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BY FIRST CLASS MAIL, FAX, AND EMAIL

To the Honorable Stephen L. Johnson:

On behalf of the Natural Resources Defense Council and Sierra Club ("Environmental Petitioners"), we submit this petition for rulemaking pursuant to the Clean Air Act, 42 U.S.C. §§ 7401-7661, and the Administrative Procedure Act, 5 U.S.C. § 553(e). EPA must amend its Clean Air Act regulations for numerous categories of sources of hazardous air pollutants. National Emission Standards for Hazardous Air Pollutants (NESHAPs), codified in parts 61 and 63 of volume 40 of the Code of Federal Regulations, to correct the failure of numerous part 61 and part 63 standards to comply with the Clean Air Act ("CAA") and controlling precedent of the United States Court of Appeals for the District of Columbia Circuit. As discussed below, these regulations all violate Clean Air Act § 112, 42 U.S.C. § 7412. In addition, Environmental Petitioners hereby petition EPA to undertake a comprehensive assessment of its existing regulations under 40 C.F.R. part 61 and part 63 — including and in addition to those identified herein — to ensure that each standard fully complies with the Act and governing judicial rulings.

A. GOVERNING STATUTORY AUTHORITY AND JUDICIAL PRECEDENT

Under section 112(d) of the Clean Air Act, EPA must establish emission standards for each category or subcategory of major sources of hazardous air pollutants listed in the statute. 42 U.S.C. § 7412(d)(1). Section 112(d)(2) provides that emission standards

> shall require the maximum degree of reduction in emissions of the hazardous air pollutants subject to this section . . . that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable . . . through application of measures, processes, methods, systems or techniques including, but not limited to . . . process changes, substitution of materials or other modifications.

§ 7412(d)(2).

"In addition to this general guidance, the statute includes minimum stringency requirements for emission standards that apply <u>without regard to either costs or the other factors</u>

and methods listed in section 7412(d)(2)." *National Lime Ass'n v. EPA*, 233 F.3d 625, 629 (D.C. Cir. 2000) (emphasis added). For new sources, "[t]he maximum degree of reduction in emissions that is deemed achievable . . . shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source." § 7412(d)(3). Emission standards for existing sources "shall not be less stringent" than "the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emissions information)." § 7412(d)(3)(A). Once EPA has set the minimum stringency standards required by section 112(d)(3), which the Agency refers to as "floors," it may then consider the factors enumerated in section 112(d)(1) (e.g., cost) when determining whether more stringent "beyond-the-floor" standards are achievable.

The D.C. Circuit has repeatedly held that EPA has a "clear statutory obligation to set emission standards for each listed HAP," regardless of whether the best-performing sources in a given category are currently using air pollution control technology to limit their emissions. *National Lime*, 233 F.3d at 634; *Mossville Environmental Action Now v. EPA*, 370 F.3d 1232 (D.C. Cir. 2004); *Sierra Club v. EPA*, 479 F.3d 875 (D.C. Cir. 2007). In *National Lime*, the Sierra Club challenged EPA's refusal to set standards for HCl, mercury, and total hydrocarbons emitted by cement manufacturing plants. EPA argued that it had not found any plants using control technologies for those pollutants. The court found that EPA has a "clear statutory obligation to set emission standards for each listed HAP" and that "[n]othing in the statute even suggests that EPA may set emission levels only for those listed HAPs controlled with technology." *Id.* at 633-634. *See also Mossville Environmental Action Now*, 370 F.3d at 1242 (same); *Sierra Club*, 479 F.3d at 878 (same).

The D.C. Circuit has also held that EPA must set emission floors that reflect the emission levels that the best-performing sources in each category actually achieve. In *Cement Kiln*, EPA set out to set floors that would be "achievable" for every source that used a chosen "MACT" technology. 255 F.3d at 861. EPA argued that the floor requirements in § 112(d)(3) were merely a "gloss" on the beyond-the-floor requirements in § 112(d)(2) and that floors under § 112(d)(3) therefore had to satisfy EPA's notions of achievability. *Id.* The Court rejected EPA's statutory interpretation, holding that floors must reflect the emission levels that the best sources actually achieve, not what EPA views as "achievable. *Id.*

In *Cement Kiln*, EPA had set floors based on the performance of the worst-performing plant in the Agency's database that used the same technology as the best-performing plants — a methodology EPA referred to as "the MACT approach." Although EPA admitted in the record that it adopted this approach to ensure "achievable" floors, the agency also claimed the MACT approach yielded a reasonable estimate of the relevant best sources' actual emission levels. Because many factors other than the application of technology affect sources' actual emission levels, however, the Court rejected that claim as well. 255 F.3d at 862-865. It is EPA's obligation to demonstrate — not merely assert — that its floor approach yields an accurate reflection of the best sources' emission levels.

EPA argued that, because it lacked data and because deriving an accurate picture of the best sources' emission levels from the MACT approach is difficult, the agency should be

excused from setting valid floors. 255 F.3d at 865. The Court rejected that line of argument as well:

> Even accepting the proposition that factors affecting source performance — either design features of the control itself (such as the type of fabric used) or non-MACT variables (such as waste composition or use of additional controls) — are difficult to quantify *when defining the MACT control*, nothing in the statute requires the Agency to use the MACT approach. Section 7412(d)(3) requires only that EPA set floors at the emission level achieved by the best-performing sources. If EPA cannot meet this requirement using the MACT methodology, it must devise a different approach capable of producing floors that satisfy the Clean Air Act.

Id. (emphasis in original).

Despite the clarity of the D.C. Circuit's decisions construing it in *National Lime* and *Cement Kiln*, EPA chose to ignore them in the following years. It continued to issue § 112 regulations that failed to include standards for each listed HAP, that set unlawful "no control" standards, and that failed to satisfy § 112(d)(3)'s floor requirements. Again and again, EPA forced public interest groups to challenge its rules and forced the D.C. Circuit to review the same unlawful statutory interpretation and rulemaking approach.

In *Mossville Environmental Action Now*, environmental groups challenged EPA regulations for PVC plastic plants that failed to set standards for any HAP except vinyl chloride. The D.C. Circuit confirmed that EPA has "a 'clear statutory obligation to set standards for each listed HAP' that the source category emits." 370 F.3d at 1242 (*quoting National Lime*, 233 F.3d at 634). The Court found unpersuasive EPA's belated attempt to claim in litigation that its vinyl chloride standard was a "surrogate" for all the other HAPs that PVC plants emit. 370 F.3d at 1242-1243. The agency had not even identified the HAPs for which vinyl chloride was allegedly a surrogate, far less explain why vinyl chloride was a reasonable surrogate for those unidentified pollutants, prompting the Court to note that it could not the agency's claim "under any standard." *Id.* at 1243.

In *Northeast Maryland Waste Disposal Authority*, the D.C. Circuit addressed yet another refusal by EPA to implement the Clean Air Act's mandatory floor provisions — in that instance under the virtually identical language of § 129's provisions for solid waste incinerators. For existing units, EPA had based floors on the emission limits in State air permits and regulations. 358 F.3d at 953-954. The agency claimed that these regulatory limits were reasonable "estimates" of the best sources' performance, but failed to demonstrate that claim with record evidence. *Id.* The agency also complained that it could not set accurate floors for existing units using the actual emissions data it had. 358 F.3d at 954. The Court rejected both of those arguments, making clear that it is EPA's obligation to set floors that accurately reflect the relevant best sources' emission levels and that EPA could not avoid that obligation by claiming that its data were inadequate. *Id.*

For new units, EPA had, once again, adopted the MACT approach of picking a technology and then setting floors at a level it deemed achievable by all units that used that technology. Again, EPA offered the alternative arguments that its floors must be "achievable"

and that the levels it designated as achievable with the chosen technology also happened to accurately reflect the emission level actually achieved by the single best source. 358 F.3d at 954-955. Confronting a rehash of the same arguments it rejected in *Cement Kiln*, the D.C. Circuit rejected them again:

> This is precisely the rationale we rejected in *Cement Kiln*. ... EPA has once again improperly invoked achievability (incorrectly relying on the emission variability of *all* [municipal waste combustors] that use the technology rather than on the variability of the *best performing* unit) to gloss over the actual achievement requirement.

358 F.3d at 955 (emphasis in original). The Court also rejected EPA's claim that its floors were estimates of the best unit's performance, finding that EPA had failed to show that its MACT approach yielded accurate estimates. *Id.*

Apparently dissatisfied with the D.C. Circuit's decisions, however, EPA attempted to circumvent them yet again. In its § 112 standards for brick kilns, EPA once again set "no control" standards for many of the HAPs these sources emit. *Sierra Club*, 479 F.3d at 879-880. Where the agency set standards at all, it attempted to set floors at levels that it regarded as "achievable" rather than the level actually achieved by the best performing sources "simply by redefining 'best performing' to mean those sources with emission levels achievable by all sources." *Id.* at 880-881. Again EPA invoked the alleged difficulty of accounting for variability to excuse its failure to respect § 112's floor language. *Id.* at 881-882. Again, EPA claimed that the performance of a technology reasonably estimates the emission level of the best sources, even where it is undisputed that other factors affect sources' emission level. *Id.* at 882-883. Again EPA insisted that it could set "no control" floors if it does not think that controls are viable. *Id.* at 883. Faced with arguments that it already had rejected repeatedly, the D.C. Circuit confirmed that "section 7412(d)(3) requires floors based on the emission level actually achieved by the best performers (those with the lowest emission levels). *Id.* at 880. It also found it necessary to remind EPA of its role in a constitutional democracy:

> If the Environmental Protection Agency disagrees with the Clean Air Act's requirements for setting emission standards, it should take its concerns to Congress. If EPA disagrees with this court's interpretation of the Clean Air Act, it should seek rehearing en banc or file a petition for a writ of certiorari. In the meantime, it must obey the Clean Air Act as written by Congress and interpreted by this court.

Id. at 884.

In light of the D.C. Circuit's decisions, it is plain that many of the § 112 regulations EPA has issued are flatly unlawful. They fail to include standards for each HAP that a category emits, fail to satisfy § 112(d)(3)'s floor requirements, or both. Accordingly, Environmental Petitioners petition EPA to amend the following regulations and issue new ones that fully comply with Clean Air Act § 112. *See Kennecott Utah Copper Corp. v. Department of Interior*, 88 F.3d 1191, 1213 (D.C. Cir. 1996) ("a claim that agency action was violative of statute may be raised

outside a statutory limitations period, by filing a petition for amendment or rescission of the agency's regulations, and challenging the denial of that petition").

B. LEGALLY DEFICIENT REGULATIONS REQUIRING REVISION

1. Aerospace Manufacturing and Rework Facilities

Surface-coating processes in the aerospace industry produce emissions of HAPs including chromium, cadmium, methylene chloride, toluene, xylene, methyl ethyl ketone, ethylene glycol, and glycol ethers. 60 Fed. Reg. 45,948, 45,948 (Sept. 1, 1995) ("Aerospace NESHAP"). The Aerospace NESHAP fails to regulate HAP emissions from at least ten different emission points: four non-coating-related operations; four coating-related operations; wastewater; and storage tanks.

EPA argues that control of organic HAP emissions from the four non-coating-related operations that EPA declines to regulate (chemical milling, metal finishing, electrodeposition, and composite processing) is "not feasible because no demonstrated control measures could be identified." 59 Fed. Reg. 29,216, 29,239 (June 6, 1994) ("Aerospace Proposal"). EPA has a "clear statutory obligation to set emission standards for each listed HAP," regardless of whether the best-performing sources in a given category are currently using air pollution control technology to limit their emissions. *National Lime*, 233 F.3d at 634. Moreover, the Agency must regulate emissions from all the emission points that it determines are part of the affected source. Neither EPA's claims about the relative significance of HAP emissions from the four non-coating-related operations, nor the agency's failure to identify control measures, justify its refusal to set emission standards for the HAPs emitted from these operations.

EPA also argues that it need not regulate the non-coating operations because their emissions constitute less than 1% of the total organic HAP emissions from aerospace facilities. EPA lacks authority simply to declare that sources of HAP emissions are not worth controlling. In addition, EPA refuses to regulate four coating-related operations: adhesives, adhesive bonding primers, sealants, and specialty coatings. EPA argues that the organic HAP emissions from these processes are "relatively small." Aerospace Proposal, 59 Fed. Reg. at 29,239. EPA also argues that many of the coatings in use are already applied using efficient techniques, and thus there is little room to reduce emissions further. *Id.* EPA discusses the possibility of using coatings with lower organic HAP content, but asserts that it lacked data on organic HAP content of coatings at the time of the proposal, and it did not have time to collect any. *Id.* EPA also refuses to set standards for HAP emissions from wastewater and storage tanks, claiming that none of the facilities in its database were deliberately controlling emissions from these points at the time of proposal. The Agency also speculates that other requirements in the rule might result in reduction of wastewater and storage tank emissions. *Id.*

None of EPA's excuses are even remotely relevant to the agency's well established obligation to set emission standards for each HAP. EPA must set emission standards for each HAP emitted by a source category, regardless of whether the best-performing sources are currently using pollution control technology. It cannot fulfill its obligation by setting standards for some parts of the source category and not others. Moreover, a lack of data to quantify the

effects of non-technology factors on emissions does not excuse the failure to set a floor. *Sierra Club*, 479 F.3d at 882.

Finally, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

2. Asphalt Processing and Asphalt Roofing Manufacturing

Asphalt processing and asphalt roofing manufacturing facilities are major sources of formaldehyde, hexane, hydrogen chloride (HCl), phenol, polycyclic organic matter (POM), and toluene. 66 Fed. Reg. 58,610, 58,610 (Nov. 21, 2001). Because it failed to set an emission standard for HCl, EPA must reopen the Asphalt NESHAP. , 68 Fed. Reg. 24,562, 24,564 (May 7, 2003).

HCl is emitted only by those sources using a chlorinated catalyst in their blowing stills. Asphalt roofing manufacturing plants must use a catalyst if they use certain low-quality asphalt flux feedstocks. Asphalt Proposal, 66 Fed. Reg. at 58619. Of the 91 blowing stills for which EPA had data at the time of the proposed rule, 37 use a chloride-based catalyst. *Id.* EPA acknowledges in the proposed rule that "[w]ell over 12 percent of blowing stills do not use a catalyst." *Id.* Thus, the best-performing sources emit no HCl at all. EPA is required to set a floor that reflects the emission level of the best-performing sources.

In determining a floor for HCl emissions, EPA considered two potential bases for the standard: at-the-stack controls and prohibiting use of a chlorinated catalyst. *Id.* It rejected the former because none of the sources was currently using a control device. It rejected the latter because doing so would require all manufacturers to use higher-quality asphalt flux feedstock, and it asserts that higher-quality feedstock is not consistently available to all sources: "control of HCl emissions through substitution of higher quality asphalt flux is not an achievable means of control, because such higher quality flux is not consistently or reliably available . . . ." *Id.* EPA's justification for its failure to set an emission standard for HCl has been rejected by the D.C. Circuit. EPA has a "clear statutory obligation to set emission standards for each listed HAP." *National Lime*, 233 F.3d at 634. Assertions that "changes in non-technology factors were not 'appropriate' or 'viable'" cannot justify for a "no control" floor. *Sierra Club*, 479 F.3d at 883.

Finally, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

3. Surface Coating of Automobiles and Light-Duty Trucks

The NESHAP for surface coating of automobiles and light-duty trucks regulates only emissions of organic HAPs, although EPA acknowledges that facilities in this source category may emit inorganic HAPs as well. 69 Fed. Reg. 22,602 (Apr. 26, 2004). Coatings used in surface coating operations can contain lead, manganese, and chromium compounds. 67 Fed. Reg. 78,612, 78,620 (Dec. 24, 2002). EPA argues that these inorganic HAPs are unlikely to be emitted

because they are in the coating solids and remain on the surface to which they are applied, but admits that these HAPs may be emitted when coatings are spray-applied: "[D]uring spray application, inorganic compounds become airborne, and they . . . [may] enter the air and become susceptible to transport . . . outside into the ambient air." *Id.* Furthermore, EPA confirms that facilities "that use spray application techniques sometimes apply coatings that contain inorganic HAP compounds, including small quantities of chromium oxide." *Id.*

Because EPA has a statutory obligation to set emission standards for each listed HAP emitted by each category of major sources, EPA must reopen the Auto and Light-Duty Truck NESHAP and set emission standards for inorganic HAPs emitted by these sources.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

4. Cellulose Products Manufacturing

The NESHAP for cellulose products manufacturing addresses emissions from two source categories, miscellaneous viscose processes and cellulose ethers production. 67 Fed. Reg. 40,044 (June 11, 2002). The HAPs emitted by viscose processes include carbon disulfide (CS_2), carbonyl sulfide, and toluene. 65 Fed. Reg. 52,166, 52,168 (Aug. 28, 2000). EPA identifies four different types of emission points in the viscose processes category: equipment leaks, wastewater emissions, CS_2 unloading and storage operations, and process vents. "Because none of the ten viscose process operations control CS_2 emissions from equipment leaks or wastewater," EPA set a floor of "no control" for those emission points, and declined to adopt beyond-the-floor standards. *Id.* at 52172. Similarly, EPA set "no control" standards for four emission points in the cellulose ether production category: storage vessels, equipment leaks, wastewater emissions, and process vents. *Id.* at 52,175. These operations emit HAPs including ethylene oxide, methanol, methyl chloride, and propylene oxide. *Id.* at 52,168.

It is well established that "no control" standards are unlawful. EPA must, at a minimum, set floors for each HAP that a source category emits and those floors must reflect the average emission level actually achieved by the best performing sources, those with the lowest emissions. EPA must reopen the cellulose products manufacturing rule and set emission standards for equipments leaks and wastewater in the viscose processes source category and for storage vessels in the ether production source category.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

5. Engine Test Cells/Stands

Engine test cells/stands emit HAPs including toluene, benzene, mixed xylenes, and 1,3-butadiene. 68 Fed. Reg. 28,774, 28,774 (May 27, 2003). EPA divides engine test cells/stands into four subcategories: (1) Engine test cells/stands used for testing internal combustion engines with rated power of 25 hp or more, (2) engine test cells/stands used for testing internal combustion

engines with rated power of less than 25 hp, (3) engine test cells/stands used for testing combustion turbine engines, and (4) engine test cells/stands used for testing rocket engines. *Id.* at 28,779. Additionally, it divides each subcategory into existing and new/reconstructed sources. Of the eight resulting subcategories, EPA sets emission standards for only one (new/reconstructed sources used for testing internal combustion engines with rated power of 25 hp or more) and adopts "no control" standards for the remaining seven. Because "no control" standards are unlawful, EPA must reopen the engine test cells/stands rule and promulgate the missing standards.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

6. Flexible Polyurethane Foam Fabrication Operations

EPA identifies two subcategories of flexible polyurethane foam fabrication operations: loop slitter HAP-based adhesive use and flame lamination. 68 Fed. Reg. 18,062, 18,063 (Apr. 14, 2003). HAP emissions from the flame lamination process include HCN, TDI, and HCl. 66 Fed. Reg. 41,718, 41,720 (Aug. 8, 2001). Because it failed to set emission standards for existing sources in the flame lamination subcategory, EPA must reopen its rule.

EPA attempts to justify its failure to set emission standards by arguing that three of the alleged five best performing sources do not use control technology. That argument is irrelevant. EPA must set emission standards regardless of whether existing sources are using control technology, and those standards must reflect the average emission level actually achieved by the relevant best performing sources, those with the lowest emissions.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

7. Flexible Polyurethane Foam Production

The NESHAP for flexible polyurethane foam production regulates HAP emissions from facilities that produce slabstock, molded, or rebond flexible polyurethane foam. The rule covers emissions from four types of emission points at slabstock foam facilities: storage vessels, equipment leaks, HAP auxiliary blowing agent use, and equipment cleaning. 61 Fed. Reg. 68,406, 68,410 (Dec. 27, 1996). The HAPs emitted at these points include toluene diisocyanate (TDI) and methylene chloride. EPA reports that the International Agency for Research on Cancer has classified TDI as a possible human carcinogen, EPA, Technology Transfer Network Air Toxics Website: 2,4-Toluene diisocyanate, http://www.epa.gov/ttn/atw/hlthef/toluene2.html, and EPA recognizes that TDI presents health concerns "even at relatively low concentrations." 63 Fed. Reg. 53,980, 53,990 (Oct. 7, 1998).

However, claiming that no facilities in its database deliberately control TDI emissions from the foam production line, EPA set a floor of "no control," for these emissions, and declined to adopt a beyond-the-floor standard.

It is well established that "no control" standards are unlawful. EPA has a "clear statutory obligation to set emission standards for each listed HAP" emitted by a source category, regardless of whether a particular HAP is currently controlled with technology. *National Lime*, 233 F.3d at 634. EPA must reopen the rule and set an emission standard for TDI emissions from the slabstock foam production line.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

8. Friction Materials Manufacturing Facilities

Friction materials manufacturing facilities emit HAPs including n-hexane, toluene, and trichloroethylene. The NESHAP for friction materials manufacturing does not address fugitive emissions, even though the agency acknowledges that they account for approximately 259 tons of HAP emissions each year, almost forty percent of the category's total baseline HAP emissions. 67 Fed. Reg. 64,498, 64,501, 64,503 (Oct. 18, 2002).

EPA attempts to justify its failure to control fugitive HAP emissions by arguing that they occur in later process equipment, such as extruders, granulators, dryers, hot presses, and curing ovens, and that none of the sources in EPA's database currently use technology to control emissions from these pieces of equipment. EPA determined that the floor for these emission points is no control, and declined to adopt beyond-the-floor standards because it does not consider them cost effective. *Id.*

It is well established that "no control" standards are unlawful. EPA has a statutory obligation to set emission standards for each HAP emitted by a source category, regardless of whether a particular HAP is currently controlled with technology. *National Lime*, 233 F.3d at 634. EPA must reopen the rule and set a standard for emissions from the process equipment listed above.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

9. Generic Maximum Achievable Control Technology I: Acrylic and Modacrylic Fiber (AMF) Production

Acrylic and modacrylic fiber (AMF) production facilities is emit acrylonitrile (AN) as well as dimethylformamide, cyanide compounds, vinyl chloride, vinyl bromide, vinylidine chloride, and vinyl acetate. National Emission Standards for Hazardous Air Pollutants: Generic Maximum Achievable Control Technology; Proposed Rule, 63 Fed. Reg. 55,178, 55,191 (June 29, 1999). However, EPA set emission standards only for AN and only for pollutant streams containing AN. The rule does not include standards for HAPs other than AN or any standards at all for pollutant streams that do not contain AN. Because it is well established that EPA must set standards for each HAP that AMF facilities emit, the agency's rule is flatly unlawful.

EPA argues that its rule does not address emissions of other HAPs because other HAPs, if present, "would only be associated with those pollutant streams containing AN *with the exception of raw material storage*." *Id.* (emphasis added). Even if true, that claim would not excuse EPA from setting standards for the other HAPs emitted from pollutant streams containing AN. Nor would it excuse EPA from setting standards for all the HAPs emitted from raw material storage.

The rule also fails to control AN emissions from solution polymerization processes at existing sources. EPA claimed it could not identify a control system that could be applied to the solution process, and it concluded that it will "reexamine the applicability of various control system options for spinning operations using the solution process during the residual risk analysis phase of these standards." 64 Fed. Reg. 34,854, 34,862 (June 29, 1999). However, as discussed above, EPA has a statutory obligation to set emission standards for each HAP emitted by a source category, and it cannot fulfill its obligation by setting standards for some parts of the source category and not others. EPA must reopen the rule and set an emission standard for AN and other HAP emissions from spinning lines using the solution process at existing sources.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

10. Generic Maximum Achievable Control Technology II: Carbon Black Production

Carbon black production facilities emit HAPs including carbon disulfide, carbonyl sulfide, and hydrogen cyanide. Although EPA sets emission standards for one emission point in carbon black production facilities—process vents from the main unit filter—it fails to set standards for another, process vents after the main unit filter. 65 Fed. Reg. 76,408, 76,423 (Dec. 6, 2000); 67 Fed. Reg. 46,258 (July 12, 2002). EPA acknowledges that the best-performing source "reported process modifications that reduce the residual HAP levels in the process after the main unit filter by 98 weight-percent." Nevertheless, EPA determined that the floor for both existing and new sources is no control because "this facility's level of control does not correspond to a control type." 65 Fed. Reg. at 76,423.

It is well established that "no control" floors are unlawful. EPA must set standards for each HAP that a category emits, and these standards must, at a minimum, reflect the average emission level actually achieved by the best performing sources. Here, EPA must set emission standards for new sources that are at least as stringent as the emission level achieved by the single best-performing source. Additionally, EPA must set emission standards for existing sources that are at least as stringent as the average emission limitation achieved by the best-performing five sources (because the source category contains fewer than thirty sources), regardless of whether the average emission limitation corresponds to the use of a particular technology. *Cement Kiln*, 255 F.3d at 861. Thus, EPA must reopen the rule and promulgate emission standards for process vents after the main unit filter in both new and existing sources.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

11. Generic Maximum Achievable Control Technology II: Ethylene Production

Ethylene production facilities emit HAPs including benzene, 1,3 butadiene, toluene, naphthalene, hexane, and xylene. Although the NESHAP for ethylene production controls HAP emissions from some emission points, it fails to control emissions from ethylene cracking furnaces. EPA determined that ethylene cracking furnaces "are expected to have relatively low HAP emissions," but it still considered standards for this emission point because "HAP emissions can result from incomplete combustion, and natural and refinery gas combustion has been shown to result in emissions of formaldehyde." 65 Fed. Reg. at 76,432. Claiming it did not identify any control technologies currently in use to control HAP emissions from ethylene cracking furnaces, however, the Agency set the floor at no control and did not identify any beyond-the-floor options. *Id.* at 76,433.

It is well established that "no control" floors are unlawful. EPA must set standards for each HAP that a category emits, and these standards must, at a minimum, reflect the average emission level actually achieved by the best performing sources. EPA must reopen the rule and set emission standards for the HAP emissions from ethylene cracking furnaces.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

12. Generic Maximum Achievable Control Technology II: Cyanide Chemicals Manufacturing

Cyanide chemicals manufacturing facilities emit HAPs including cyanide compounds (hydrogen cyanide and sodium cyanide), acrylonitrile, and acetonitrile. EPA identifies five HAP emission points in these facilities: process vents, storage vessels, equipment leaks, transfer operations, and wastewater treatment operations. For wastewater treatment operations in existing sources, EPA fails to set any emission standards. 65 Fed. Reg. at 76,418. EPA argues that a numerical emission standard would be impracticable because the performance of biological treatment systems varies from site to site. However, EPA did not set a work practice finding or make the findings that § 112(h) requires if the agency wishes to set work practice standards in lieu of emission standards. Instead, EPA argues oddly that it would be difficult to set a work practice standard "based on the median of the top five of these facilities that would both be achievable across the source category and consistent with continued compliance with effluent discharge permits." *Id.* at 76,419.

The D.C. Circuit has held that EPA must set standards for each HAP and that these standards must reflect the average emission level achieved by the best-performing sources, regardless of what the Agency judges to be "achievable." across the source category. *Cement Kiln*, 255 F.3d at 861. Emission levels between the wastewater treatment operations at different facilities within this category vary. Two of the top five sources in the category treat their process

wastewater with technology that removes approximately 95% of HAPs. EPA must set standards for each HAP emitted by wastewater treatment operations, and those standards must, at a minimum, reflect the emission levels achieved by the relevant best performers.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

13. Hazardous Organic NESHAP

The hazardous organic NESHAP (HON) regulates organic HAP emissions from the synthetic organic chemical manufacturing industry (SOCMI), as well as equipment leaks in several other processes. Besides equipment leaks, the HON addresses four different kinds of emission points: process vents, storage vessels, transfer racks, and wastewater streams. EPA divides each of these emission points into two subcategories: Group 1 and Group 2. Group 1 emission points are subject to emission controls; Group 2 emission points are not. 59 Fed. Reg. 19,402, 19,405 (Apr. 22, 1994).

EPA does not claim that the emission standards it did set, for Group 1 emission points, reflect the emission level actually achieved by the relevant best performing sources. To the contrary, it states

> The information the EPA used in determining the source-wide floor consisted of the estimates of the number and characteristics of the model emission points, the emission control requirements currently in place for each point based on information available to the EPA, and the expected control efficiencies for the control technology. To determine the source-wide floor for existing sources at proposal, the EPA examined the supporting information to identify the emission characteristics of the emission points which had at least 12 percent of the points controlled by the reference control technology. This analysis was done for each kind of emission point.

59 Fed. Reg.

The agency claims that it lacked time to collect the data necessary to set floors that would satisfy this statutory requirement. That excuse is irrelevant. EPA has a statutory obligation to set emission standards for each HAP emitted by a source category, and those standards must, at a minimum, reflect the emission level actually achieved by the relevant best performing sources. Accordingly, EPA must reopen the rule, issue emission standards for each HAP emitted by Group 2 emission points and revise the emission standards for Group 1 emission points to reflect the statutorily required minimum stringency.

14. Hydrochloric Acid Production

Hydrochloric acid (HCl) production facilities emit HAPs including HCl and chlorine. EPA identifies the emission points at these facilities as process vents, storage tanks, transfer operations, equipment leaks, and wastewater. 66 Fed. Reg. 48,174, 48,176 (Sept. 18, 2001).

Although EPA sets emission limitations or work practice standards for four of the five emission points, it fails to regulate HAP emissions from wastewater. For both new and existing sources, EPA set the MACT floor for wastewater was "no emission reduction," claiming did not identify any add-on controls, process modifications, or other pollution-prevention measures currently in use to control HAP emissions from wastewater. *Id.* at 48,181.

"No control" standards contravene EPA's "clear statutory obligation to set emission standards for each listed HAP." *National Lime*, 233 F.3d at 634. EPA found that wastewater is part of the affected source at HCl production facilities. 68 Fed. Reg. 19,076, 19,079 (Apr. 17, 2003). Therefore, the Agency must reopen the rule and set emission standards for wastewater.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

15. Surface Coating of Large Appliances

The NESHAP for surface coating of large appliances fails to regulate emissions of inorganic HAPs. 67 Fed. Reg. 48,254 (July 23, 2002). EPA found that some specialty coatings used in this source category contain such inorganic HAPs as chromium, cobalt, lead, and manganese compounds. 65 Fed. Reg. 81,134, 81,137 (Dec. 22, 2000). The Agency speculates that these inorganic HAPs are not emitted into the ambient air; instead, they remain on the surfaces being coated, or they are deposited onto the floors, walls, and grates of the spray booths in which they are applied. EPA concludes that "inorganic HAP emission levels are expected to be very low, and have not been quantified." *Id.*

If inorganic HAPs are emitted from surface coating operations, EPA must set standards for them. Neither EPA's claim that inorganic HAP emissions have not been quantified nor its speculation that they inorganic HAPs are "expected" to be emitted low levels excuses the agency from this statutory requirement. EPA must reopen the rule and set the missing standards. *National Lime*, 233 F.3d at 634 (emphasis added).

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

16. Lime Manufacturing Plants

The lime manufacturing industry emits HAPs including hydrogen chloride (HCl), metals such antimony, arsenic, beryllium, cadmium, chromium, lead, manganese, mercury, nickel, and selenium, and organic HAPs. The NESHAP for lime manufacturing fails to regulate emissions of HCl based on EPA's claims that "HCl is a 'health threshold pollutant,' and that HCl levels emitted from lime kilns are below the threshold value within an ample margin of safety." 69 Fed. Reg. 394, 397 (Jan. 5, 2004).

Section 112(d)(4) of the Clean Air Act provides that EPA may consider threshold levels with respect to "pollutants for which a health threshold has been established." 42 U.S.C.

§ 7412(d)(4). The language of the statute indicates that the health threshold exception applies only when the scientific community has already accepted a pollutant's health threshold. By allowing EPA to issue standards under § 112(d)(4) only when health threshold has been established, Congress made clear that there must be an established threshold below which no adverse health effects will occur. In particular, it did not intend EPA to invoke § 112(d)(4) for a HAP unless there is no risk that that HAP will cause cancer. "EPA presumptively applies section 112(d)(4) only to HAP's that are not carcinogens because Congress clearly intended that carcinogens be considered nonthreshold pollutants." 63 Fed. Reg. 18,754, 18,765 (Apr. 15, 1998). HCl does not pass this test. EPA has admitted that it does not know whether HCl causes cancer. Further, for non-cancer risk, the level on which EPA relied is merely the lowest observable adverse effects level (LOAEL), *i.e.*, a level at which adverse effects do occur. Because HCl may be a carcinogen, and because a health threshold for HCl has not been definitively established, EPA must regulate HCl emissions from the lime manufacturing industry.

The rule also fails to regulate mercury emissions. In its proposed rule, EPA argues that it has no way of establishing an "achievable" floor standard for mercury "since no source controls mercury emissions using a means of control that can be duplicated by other sources." 67 Fed. Reg. 78,046, 78,057 (Dec. 20, 2002). EPA reiterates this argument in the preamble to the rule: "The only control technique would reflect control of the raw materials and/or fossil fuels. This control is not duplicable or replicable." 69 Fed. Reg. at 398. As discussed above, EPA must set standards based on the emission reductions that the best-performing sources actually achieve, regardless of what the Agency considers to be "achievable." *Cement Kiln*, 255 F.3d at 861. EPA must reopen the rule and set emission standards for HCl and mercury.

EPA violates the Clean Air Act by failing to set emission standards for the organic HAP that lime plants emit. EPA offers no rationale for that failure.

Finally, the standards that EPA does set fail to reflect the emission level actually achieved by the relevant best performing sources. Accordingly, they must be revised to satisfy § 112's minimum stringency requirements.

17. Manufacturing of Nutritional Yeast

Rather than basing floors for the nutritional yeast category on the emission levels achieved by the relevant best performing sources, EPA based them on limits derived from Wisconsin's and Maryland's Reasonably Available Control Technology standards (the RACT approach). 66 Fed. Reg. 27,876, 27,879 (Oct. 19, 1998). EPA does not even claim that the RACT approach yields floors that accurately reflect the relevant best sources' emission levels. Nor would any such claim be plausible. EPA admits that the five facilities with the RACT limits on which its floor is based were, in reality, achieving lower emission levels than the RACT limits required. Indeed, EPA requested "comments and data that support a potentially lower MACT emission limit. This information should also allow us to determine if new sources can achieve an even more stringent MACT, based on the best-performing source." *Id.* at 55,820.

Because EPA failed to show that RACT limits provide an accurate estimate of the relevant best sources performance and because the record shows that they do not provide an

accurate estimate, the agency's reliance on those limits to set floors was unlawful. The agency must reopen the rule and set floors for this category that accurately reflect the average emission level achieved by the best performing sources, as required by the Clean Air Act.

Additionally, EPA's rule fails to control emissions from wastewater. EPA concluded that "the MACT floor for wastewater emissions is no control." It declined to adopt beyond-the-floor standards because it determined that non-air quality health and environmental impacts, energy impacts, and costs were "unreasonably high." Nutritional Yeast NESHAP, 66 Fed. Reg. at 27,880. Further, EPA argued that "levels of acetaldehyde in wastewater are already reduced by process changes upstream." *Id.* at 27,881.

It is well established that "no control" floors are unlawful. EPA must set standards for each HAP that a category emits, and these standards must, at a minimum, reflect the average emission level actually achieved by the best performing sources. Nor is it relevant that one HAP may be reduced to some extent by upstream operations. Because wastewater operations are a source of HAP emissions, EPA must set standards for each HAP these emission points emit, and those standards must, at a minimum, reflect the emission level that the relevant best sources achieve. EPA must reopen the rule and set emission standard for each HAP emitted from wastewater operations.

18. Marine Tank Vessel Loading Operations

EPA divides the marine tank vessel loading operations category into several subcategories. The Agency fails to regulate HAP emissions from two of these subcategories—existing major source terminals that emit less than 10 tons per year of any individual HAP and less than 25 tons per year of combined HAPs from loading of marine tank vessels, and existing offshore terminals (major source terminals located 0.5 miles or more from shore). For both subcategories, EPA set a floor of "no control," claiming that too few sources in its database control emissions from marine tank vessel loading. 60 Fed. Reg. 48,388, 48,395 (Sept. 19, 1995). These "no control" standards contravene EPA's "clear statutory obligation to set emission standards for each listed HAP." *National Lime*, 233 F.3d at 634. EPA must set standards for each HAP that a category emits, and these standards must, at a minimum, reflect the average emission level actually achieved by the best performing sources.

EPA's exemption of sources with actual emissions of less than 10 tons per year of individual HAPs and 25 tons per of combined HAPs also contravenes § 112's definition of major source, which requires MACT standards for any source with the "potential" to emit 10 tons per year or more of any single HAP or 25 tons per year or more of any combination of HAPs. Under this definition, it is irrelevant whether some sources' actual emissions fall below those levels. EPA must reopen the rule and set emission standards based on the emission reductions that the best-performing sources actually achieve, regardless of how many of these sources currently use technology to control HAP emissions.

Finally, the standards EPA did set fail to reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise them to satisfy § 112's minimum stringency requirements.

19. Mercury Cell Chloro-Alkali Plants

Mercury cell chloro-alkali plants emit HAPs including mercury, hydrogen chloride (HCl), and chlorine. 68 Fed. Reg. 70,903, 70,904 (Dec. 19, 2003). EPA's unlawful requirements for mercury emissions are subject to a pending petition for review in the D.C. Circuit and a petition for administrative reconsideration with the agency. In addition, EPA's rule unlawfully fails to include emission standards for HCl and chlorine. *Id.* at 70,906. The Agency claims that HCl and chlorine are "health threshold pollutants" and that the levels emitted by these sources are below the threshold. *Id.* The Agency claims to utilize its authority under section 112(d)(4) of the Clean Air Act not to regulate these HAPs. *Id.*

By allowing EPA to issue standards under § 112(d)(4) only when health threshold has been established, Congress made clear that there must be an established threshold below which no adverse health effects will occur. In particular, it did not intend EPA to invoke § 112(d)(4) for a HAP unless there is no risk that that HAP will cause cancer. "EPA presumptively applies section 112(d)(4) only to HAP's that are not carcinogens because Congress clearly intended that carcinogens be considered nonthreshold pollutants." 63 Fed. Reg. 18,754, 18,765 (Apr. 15, 1998). HCl does not pass this test. EPA has admitted that it does not know whether HCl causes cancer. Further, for non-cancer risk, the level on which EPA relied is merely the lowest observable adverse effects level (LOAEL), *i.e.*, a level at which adverse effects do occur. Because HCl may be a carcinogen and because a health threshold for HCl has not been definitively established, EPA must regulate HCl emissions from mercury cell chloro-alkali plants.

20. Mineral Wool Production

Mineral wool production facilities emit carbonyl sulfide (COS). 64 Fed. Reg. 29,489, 29,490 (June 1, 1999). Yet EPA fails to set emission limits on COS at existing facilities. Id. at 29,491. Because EPA has a statutory obligation to set emission standards for each HAP that mineral wool production facilities emit, its failure to set standards for COS emitted by these facilities is unlawful. See, e.g., National Lime, 233 F.3d at 634. Accordingly, EPA must reopen its regulations for mineral wool facilities and set COS emission standards.

Mineral wool production facilities also emit phenol, formaldehyde, and other organic HAPs. Mineral Wool NESHAP, 64 Fed. Reg. at 29,490. EPA fails to set standards for any HAP except formaldehyde, claiming that formaldehyde is a surrogate for phenol emissions at these facilities. *Id.* at 29,491. Even if that claim were true, EPA does not claim that formaldehyde, or any other pollutant, is a surrogate for the other organic HAPs that mineral wool facilities emit. Accordingly, EPA's failure to set emission standards for such other organic HAPs is unlawful.

To justify its refusal to set standards for phenol, EPA argues that "when the formaldehyde limit is met through use of an incinerator, phenol emissions are also reduced by the same incinerator." 62 Fed. Reg. 25,370, 25,376 (May 8, 1997). Failure to set specific standards for phenol is unlawful, however, unless EPA shows that formaldehyde is a valid surrogate for phenol. Merely claiming that both are reduced by the same incinerator does not suffice. EPA also must show that the only factor affecting phenol emissions is the use of an incinerator to control formaldehyde. EPA makes no such claim. Further, it admits that some

ovens are controlled with technologies other than an incinerator, and does not claim that the use of such other unspecified technology is the only factor affecting phenol emissions at those facilities. To comply with the CAA, EPA must provide an adequate explanation of why formaldehyde is an appropriate surrogate for or each HAP emitted by mineral wool facilities, or set emission limits for each HAP individually.

Finally, EPA's formaldehyde standards do not reflect the actual formaldehyde emission levels achieved by the relevant best sources. Accordingly, EPA must revise these standards to satisfy § 112(d)'s minimum stringency requirements.

21. Oil and Natural Gas Production

EPA fails to regulate major-source glycol dehydration units with actual annual average natural gas throughputs of less than 85 thousand m^3/day or with actual average benzene emissions lower than 0.90 Mg/yr. 64 Fed. Reg. 32,609, 32,613 (June 17, 1999). For these units, EPA sets the MACT floor at no control and determines that a beyond-the-floor regulation is not cost effective. *Id.* EPA justifies this by claiming that it "could not determine any level of emission control for [such units]." 63 Fed. Reg. 6288, 6293 (Feb. 6, 1998). It is well established that "no control" floors are unlawful. EPA must set standards for each HAP that a category emits, and these standards must, at a minimum, reflect the average emission level actually achieved by the best performing sources. To comply with the Clean Air Act, EPA must set emission standards for each HAP emitted by glycol dehydration units.

Further, the standards that EPA did set fail to reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency requirements.

22. Petroleum Refineries

The HAPs emitted by petroleum refineries include 2,2,4-Trimethylpentane, methyl tert butyl ether, benzene naphthalene, cresols/cresylic acid, phenol, ethylbenzene, toluene, hexane, and xylenes. 60 Fed. Reg. 43,244, 43,245 (Aug. 18, 1995). EPA sets no control or monitoring requirements for wastewater streams located at refineries with total annual benzene loading of less than 10 megagrams per year. *Id.* at 43,247-48.

It is well established that "no control" floors are unlawful. EPA must set standards for each HAP that a category emits, and these standards must, at a minimum, reflect the average emission level actually achieved by the best performing sources. EPA lacks authority to exempt any emission point from emission standards. EPA must set emission standards for all emissions points at the source, including wastewater streams with annual benzene loading less than 10 megagrams per year.

For refineries with total annual benzene loading of more than 10 megagrams per year, EPA only regulates benzene emissions. *Id.* EPA must set standards for each HAP that a category emits. EPA does not claim that benzene is a surrogate for the other HAPs emitted from wastewater streams, far less demonstrate that it is a reasonable one. Accordingly, EPA must

reopen the refineries rule and set emission standards for all the HAPs that are emitted from wastewater streams.

Further, EPA's benzene standards do not reflect the actual benzene emission levels achieved by the relevant best performing units. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency requirements.

EPA sets no control or monitoring requirements for miscellaneous process vents with VOC emissions less than 33 kilograms per day for existing sources and 6.8 kilograms per day for new sources. 60 Fed. Reg. at 43,247. EPA also states that no controls or inspections are required for so-called Group 2 storage vessels, which are all vessels that do not have a design storage capacity and a maximum true vapor pressure above the values specified in the regulation. *Id.* It is well established that "no control" floors are unlawful. EPA must set standards for each HAP that a category emits, and these standards must, at a minimum, reflect the average emission level actually achieved by the best performing sources. EPA must reopen the rule and set an emission standard for these vents and storage vessels.

Further, EPA completely exempts hydrogen plant vents from any control requirements, even those that emit more than 33 kilograms per day of VOCs. 63 Fed. Reg. 31,358, 31,359 (1998). In justifying this exemption, EPA claims that implementing controls would be too costly. However, the CAA "includes minimum stringency requirements for emission standards that apply without regard to either costs or the other factors and methods listed in section 7412(d)(2)." *National Lime*, 233 F.3d at 629. EPA must reopen this rule to set emission standards for hydrogen plant vents.

23. Phosphoric Acid Manufacturing and Phosphate Fertilizers Production

The HAPs emitted by these facilities include hydrogen fluoride, arsenic, beryllium, cadmium, chromium, manganese, mercury, and nickel. EPA fails to set emission standards for any of these HAPs, and claims particulate matter is a surrogate for all metal HAPs, including mercury. Proposed Rule, 61 Fed. Reg. 68,429, 68,435 (Dec. 27, 1996).

EPA's failure to set emission standards for specific HAPs is unlawful absent a valid showing that particulate matter is a reasonable surrogate for each one of them. EPA provides no evidence showing why particulate matter is a valid surrogate for any metal HAP emitted by this category. In particular, the agency fails to show that controlling PM is the only means by which facilities achieve reductions in emissions of metal HAPs, as D.C. Circuit precedent requires. Further, particulate matter is plainly not an appropriate surrogate for mercury, as EPA itself has recognized repeatedly. Accordingly, EPA's failure to set emission standards for mercury and the other metal HAPs is unlawful.

In addition, EPA's PM standards do not reflect the actual PM emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

EPA also fails to set emission standards for hydrogen fluoride output in dryers and metal HAP emitted by various process lines. 64 Fed. Reg. 31,358, 31,361 (June 10, 1999). If HF and

metal HAPs are emitted by these processes, the agency must set emissions standards for them, and those standards must, at a minimum, reflect the average emission level achieved by the relevant best performing sources. Accordingly, EPA must reopen the phosphoric acid manufacturing and phosphate fertilizers production rule, and set all of the emission standards required by the Clean Air Act.

24. Polyether Polyols Production

Polyether polyols production facilities emit several organic HAPs, including ethylene oxide, propylene oxide, hexane, and toluene. 64 Fed. Reg. 29,419, 29,420 (June 1, 1999). EPA fails to set standards for nonepoxide organic HAPs from vents at facilities where the total vent output of nonepoxide organic HAPs is less than 11,800 kilograms per year. *Id* at 29,425. Because EPA must set an emission standard for each listed HAP at each major source in this category, and lacks authority to exempt any sources, the agency's rule violates the Clean Air Act and must be reopened and corrected. *See National Lime*, 233 F.3d at 634.

In addition, the standards EPA did set, for vents at facilities with a total organic HAP output greater than 11,800 kilograms per year, do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

25. Polymers and Resins I

According to EPA, manufacturers of Group I polymers and resins emit organic HAPs including n-hexane, styrene, 1,3-butadiene, acrylonitrile, methyl chloride, hydrogen chloride, carbon tetrachloride, chloroprene, and toluene. 60 Fed. Reg. 30,801, 30,801 (June 12, 1995). For the butyl rubber (BR), halobutyl rubber (HBR), epichlorohydrin elastomers (EPI), Hypalon (HYP), neoprene (NEO), nitrile butadiene rubber (NBR), nitrile butadiene latex (NBL), polysulfide rubber (PSR), and styrene butadiene latex (SBL) subcategories, EPA fails to set emission standards for HAPs emitted through back-end processes at existing sources. 61 Fed. Reg. 46,906, 46,910 (Sept. 5, 1996). For the BR, EPI, HBR, HYP, NEO, NBL, NBR, and SBL subcategories, EPA fails to control HAPs emitted through back-end processes at new sources. *Id.* at 46,911. And, for the EPR, BR, and HBR subcategories at existing sources, EPA exempts halogenated vent streams that were controlled by flare or boiler before June 12, 1995. *Id.* at 46,910.

EPA lacks authority to exempt any emission points or to decline to set emission standards for any HAP. Accordingly, EPA must reopen the rule and set emission standards for each HAP and emission point in these subcategories, as mandated by the CAA.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Therefore, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

26. Polymers and Resins III

Manufacturers of Group III polymers and resins emit organic HAPs, including formaldehyde, methanol, phenol, xylene, and toluene. 65 Fed. Reg. 3275, 3276 (Jan. 20, 2000). Yet EPA sets no emission standards for HAPS emitted by storage vessels and continuous process vents at existing sources. *Id.* at 3279. EPA argues that because, for continuous process vents, only one existing source uses control technology at the time of proposal, it is not required to set an emission standard. National Emission Standards for Group 3 Polymers and Resins; Proposed Rule, 63 Fed. Reg. 68,831, 68,843 (Dec. 14, 1998). To the contrary, EPA has a "clear statutory obligation to set emission standards for each listed HAP," even if the best-performing sources are not using control technology to limit their emissions. *National Lime*, 233 F.3d at 634. Accordingly, EPA must reopen the rule and set an emission standard for storage vessels and continuous process vents at existing sources.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

27. Polymers & Resins IV

EPA acknowledges that many organic HAPs are emitted during the manufacture of Group IV polymers and resins. 61 Fed. Reg. 48,208, 48,208 (Sept. 12, 1996). However, EPA fails to set emission standards for HAPs released into the air through wastewater from facilities using the ASA/AMSAN process. *Id.* at 48,212. EPA also fails to set emission standards for HAPs emitted from equipment leaks at facilities with a PET–TPA continuous high viscosity multiple end finisher. *Id.* at 48,212-13. For new SAN Batch facilities, EPA fails to set emission standards for HAPs emitted through wastewater. *Id.* at 48,213.

EPA has a "clear statutory obligation to set emission standards for each listed HAP" emitted by a source category, regardless of whether a particular HAP is currently controlled with technology. *National Lime*, 233 F.3d at 634. EPA must reopen the rule and set an emission standard for wastewater in the ASA/AMSAN process and new SAN Batch facilities, as well as equipment leaks at facilities using PET–TPA continuous high viscosity multiple end finisher.

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

27. Primary Lead Smelting

Primary lead smelters emit arsenic, antimony, cadmium, lead, and other metal HAPs. 64 Fed. Reg. 30,193, 30,194 (June 4, 1999). EPA's rule, however, provides an emission standards for only one HAP, lead. The agency claims that lead is a surrogate for all the others, including volatile metals like mercury, acid gases, and volatile organic compounds.

EPA's failure to set standards for the HAPs other than lead, absent a showing that lead is a valid surrogate for those HAPs, is unlawful. In particular, EPA must show that lead control "is

the only means by which facilities 'achieve' reductions" in the pollutants for which it allegedly serves as a surrogate. *National Lime Ass'n*, 233 F.3d at 639. In the primary lead smelting rule, EPA does not even so claim. EPA must reopen the rule and either provide a valid explanation for why lead is a reasonable surrogate for all the other HAPs that primary lead smelters emit, including volatile metals like mercury, acid gases, and volatile organic compounds, or issue emission standards for additional HAPs.

Further, EPA's PM standard does not reflect the emission level achieved by the relevant best performing sources. Accordingly, the agency must reopen the rule and set floors for PM in accordance with Clean Air Act § 112(d)(3).

28. Publicly Owned Treatment Works (POTW)

EPA fails to regulate HAP emissions of non-industrial POTW as required by section 112 of the Clean Air Act, 42 U.S.C. § 7412. 64 Fed. Reg. 57,572, 57,575 (Oct. 26, 1999). EPA must issue standards for each HAP that these facilities emit, and such standards must not be less stringent than emission level actually achieved by the relevant best performing sources.

Of the five non-industrial POTW sources EPA considers to be best controlled, only one uses control devices with the intent of removing HAP emissions. 63 Fed. Reg. at 66,090. EPA claims the remaining four do not implement any control technology designed to remove HAP emissions. *Id.* EPA further claims "[c]omputation of an arithmetic average of the performance among the one POTW treatment plant with HAP emission controls and the four POTW treatment plants without controls would be meaningless because there is no continuum of performance among the sources." *Id.* The agency further argues that using either the median or the mode, based on control technology, would result in a MACT floor of no control. *Id.* Based on those arguments, EPA set the floor at no control. *Id.*

It is well established that "no control" floors are unlawful. EPA must set standards for each HAP that a category emits, and these standards must, at a minimum, reflect the average emission level actually achieved by the best performing sources — *i.e.*, those with the lowest emissions — regardless of whether sources are using technology to control their emissions.

EPA further argues that pretreatment by dischargers is the only viable option for controlling HAP emissions to achieve a meaningful HAP reduction at a reasonable cost that EPA has identified. POTW Proposal, 63 Fed. Reg. at 66,090. However, section 112 of the Clean Air Act "includes minimum stringency requirements for emission standards that apply without regard to either costs or the other factors and methods." *National Lime*, 233 F.3d at 629. EPA must set emissions standards for existing non-industrial POTW.

With respect to industrial POTW, EPA argues oddly that under each "industrial discharger's MACT, the POTW provides air pollution control, generally under a contractual agreement." 64 Fed. Reg. at 57575. EPA further states that, under its rule, whatever the discharger's requirements are will become directly enforceable against the POTW. *Id.* Under Clean Air Act § 112, standards covering HAP emissions from industrial POTW's must include standards for each HAP emitted by such facilities and must reflect the emission level actually achieved by the relevant best performing sources. Contrary to EPA's argument, the existing

controls for the dischargers do not satisfy this requirement regardless of whether they are reflected in a contract between the discharger and the industrial POTW and regardless of whether they are directly enforceable against the POTW. EPA must reopen the POTW rule to set standards for industrial POTW that fully satisfy the Clean Air Act.

29. Pulp and Paper Mills.

EPA failed to regulate emissions of HCl from new and existing sources used in chemical recovery processes at pulp and paper mills. Because EPA has not satisfied its "'clear statutory obligation to set emission standards for each listed HAP,'" *Sierra Club*, 479 F.3d at 883 (quoting *National Lime*, 233 F.3d at 634), the agency must reopen the standards and set MACT floors for HCl emissions.

EPA attempts to justify its failure to regulate HCl emissions by arguing that "no further control is necessary because HCl is a 'health threshold pollutant,' and HCl levels emitted from recovery furnaces are below the threshold value within an ample margin of safety." 63 Fed. Reg. at 18,765. Section 112(d)(4) of the Clean Air Act provides "[w]ith respect to pollutants for which a health threshold has been established, the Administrator may consider such threshold, with an ample margin of safety, when establishing emission standards under this section." 42 U.S.C. § 7412(d)(4). Thus it does not allow EPA to decline to set emission standards, as the agency did here, but only to consider established health thresholds, with an ample margin of safety, "when establishing emission standards." *Id.* For this reason alone, EPA's rule is unlawful and must be reopened.

Further, § 112(d)(4) does not apply at all to pollutants such as HCl for which a health threshold has not been established. EPA itself has recognized that § 112(d)(4) applies "only to HAP's that are not carcinogens because Congress clearly intended that carcinogens be considered nonthreshold pollutants." 63 Fed. Reg. at 18,765.

EPA has acknowledged repeatedly that it does not know whether HCl is carcinogenic, HCl is not a pollutant for which a health threshold has been established. In 2006, for example, EPA stated "the data are inadequate to make a determination as to whether HCl is carcinogenic in either humans or animals, so EPA has not developed an assessment for the carcinogenicity of HCl." 71 Fed. Reg. 76518, 76542 (December 20, 2006). Because EPA does not know whether or not HCl causes cancer, it cannot plausibly claim that HCl is a threshold pollutant. Significantly, the agency has admitted that the purpose of § 112(d)(4)'s "established health threshold" requirement is to ensure that EPA does not issue standards under § 112(d)(4) unless there is "no risk" of adverse health effects. *NRDC v. EPA*, 489 F.3d 1250 (D.C. Cir. 2007), EPA Br. at 53-54 (*quoting* 5 Legislative History at 8516).

EPA's attempts to rely on its statements about HCl in previous rules are unfounded and, indeed, merely weaken its arguments further. In the 1998 rule on which the agency primarily relies, the agency states that is classifying HCl as a "Group D pollutant" — i.e., one for which EPA lacks data about carcinogenicity — for the purposes of that rule only. It bears emphasis that because classification as a Group D pollutant merely underscores that EPA does not know whether a pollutant can or cannot cause cancer, it cannot possibly support a finding that that pollutant is a threshold pollutant with respect to cancer. But even if such a classification

somehow supported EPA's position, the agency made clear in the 1998 rule that it was making that classification "[f]or the purposes of this action" only. 63 Fed. Reg. 18754, 18766 (April 15, 1998) (emphasis added). Thus, it does not even purport to support making such a classification in other actions.

Nor has EPA identified a threshold for non-cancer effects. The threshold EPA claims to have identified as the RfC — i.e., the long term threshold — must be a level below which no adverse health effects occur. The level that EPA claims is a threshold does not purport to meet that requirement. To the contrary, the 1998 rulemaking makes clear that it was: (1) "based on a single animal study which only used one dose"; (2) looked only at respiratory effects, not effects on other bodily systems; and (3) identified only a lowest observed adverse effects level (LOAEL) at which adverse effects did occur, not a threshold below which adverse effects do not occur. 63 Fed. Reg. 18766-18767 (*citing* EPA, 1995, Integrated Risk Information System (IRIS) RfC for HCl), Ex. __ hereto.

Effectively acknowledging that exposure to HCl does damage people's health, EPA has argued that

> The existence of a threshold for noncancer effects of HCl is established by general toxicological principles, i.e., that organisms are able to repair some amount of corrosive tissue damage of the type caused by HCl. If the damage does not exceed an organism's ability to repair it, then no adverse effects will occur.

71 Fed. Reg. at 76542. Thus, EPA stakes out a position truly astonishing for an agency tasked with protecting public health and the environment: that it does not matter if pollution damages Americans' lung tissue so long the damage does not exceed our ability to repair it. Apart from the ethical issues that sort of argument raises, it is beyond obvious that Congress did not intend EPA to invoke § 112(d)(4) when doing so would lead to tissue damage — whether that damage was permanent or repairable. As EPA has conceded elsewhere, Congress intended EPA to invoke § 112(d)(4) only when there is "no risk" of adverse health effects. Damage to an "organism's" tissue — *e.g.* the lung tissue of a child — is an adverse health effect

In direct violation of § 112's well established mandate to set standards for each listed HAP that a category emits, EPA also failed to set emissions standards for pulp and paper mills' mercury emissions. It is undisputed that pulp and paper mills emit mercury. EPA notes that "[a]lmost all metals appearing on the section 112(b) list," including mercury, are emitted by pulp and paper combustion sources, but the rule regulates only PM HAP emissions and/or total gaseous organic HAP emissions.

In addition, EPA failed to set standards for dioxins. EPA does not mention dioxins anywhere in the rule, but kraft recovery furnaces do emit dioxins, according to EPA's Source Category Listing for Section 112(d)(2) Rulemaking Pursuant to Section 112(c)(6) Requirements. 63 Fed. Reg. 17,838, 17,848 tbl.1 (Apr. 10, 1998). EPA uses methanol as a surrogate to regulate total gaseous organic HAP emissions from kraft recovery furnaces. The agency does not claim that it is using methanol as a surrogate for dioxins. Such a claim would fail because, as EPA has acknowledged,

> Wet and dry air pollution control systems are generally not considered to be dioxin/furan control systems because their primary function is to remove metals and/or total chlorine from the combustion gas. They generally do not remove dioxin/furans from the incinerator flue gas unless they are used in tandem with carbon injection systems or carbon beds.

69 Fed. Reg. at 21,214. By failing to set dioxin standards, EPA violated its "'clear statutory obligation to set emission standards for each listed HAP.'" *Sierra Club*, 479 F.3d at 883 (quoting *National Lime*, 233 F.3d at 634). EPA must reopen the standards and set MACT floors for dioxin emissions.

Where EPA set standards at all, they fail to satisfy § 112(d)(3)'s floor requirements. EPA's PM standard for existing NDCE and DCE recovery furnaces does not reflect "the emission level actually achieved by the best performers (those with the lowest emission levels)." *Sierra Club*, 479 F.3d at 880. Instead, EPA selected floors equivalent to a new source performance standard (NSPS) promulgated in 1978. EPA does not even claim that this NSPS limit reflects the performance of the relevant best sources. To the contrary, EPA defends its floor approach by arguing that the floors "reasonably reflect the level of performance achievable in practice by the average of the best-performing 12 percent of sources." CITE. Thus, the record makes clear that EPA's floors reflect an emission level that the agency regards as "achievable" through the use of a chosen control technology rather than the level actually achieved by the relevant best sources. This is precisely the floor approach rejected repeatedly as unlawful by the D.C. Circuit. *Sierra Club*, 479 F.3d at 880; *Cement Kiln*, 255 F.3d at 861.

Further, the record indicates that the NSPS limit does not reflect the best sources' emission level. As a "number of commenters" pointed out to EPA during the rulemaking, "the technology reflected in the NSPS . . . is an old technology and . . . numerous sources are achieving emissions reductions well beyond the NSPS." EPA does not dispute this point, but insists that its floors reflect what is "achievable in practice by the average of the best-performing 12 percent of sources." EPA's unlawful achievability argument cannot excuse its failure to set floors reflecting the best sources' emission level.

EPA attempts to defend its floor approach for NDCE recovery furnaces by arguing that it has long-term PM emission data for only 8 of the 128 NDCE recovery furnaces operating at U.S. kraft and soda pulp mills. Seven of the eight furnaces "consistently met the NSPS limit" of 0.10 g/dscm of flue gas corrected to 8 percent oxygen. Emissions from these seven sources "ranged from 0.002 to 0.10 g/dscm." If the information from these eight sources is the only data that EPA considers adequate for setting a MACT floor, then EPA must begin by identifying the best-performing 12 percent of these sources—in this case, a single source. Monthly emissions from the best-performing source "varied from 0.002 to 0.025 g/dscm." The highest emission level recorded by the best-performing source is merely one-quarter of EPA's chosen floor. Alternatively, if EPA believes that it needs more data to set a lawful floor, the agency must gather such data. It is up to EPA to devise a floor approach capable of satisfying section 112's floor requirements. *Cement Kiln*, 255 F.3d at 865. Regardless of which approach it takes, EPA cannot avoid its obligation to set a floor that reflects "the emission level actually *achieved* by the best performers." *Sierra Club*, 479 F.3d at 880.

EPA's defense of its floor approach for DCE recovery furnaces is equally unavailing. EPA has long-term emission data for only four of the eighty-three DCE recovery furnaces operating at U.S. kraft and soda pulp mills. The agency concludes that data from these sources "show an ability to achieve the NSPS level." EPA argues that "[t]he combination" of these four DCE recovery furnaces and three additional furnaces subject to the NSPS limit indicates that "greater than 6 percent of DCE recovery furnaces are capable of meeting the NSPS PM limit on a long-term basis with ESP's." Once again, EPA makes clear that its floor reflects an emission level that the agency regards as achievable through the use of a chosen control technology rather than the level actually achieved by the relevant best sources. Because the D.C. Circuit has repeatedly rejected this floor approach as unlawful, EPA must reopen the standard and set a MACT floor reflecting the emission level actually achieved by the relevant best performers.

Nor do EPA's PM floors for new NDCE and DCE recovery furnaces reflect the emission levels actually achieved by the relevant best performer. In setting the floor, EPA identified the best performing of the eight NDCE recovery furnaces for which it had long-term PM emission data. Monthly emissions from this source "varied from 0.002 to 0.025 g/dscm" corrected to 8 percent oxygen over a six-year period. "Taking the variability of the data into consideration," EPA selected a MACT floor of 0.034 g/dscm, a 36 percent increase over the highest recorded emission level from the best-performing source. Although the D.C. Circuit has recognized that "'a given control can experience operational variability,'" EPA's chosen floor must "reasonably estimate[] the actual variability of the best-performing source," *Sierra Club*, 479 F.3d at 881-882; *see also Northeast Maryland Waste Disposal Authority v. EPA*, 358 F.3d 936, 954 (D.C. Cir. 2004) ("EPA must 'demonstrate with substantial evidence—not mere assertions' that the chosen floors 'represent "a reasonable estimate of the performance of the [best-performing] units."'" (quoting *Cement Kiln*, 255 F.3d at 866) (alteration in original)). EPA does not even claim that its chosen floor reflects the actual performance of the best source.

EPA failed to set any standard at all for total gaseous organic HAP emissions for existing NDCE recovery furnaces. Initially, EPA argued that too few NDCE recovery furnaces ("approximately 5 percent") were using dry ESP systems; nearly all the remaining furnaces were using less effective wet ESP systems. After a commenter "provided a list of 13 NDCE recovery furnaces equipped with dry ESP systems, which is a sufficient number of recovery furnaces to define the MACT floor," EPA declined once again to set a standard. This time it argued that adopting a MACT floor based on the performance of the best technology currently in use "would create disincentives that would discourage possible conversion to [an] even more promising gasification technology." Neither of these rationales can excuse the agency's failure to set a standard. The D.C. Circuit has repeatedly held that EPA has a "clear statutory obligation to set emission standards for each listed HAP," *Sierra Club*, 479 F.3d at 883. Moreover, "'[s]ection 7412(d)(3) requires only that EPA set floors at the emission level achieved by the best-performing sources. If EPA cannot meet this requirement using the [maximum achievable control technology] methodology, it must devise a different approach capable of producing floors that satisfy the Clean Air Act.'" *Sierra Club*, 479 F.3d at 882 (quoting *Cement Kiln*, 255 F.3d at 865). EPA must reopen the standard, identify the best-performing sources—which it made no effort to do here—and set a MACT floor reflecting the emission level actually achieved by the relevant best performers.

For total gaseous organic HAP emissions from new NDCE and DCE recovery furnaces, EPA failed to set a MACT floor reflecting "the emission control that is achieved in practice by the best controlled similar source." § 7412(d)(3). Instead, EPA first chose a particular control technology to "represent the best-controlled source for total gaseous organic HAP emissions." It then selected as the MACT floor an emission level that it regards as "achievable" through the use of the chosen control technology. EPA does not even claim, however, that its chosen floor reflects "the emission level actually *achieved*" by the single best source. Further, any such claim would be at odds with the record. EPA had emission data from three sources equipped with the chosen control technology—a dry ESP system—but the agency based its floor on data from the worst-performing of these sources. ("The methanol emission level corresponds to the highest three-run average obtained for a dry ESP system on an NDCE recovery furnace plus an additional amount to account for the variability in the dry ESP system data set and the lack of long-term data." CITE.) EPA must reopen the standard and set a MACT floor reflecting the emission level actually achieved by the best-performing similar source.

EPA failed to set any standard at all for total gaseous organic HAP emissions from existing DCE recovery furnaces. The DCE recovery furnace system includes a black liquor oxidation (BLO) system; forty-six of the forty-eight pulp mills with DCE recovery furnaces also have BLO systems. Forty-two of the BLO systems are air-based; only two of these systems control gaseous organic HAP emissions with technology. EPA attempts to justify its floor of "no control" by arguing that "the two air-based BLO units with controlled emissions represent less than 6 percent of DCE recovery furnace systems." This justification is unavailing. EPA has a "'clear statutory obligation to set emission standards for each listed HAP,' which does not allow it to 'avoid setting standards for HAPs not controlled with technology.'" *Sierra Club*, 479 F.3d at 883 (quoting *National Lime Ass'n v. EPA*, 233 F.3d 625, 634 (D.C. Cir. 2000)). Moreover, "'[s]ection 7412(d)(3) requires only that EPA set floors at the emission level achieved by the best-performing sources. If EPA cannot meet this requirement using the MACT methodology, it must devise a different approach capable of producing floors that satisfy the Clean Air Act.'" *Sierra Club*, 479 F.3d at 882 (quoting *Cement Kiln*, 255 F.3d at 865). EPA must reopen the standard, identify the best-performing sources, and set a MACT floor reflecting the emission level that those sources actually achieve.

For PM emissions from existing lime kilns, EPA failed to set a MACT floor reflecting "the emission level actually *achieved* by the best performers (those with the lowest emission levels)." *Sierra Club*, 479 F.3d at 880. Instead, the agency first chose a particular control technology—ESP—and then identified an emission level that it considers "achievable by the technology that represents the MACT floor." EPA does not even claim that its chosen floor reflects "the emission level actually *achieved*" by the relevant best performers. Further, any such claim would be at odds with the record. Rather than attempting to identify the average of the best-performing 12 percent of sources, EPA points to a wide range of emission levels that, based on available data from compliance tests, lime kilns equipped with ESP "can achieve." EPA chose as the MACT floor the highest emission level recorded by a lime kiln using ESP. The agency attempts to justify its choice by citing a need to "[a]ccount for . . . variability" in the data, but it does not claim that its chosen emission level reflects the variability experienced by the best-

performing sources. EPA must reopen the standard, identify the best-performing sources, and set a MACT floor reflecting the emission level that those sources actually achieve.

For PM emissions from new lime kilns, EPA failed to set a MACT floor reflecting the emission level actually achieved by the relevant best performer. EPA has long-term data for only 4 of the estimated 192 lime kilns operating at U.S. kraft and soda mills. Monthly emissions from the best-performing of these four lime kilns "varied from 0.002 to 0.018 g/dscm" corrected to 10 percent oxygen over a seven-year period. Thus, EPA does not even know — and made no serious effort to determine — what emission level the single best kiln is achieving. Further, EPA selected a MACT floor of 0.023 g/dscm, a 28 percent increase over the highest of the four emission tests it had. The agency argues that "the variability in the data" justifies its choice, but it does not even claim that its chosen floor reflects the actual variability of the best-performing source. Although the D.C. Circuit has recognized that "'a given control can experience operational variability,'" EPA's chosen floor must "reasonably estimate[] the actual variability of the best-performing source," *Sierra Club*, 479 F.3d at 881-882; *see also Northeast Maryland Waste Disposal Authority v. EPA*, 358 F.3d 936, 954 (D.C. Cir. 2004) ("EPA must 'demonstrate with substantial evidence—not mere assertions' that the chosen floors 'represent "a reasonable estimate of the performance of the [best-performing] units."'" (quoting *Cement Kiln*, 255 F.3d at 866) (alteration in original)). EPA must either provide evidence as to how a 28 percent increase over the highest emission level recorded in seven years could accurately reflect the best performer's actual variability, or it must choose another standard that can satisfy this requirement.

EPA failed to set any standard at all for gaseous organic HAP emissions from new and existing lime kilns and smelt dissolving tanks. EPA argues that gaseous organic HAP emissions from lime kilns and smelt dissolving tanks are "primarily attributable" to the use of HAP-contaminated process waters, and "[t]hese process waters are being regulated as part of the final NESHAP for noncombustion sources at pulp and paper mills." EPA has a statutory duty to set emission standards for each HAP emitted from lime kilns and smelt dissolving tanks, and such standards must, at a minimum, match the emission levels actually achieved by the relevant best sources. It is irrelevant whether emissions from lime kilns and smelt dissolving tanks are primarily attributable to wastewater from other processes or whether those other processes are regulated. It is undisputed that lime kilns and smelt dissolving tanks are sources, and EPA must set emission standards for these sources that fully satisfy the Clean Air Act. EPA must reopen the standards and set MACT floors for gaseous organic HAP emissions from new and existing lime kilns and smelt dissolving tanks.

For PM emissions from existing smelt dissolving tanks, EPA failed to set MACT floors reflecting "the emission level actually *achieved* by the best performers (those with the lowest emission levels)." *Sierra Club*, 479 F.3d at 880. Instead, EPA selected floors equivalent to a new source performance standard (NSPS) promulgated in 1976. EPA does not even claim that this NSPS limit reflects the performance of the relevant best sources. To the contrary, EPA argues that "no long-term PM emission data are available for SDT's equipped with wet scrubbers that are subject to the NSPS limit [but] the prevalence of wet scrubbers . . . and the high PM removal efficiencies achieved with this technology are sufficient to establish wet scrubbers as the proposed MACT floor PM control technology" for existing sources. Thus, the record makes

clear that EPA's floor reflects an emission level that the agency regards as achievable through the use of a chosen control technology rather than the level actually achieved by the relevant best performers. This is precisely the floor approach rejected repeatedly as unlawful by the D.C. Circuit in *Sierra Club* and *Cement Kiln*.

Further, the record indicates that the NSPS limit does not reflect the best sources' emission level. Although EPA has no long-term emission data from sources equipped with wet scrubbers and subject to the NSPS limit, it does have long-term data from three sources subject to a state permit limit 40 percent lower than the NSPS. In setting the MACT floor, EPA cannot ignore data from these sources, which achieve emission reductions well beyond the NSPS. EPA must reopen the standard and set a MACT floor reflecting the emission level actually achieved by the best-performing sources. If the agency believes that it needs more data to set a lawful floor, then it must gather such data. It is up to EPA to devise a floor approach capable of satisfying section 112's floor requirements. *Cement Kiln*, 255 F.3D at 865.

For PM emissions from new smelt dissolving tanks, EPA failed to set a MACT floor reflecting the emission level actually achieved by the relevant best performer. Rather than identifying the best-performing similar source, EPA identified a particular control technology—high-efficiency wet scrubbers used by three sources subject to a state permit limit more stringent than the national new source performance standard—to "represent the best-performing PM control systems." EPA then set the MACT floor at the same emission level as the state permit limit. It does not even claim that this floor reflects the performance of the relevant best source. Instead, EPA attempts to justify its floor approach by arguing that smelt dissolving tanks equipped with high-efficiency wet scrubbers "can achieve" the state permit limit it has adopted as the MACT floor. This is precisely the floor approach rejected repeatedly as unlawful by the D.C. Circuit in *Sierra Club* and*Cement Kiln*.

Further, the record indicates that the state permit limit does not reflect the best source's emission level. EPA reviews long-term emission data from three sources subject to the state permit level—rather than the single best-performing source—and reports that "[c]ollectively," monthly emissions from the three sources "varied from 0.0045 to 0.055 kg/Mg" of black liquor solids fired over a two- to six-year period. The agency adopted a MACT floor of 0.06 kg/Mg of black liquor solids fired; the only explanation it provides is that smelt dissolving tanks equipped with high-efficiency wet scrubbers "can achieve" that emission level. EPA must reopen the standard and set a MACT floor reflecting the emission level actually achieved by the best-performing similar source.

For PM emissions from existing sulfite pulp mills, EPA failed to set a MACT floor reflecting "the emission level actually *achieved* by the best performers (those with the lowest emission levels)." *Sierra Club*, 479 F.3d at 880. To begin with, EPA selected a particular technology—fiber-bed demister systems—as the "best-performing control technology." In setting the MACT floor, the agency considered only data from sources equipped with that technology. EPA's floors must reflect the emission level achieved by the best performing sources (those with the lowest emissions) not a level achieved by sources using a chosen control technology. *Sierra Club*, 479 F.3d at 880.

EPA does not even claim that its floor reflects the emission level actually achieved by the relevant best performers. Because there are fewer than thirty sources in the subcategory, EPA must set a MACT floor reflecting the "average emission limitation achieved by the best performing 5 sources." Rather than identifying the best-performing five sources, EPA selected a floor that it considers achievable through the use of a technology that "at least five sources are equipped with." Further, the record indicates that the floor does not reflect the best sources' emission level. EPA considered data from only two sources, both of which use fiber-bed demister systems. Emissions from these sources "ranged from 0.005 to 0.088 g/dscm" corrected to 8 percent oxygen over a six- to seven-year period. EPA selected a MACT floor of 0.092 g/dscm, arguing only that it must "account for variability in the data." EPA must reopen the standard, identify the best-performing sources, and set a MACT floor reflecting the emission level that those sources actually achieve.

For PM emissions from new sulfite pulp mills, EPA failed to set a MACT floor reflecting the emission level actually achieved by the relevant best performer. To begin with, EPA considered only data from sources equipped with fiber-bed demister systems, its chosen "MACT floor control technology." Because EPA must set a floor reflecting the performance of the source with the lowest emission levels, not the best performer using a particular technology, it cannot decline to consider data from sources using other technologies.

Monthly emissions from "the best-performing sulfite combustion unit equipped with a fiber-bed demister system" ranged from 0.009 to 0.039 g/dscm corrected to 8 percent oxygen over a six-year period. EPA selected a MACT floor of 0.046 g/dscm, an 18 percent increase over the highest emission level recorded by the best-performing source. The agency argues that "the variability in the data" justifies its choice, but it does not even claim that its chosen floor reflects the actual variability of the best-performing source. EPA's chosen floor must "reasonably estimate[] the actual variability of the best-performing source," *Sierra Club*, 479 F.3d at 881-882; *see also Northeast Maryland Waste Disposal Authority v. EPA*, 358 F.3d 936, 954 (D.C. Cir. 2004) ("EPA must 'demonstrate with substantial evidence—not mere assertions' that the chosen floors 'represent "a reasonable estimate of the performance of the [best-performing] units."'" (quoting *Cement Kiln*, 255 F.3d at 866) (alteration in original)). EPA must either provide evidence as to how an 18 percent increase over the highest emission level recorded in six years could accurately reflect the best performer's actual variability—rather than the emission level that the agency believes is achievable through the use of a particular control technology—or it must choose another standard that can satisfy this requirement.

EPA failed to set any standard at all for PM emissions from new and existing chemical recovery combustion units at stand-alone semichemical pulp mills. EPA attempts to justify its failure to set a standard by arguing that "insufficient PM data . . . are available to establish MACT floors for PM." This argument is unavailing. EPA has a "'clear statutory obligation to set emission standards for each listed HAP.'" *Sierra Club v. EPA*, 479 F.3d 875, 883 (D.C. Cir. 2007) (quoting *National Lime Ass'n v. EPA*, 233 F.3d 625, 634 (D.C. Cir. 2000)). It is up to EPA to devise a floor approach capable of satisfying section 112's floor requirements. CITE CKRC, 255 F.3D at 865. EPA must reopen the standards, collect the necessary data, and set MACT floors for new and existing sources.

EPA also failed to set standards for total gaseous organic HAP emissions from new and existing semichemical pulp mills. EPA defends its failure to set floors by arguing that "none of the existing semichemical mills are currently controlling gaseous organic HAP emissions from semichemical combustion sources." Again, this argument fails. The D.C. Circuit has repeatedly held that EPA has a "'clear statutory obligation to set emission standards for each listed HAP,' which does not allow it to 'avoid setting standards for HAPs not controlled with technology.'" *Sierra Club*, 479 F.3d at 883 (quoting *National Lime*, 233 F.3d at 634). Instead of setting floors, EPA adopts beyond-the-floor standards "based on the use of" a particular control technology. EPA cannot rely on beyond-the-floor standards to satisfy its obligation to "'set floors at the emission level achieved by the best-performing sources.'" *Sierra Club*, 479 F.3d at 882 (quoting *Cement Kiln*, 255 F.3d at 865). EPA must reopen the standards and set MACT floors for new and existing sources.

EPA's "bubble compliance alternative" is contrary to the Clean Air Act and must be removed from the rule. The bubble compliance alternative allows kraft and soda pulp mills "to set PM emissions limits for each existing process unit in the chemical recovery system at the mill such that, if these limits are met, the total emissions from all existing process units are less than or equal to a mill-specific bubble limit." 66 Fed. Reg. at 3184. The mill-specific bubble limit is calculated based on the promulgated emission standards for each process unit. Because the standards for individual process units are unlawful for the reasons given above, any plant specific bubble limits are unlawful as well. Further, the bubble compliance alternative allows mill owners to set PM emission limits for some process units that are less stringent than the promulgated standards, as long as they are able to offset the excess emissions with PM emission reductions elsewhere in the chemical recovery system. This compliance alternative is plainly contrary to the section 112(d)(3), which requires EPA to set emission standards for existing sources that "shall not be less stringent . . . than the average emission limitation achieved by the best performing 12 percent of the existing sources."

EPA's site-specific alternative emission standard for Weyerhaeuser Paper Company's Cosmopolis, Washington, sulfite pulp mill is contrary to the Clean Air Act and must be removed from the rule. The alternative standard allows Weyerhaeuser "to reduce HAP metals emissions from an onsite emission source called a hog fuel dryer in lieu of complying with the HAP metals standard for existing sulfite combustion units." 68 Fed. Reg. at 7708. EPA promulgated the alternative standard rather than developing a MACT standard for the hog fuel dryer, which "is not regulated under a NESHAP and appears to be unique." *Id.* EPA may not excuse Weyerhaeuser from complying with the HAP metals standard for existing sulfite combustion units, and it must develop a MACT standard for the hog fuel dryer. EPA cannot satisfy its obligation to establish emission standards "for each category or subcategory of major sources" by regulating some emission points and not others. § 112(d)(1).

EPA defends its Weyerhaeuser loophole by arguing that it "achieves greater emissions reductions of the same HAP metals and does so by controlling a source otherwise unregulated under subpart MM or any other NESHAP." This argument is irrelevant. EPA lacks authority to exempt the Weyerhaeuser plant or any other plant from MACT standards. Further, the agency is required to develop a MACT standard for the hog fuel dryer, in keeping with its "'clear statutory obligation to set emission standards for each listed HAP.'" *Sierra Club*, 479 F.3d at 883 (quoting

National Lime, 233 F.3d at 634). EPA also attempts to rely on its defective bubble compliance alternative, which as promulgated does not even apply to sulfite combustion units, to suggest that it is not required to regulate individual emission points such as the hog fuel dryer. It argues that "EPA typically develops MACT standards for a series of aggregated plant operations, not for individual emission points," and that the Weyerhaeuser exemption is "an alternative means of complying with" the PM MACT limit in the rule. That argument fails for the reasons discussed in the previous section. Finally, EPA argues that even if it were to develop a MACT standard for the hog fuel dryer, the standard "would likely be some type of beyond-the-floor, given the absence of this emission point at other facilities," and "EPA would thus be compelled to consider the cost, non-air quality environmental and health impacts and energy requirements of a standard (as required by section 112(d)(2)), and would not be obligated to promulgate a standard based upon consideration of those factors." EPA must set a floor for the hog fuel dryer even if it is unique. Further, that EPA must consider cost and other factors in setting beyond-the-floor standards and may conclude that such standards are not achievable does not excuse the agency from determining the maximum degree of reduction that is achievable.

30. Secondary Lead Smelters

EPA fails to set emission standards for organic HAP output from existing reverberatory, rotary, and electric furnaces that are not collocated with blast furnaces. 62 Fed. Reg. 32,210, 32,211 (June 13, 1997). EPA claims that "[r]otary furnaces, electric furnaces, and reverberatory furnaces not collocated with blast furnaces have relatively low potentials for organic HAP emissions and no standards are being proposed to limit organic HAP emissions from these furnace configurations." 59 Fed. Reg. 29,750, 29,761 (June 9, 1994). EPA then claims that there is not any justification for a more stringent standard than no control, due to the small amounts of organic HAPs emitted by these sources. This is contrary to the CAA. EPA has a "clear statutory obligation to set emission standards for *each* listed HAP." *National Lime*, 233 F.3d at 634 (emphasis added).

In addition, the standards EPA did set do not reflect the actual emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise these standards to satisfy § 112(d)(3)'s minimum stringency provisions.

31. Stationary Combustion Turbines

Stationary Combustion Turbines are a major source of HAP emissions such as formaldehyde, toluene, benzene, and acetaldehyde. 69 Fed. Reg. 10,511, 10,512 (Mar. 5, 2004). EPA set emission standards only for formaldehyde, claiming "formaldehyde is an appropriate and valid surrogate for each of the organic HAP[s] that can be controlled by a catalyst, and . . . the standard for such organic HAP[s] can be reasonably expressed in terms of formaldehyde emissions measure after exiting any control device." *Id.* at 10,522. However, EPA does not show, as it must, that controlling formaldehyde is the only means by which facilities achieve reductions in the other organic HAPs. Accordingly, EPA must reopen the rule and either explain why formaldehyde is a valid surrogate for all the other organic HAPs that stationary combustion turbines emit or set emission standards for those other HAPs.

In addition, EPA's formaldehyde standard does not reflect the formaldehyde emission level achieved by the relevant best performing sources. Accordingly, even if formaldehyde is a reasonable surrogate for all the other organic HAPs that primary lead smelters emit, the agency must reopen the rule and set floors for formaldehyde in accordance with Clean Air Act § 112(d)(3).

Further, stationary combustion turbines emit metal HAPs, which will not be controlled at all by the standard. 69 Fed. Reg. at 10,530. EPA argues that controlling metal HAPs is not required since no combustion turbines or similar sources used technology to control these HAPs prior to promulgation of the rule, and EPA does not believe it would be practical or cost effective to require control. However, EPA has a "clear statutory obligation to set emission standards for each listed HAP," regardless of whether the best-performing sources in a given category are currently using air pollution control technology to limit their emissions. *See National Lime*, 233 F.3d at 634. EPA must set a control for these metal HAPs, regardless of whether sources are currently using control technology.

Finally, EPA failed to set any standards for the acid gases that stationary combustion turbines emit. Thus, EPA must reopen the rule to set these standards as well.

32. Taconite Iron Ore Processing

For the regulation of taconite iron ore processing, EPA failed to set an emissions standard for mercury, formaldehyde, hydrogen chloride, and hydrogen fluoride. 68 Fed. Reg. 61,867, 61,869 (Oct. 30, 2003). Mercury from the ore is volatilized as the taconite pellets at these facilities are heated in the furnace. 67 Fed. Reg. 77,561, 77,571 (Dec. 18, 2002). Claiming that it had not identified any preexisting controls at existing sources, the agency asserted that it could set the no emission reduction floors. *Id.* EPA also refused to set standards for the formaldehyde, hydrochloric acid, and hydrofluoric acid emitted by indurating furnaces, claiming that it is not aware of any feasible control technology for reducing formaldehyde at these levels without further increasing exhaust temperature and thus burning more fuel. 67 Fed. Reg. at 77,570-77,571. *Id.*

It is well established that "no control" floors are unlawful. EPA must set standards for each HAP that a category emits, and these standards must, at a minimum, reflect the average emission level actually achieved by the best performing sources — *i.e.*, those with the lowest emissions — regardless of whether sources are using technology to control their emissions. Because EPA must set standards for each HAP a source category emits, regardless of whether it is currently controlled with a technology, *National Lime*, 233 F.3d at 634, EPA's refusal to set standards for these HAPs is unlawful and the agency must reopen its rule to set standards for each of them at levels that, at a minimum, reflect the average formaldehyde emission level actually achieved by the relevant best performing sources.

Although EPA set standards for PM as a surrogate for non-mercury metal HAP emissions, those standards do not reflect the actual PM emission levels achieved by the relevant best performing sources. Accordingly, EPA must revise them to satisfy § 112(d)(3)'s minimum stringency provisions.

33. Wet Formed Fiberglass Mat Production

In this standard, EPA uses formaldehyde as a surrogate for total HAP emissions. 67 Fed. Reg. 17,823, 17,826 (Apr. 11, 2002). Other HAPs emitted by these facilities include methanol and vinyl acetate. *Id.* at 17,824. In justifying its use of formaldehyde as a surrogate, EPA says that "formaldehyde by thermal oxidation will also result in control of vinyl acetate and methanol." *Id.* Even if this is true, EPA does not show, as it must, that control of formaldehyde is the only means by which sources achieve reductions in the other HAPs that wet formed fiberglass mat production facilities emit.

In addition, even if formaldehyde were a valid surrogate for all the other HAPs that wet formed fiberglass mat production facilities emit, EPA's formaldehyde standard does not reflect the formaldehyde emission level achieved by the relevant best sources.

For all of the above reasons, EPA must reopen its rule and, for all the HAPs that wet formed fiberglass mat production facilities emit, set standards that fully comply with the Clean Air Act.

34. Wool Fiberglass Manufacturing

In the summary of the Wool Fiberglass Manufacturing, EPA lists three organic HAPs emitted by these facilities, formaldehyde, phenol, and methanol. 64 Fed. Reg. 31,695, 31,695 (June 14, 1999). However, EPA set a standard only for formaldehyde, claiming that formaldehyde is a surrogate for the remaining organic HAPs. 62 Fed. Reg. 15,228, 15,239 (Mar. 31, 1997). Nowhere in the rule does EPA show that control of formaldehyde is the only means by which sources achieve reductions in the other organic HAPs that wool fiberglass manufacturing facilities emit. Further, EPA does not even claim that formaldehyde is a valid surrogate for the non-organic HAPs that wool fiberglass manufacturing facilities emit, such as metals and acid gases.

In addition, even if formaldehyde were a valid surrogate for all the other HAPs that wool fiberglass manufacturing facilities emit, EPA's formaldehyde standard does not reflect the formaldehyde emission level achieved by the relevant best sources.

For all of the above reasons, EPA must reopen its rule and, for all the HAPs that wool fiberglass manufacturing facilities emit, set standards that fully comply with the Clean Air Act.

C. STARTUP, SHUTDOWN, AND MALFUNCTION EXEMPTION

In the General Provisions governing all air toxics regulations in Part 63 of the Code of Federal Regulations, EPA included a blanket exemption from emission limits during periods of startup, shutdown, and malfunction (SSM). It provided "[t]he non-opacity emission standards set forth in this part shall apply at all times <u>except</u> during periods of startup, shutdown, and malfunction, and as otherwise specified in an applicable subpart." 40 C.F.R. § 63.6(f)(1) (emphasis added). It further provided "[t]he opacity and visible emission standards set forth in this part must apply at all times <u>except</u> during periods of startup, shutdown, and malfunction and as otherwise specified in an applicable subpart." 40 C.F.R. § 63.6(h)(1) (emphasis added).

The D.C. Circuit has vacated EPA's SSM exemption as unlawful. *Sierra Club v. EPA*, D.C. Cir. No. 02-1135 (December 19, 2008). It held that Clean Air Act § 112 and § 302(k), read together, require "continuous section 112-compliant standards." *Id.*, slip op. at 15. Therefore, the SSM exemption "violates the CAA's requirement that some section 112 standard apply continuously." *Id.*

The D.C. Circuit's vacatur of the SSM exemption renders this exemption null and void in every Part 63 regulation that contains it. Thus, once the mandate issues in *Sierra Club*, no source subject to a Part 63 regulation will be exempted from compliance with emission standards during SSM. If any source subject to a Part 63 regulation fails to comply with emission standards during SSM, it will have violated such standards. To conform its specific Part 63 regulations to governing law and to avoid misleading the public, however, the agency must now to delete the SSM exemption from all such regulations in which it appears. *Sierra Club* makes clear that any exemption from continuous compliance with § 112 emission standards violates Clean Air Act.

In some instances EPA's Part 63 regulations for specific source categories include specific SSM provisions in addition to or instead of the SSM exemption in the General Provisions. Because *Sierra Club* holds that the Clean Air Act requires continuous compliance with § 112 emission standards, it makes clear that any exemption from such standards during periods of SSM is unlawful. Therefore, EPA must delete any provision in any specific Part 63 regulation that provides any SSM exemption from continuous compliance with § 112 emission standards.

CONCLUSION

Pursuant to the Clean Air Act and the Administrative Procedure Act, Environmental Petitioners hereby petition the Administrator to reopen EPA's Clean Air Act § 112 regulations for each source category discussed above to:

1. ensure that such regulations include emission standards for each listed hazardous air pollutant the category emits and that such standards fully comply with the Clean Air Act;
2. eliminate unlawful exemptions and alternative standards promulgated under Clean Air Act § 112(d)(4);
3. eliminate unlawful or invalid use of surrogates; and,
4. delete all SSM exemptions from any Part 63 regulation in which any such exemption appears.

Environmental Petitioners further petition the Administrator to undertake a comprehensive assessment of all of its existing part 61 and part 63 regulations — including and in addition to those identified herein — to ensure that each standard fully complies with the Act and governing judicial rulings.

EPA is required by law to give this petition prompt consideration. Environmental Petitioners request a substantive response to this petition within 180 calendar days. In the absence of an affirmative response, Environmental Petitioners will be compelled to consider litigation to achieve the agency actions requested.

Respectfully submitted,

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