calcium oxide, calcium oxide with magnesium oxide, or dead burned dolomite) by calcination of limestone, dolomite, shells or *other calcareous substances* [emphasis added]." Explicitly excluded from the affected population of LMPs are those located at various pulp mills, beet sugar manufacturing plants, or facilities solely processing sludge rich in calcium carbonate from water softening processes. Subpart AAAAAA does not make exemptions for LMPs with similar processes to those found at the exempted facilities. Neither the Westvaco facility as an LMP nor the lime kiln integral to that LMP are explicitly exempted from application of Subpart AAAAAA. We therefore conclude that 40 CFR part 63, subpart AAAAAA applies to the Westvaco facility operated by Alkali Genesis Wyoming, LP.

¹⁰ See, US EPA, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Lime Manufacturing Background Information – Vol II, Public Comments and Responses, August 2003, pp. 3-45 and 3-46.

If there are any technical questions, please have your staff contact Gregory Lohrke at (303) 312-6396 or at lohrke.gregory@epa.gov. If there are any legal questions, please have your staff contact Randall Cherry at (303) 312-6566 or at cherry.randall@epa.gov.

Sincerely,

1/15/2021

 Carl Daly

Signed by: CARL DALY

Carl Daly
Acting Director
Air and Radiation Division

cc: John Lucas, Ryan Pauley, Andrew Penamora, Barbara Ritchie (Genesis Alkali);
Nancy Vehr, Jared Beck, Melissa Meares (WDEQ-AQD)