

**MOSSVILLE ENVIRONMENTAL ACTION NOW * LOUISIANA ENVIRONMENTAL
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June 18, 2012

Ms. Lisa P. Jackson
Office of the Administrator
Environmental Protection Agency
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BY FIRST CLASS MAIL AND EMAIL

Petition for Reconsideration of and Petition for New Final Rule For National Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production
Docket ID No. EPA-HQ-OAR-2007-0037

Dear Administrator Jackson:

This is a petition under Clean Air Act (“CAA” or “the Act”) § 307(d)(7)(B), 42 U.S.C. § 7607(d)(7)(B) for reconsideration and a new final rule. The parties submitting this petition are Mossville Environmental Action Now, 650 Prater Road, Westlake, LA 70669; Louisiana Environmental Action Network, 162 Croydon Ave., Baton Rouge, LA 70806; Air Alliance Houston, 2409 Commerce Street, Suite A, Houston, TX 77003; and Sierra Club, 85 Second St., 2nd Floor, San Francisco, California 94105 (“Environmental Petitioners”). By this petition, Environmental Petitioners request that you reconsider certain aspects of the final action taken at 77 Fed. Reg. 22,848 (April 17, 2012), titled “National Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production (“PVC rule”), and issue a final rule that will better protect public health and the environment of the affected communities and will be consistent with Executive Order No. 12,898 and your commitment to work for environmental justice.

I. EPA SHOULD RECONSIDER ITS EMISSION STANDARDS FOR AREA SOURCE PVC PLANTS.

A. Background.

In its proposed PVC rule, EPA stated: “We are proposing to revise the existing NESHAP for PVC production area sources (40 CFR subpart DDDDDD) to require that PVC production area sources comply with the proposed rule.” 76 Fed. Reg. 29,528, 29,539 (May 20, 2011). The agency explained that although § 112(d)(5) gives it discretion to set Generally Available Control Technologies (“GACT”) standards for area sources instead of Maximum Achievable Control Technologies (“MACT”) standards under § 112(d)(2)-(3), “we determined that GACT standards

for area sources should be the same as MACT standards based on the similarity between production processes, emission points, emissions, and control technologies that are characteristic of both major and area source PVC production facilities.” *Id.* at 29,542 (emphasis added). In particular, EPA pointed out that:

the one existing area source has the same kinds of emission points (process vents, stripped resin, wastewater, equipment leaks, storage, heat exchangers and other emission sources) and emits the same types of pollutants ... as major sources. From the information that we collected during this rule development, which includes stack testing and site visits at both major and area sources, we now know that area sources have the same types of emissions, emission sources, and controls ... as major sources. Information that we have collected to support development of these proposed standards indicates that the one area source would be major, based on its potential to emit, except that the source has an enforceable requirement to operate its thermal oxidizer, which keeps it below major source levels.

Id. (emphasis added).

EPA further stated that:

the control technologies and management practices used by major sources are generally available for area sources. In addition, the part 61 NESHAP for this industry requires all PVC production facilities to meet the same standards with no major or area source distinction, and because of the similarities between major and area sources, it is reasonable for them to meet the same emission standards under this proposed rule.

Id. (emphasis added).

In addition, the agency explained:

As part of the GACT determination we analyzed the cost and emissions reduction for the area source to meet the proposed GACT standards. The overall annual cost is \$332,351, and the annual emission reduction is 17.23 tons of HAP per year. ... The economic impact analysis ... showed that there are no significant economic impacts.

Id.

EPA concluded:

For the aforementioned reasons, we have determined, pursuant to CAA sections 112(d)(5) and (6), that the control technologies and management practices necessary to meet the proposed major source emission standards are generally available for area sources in this category. Accordingly, we are proposing the GACT level of control for area sources is the same as the MACT level of control for major sources, and that these area sources must meet the same standards as proposed in this rule for major sources.

Id. (emphasis added).

However, in the final rule, the EPA reverses its proposed rule requiring PVC area sources to meet MACT standards instead of the GACT standards. EPA concludes in the final rule that:

We have determined emission limits based on the control level that area sources are currently meeting to be GACT for existing and new area sources for PVC-only process vents, PVC-combined process vents, bulk resin, suspension resin, and process and maintenance wastewater. For other resin subcategories (*i.e.*, dispersion, suspension blending, and copolymer), no existing area source produces these resins. For the dispersion subcategory, we determined GACT based on the least-controlled major source control level at existing major sources in that subcategory. GACT for the suspension blending and copolymer subcategories is based on the existing major source control levels for the single facility in each subcategory for which we determined the MACT floors.

77 Fed. Reg. at 22,856 (emphasis added). EPA states that it “updated” its analysis for area sources and considered the different emission points individually “to determine the appropriate level of control considering cost and emission reduction.” *Id.* at 22,866. EPA does not say how its new analysis led it to conclude that the controls for major sources are not “generally available” for area sources too, *cf.* 76 Fed. Reg. at 29,542, but states “[w]e have determined that area sources will not have to install different controls or implement different compliance strategies and will incur little, if any, additional cost to comply with the standards for total organic HAP (and total non-vinyl chloride organic HAP).” 77 Fed. Reg. at 22,887. The agency then explains that the final rule will not yield any reductions from some of the worst emission points at these two area sources:

Since the PVC-only and PVC-combined process vent area source limits are based on the facility in each subcategory, no additional controls would be needed and no emission reductions would occur.

Id. (emphasis added); *id.* at 22,887-22,888 (no reduction from stripped resin), Whereas the proposed rule would have reduced emissions of hazardous emissions from area sources by more than 69 tons per year – a reduction of more than 16 tons per year at the CertainTeed PVC facility in the vicinity of Mossville, LA and more than 53 tons per year at the OxyVinyl PVC facility in Deer Park, TX – by requiring these area sources to meet MACT standards, EPA-HQ-OAR-2002-0037-0102 (“Proposed Cost and Emission Reduction Memo”) at 30, the final rule will reduce them by less than 25 tons per year collectively, less than half as much. GACT Memo at 33, 35.

Because EPA’s new approach to area source standards does not appear in its proposal, it was “impracticable” to object to them during the public comment period within the meaning of Clean Air Act § 307(d)(7)(B). 42 U.S.C. § 7607(d)(7)(B). In particular, because EPA expressly proposed to set GACT standards for area sources that were “the same” as its MACT standards for major sources, Environmental Petitioners had no reason to object to the agency’s decision to set GACT standards instead of MACT standards for area sources in this category. Further, Environmental Petitioners had no opportunity to comment on EPA’s apparent conclusions that the only control measures that are generally available for the two existing area sources are the ones that each area source is already using or that none of the control measures that are already in use by other PVC plants are “generally available” for these plants within the meaning of Clean Air Act § 112(d)(5), 42 U.S.C. § 7412(d)(5). Because EPA’s new approach significantly reduces the level of protection by increasing the emissions of hazardous air pollutants from the two area source PVC plants, this objection is of central relevance.

B. Grounds For Objection.

1. EPA Has Not Provided A Rational Basis For Choosing To Set GACT Standards Instead of MACT Standards For Area Source PVC Plants.

Although Clean Air Act § 112(d)(5) allows EPA to set GACT standards instead of MACT standards for area sources, the agency's decision to do so is subject to the usual requirements for reasoned agency decision-making. EPA must grant reconsideration to, at a minimum, explain its decision to set GACT standards instead of MACT standards and draw a rational connection between the facts found and the decision made. In the final rule EPA has not provided any basis for requiring the less protective GACT standards instead of MACT standards for area source PVC plants.

EPA's failure to provide a rational basis for its decision is especially problematic where, as here, the record provides strong reasons to set MACT standards for all PVC plants. Specifically, EPA has found that area source PVC plants and major source PVC plants have the same emission points and emissions. 76 Fed. Reg. at 29,542.¹ EPA has further found that because of their similarities and because both area and major source PVC plants must meet the same Part 61 standards, "it is reasonable for them to meet the same emission standards." *Id.* EPA has found that the technologies and control measures that major sources will use to comply with the MACT standard are generally available for area sources. *Id.* EPA has found that both area source PVC plants are "synthetic" area sources – i.e., that they have the potential to emit major amounts of hazardous air pollutants but for control requirements. 77 Fed. Reg. at 22,876-22,877. *See* EPA-HQ-OAR-2002-0037-0062 (CertainTeed facility would emit 66.9 tons per year of vinyl chloride but for control requirements); EPA-HQ-OAR-2002-0037-0182 (OxyVinyls facility would emit 279 tons per year of vinyl chloride but for control requirements); 76 Fed. Reg. at 29,542 (CertainTeed "would be major, based on its potential to emit, except that the source has an enforceable requirement to operate its thermal oxidizer, which keeps it below major source levels."). Indeed, EPA found the two area source PVC plants sufficiently similar to major sources to include them in its floor analysis for the major source MACT standards. *Id.* at 22,877. Finally, EPA has found that the proposed standards for area sources, which were set at the same level as the proposed standards for major sources, would have reduced emissions of hazardous air pollutants in Mossville by more than 16 tons per year and emissions of hazardous air pollutants in Deer Park by more than 53 tons per year. EPA-HQ-OAR-2002-0102 at 30. By comparison, the final rule will reduce emissions of hazardous air pollutants in these communities by less than twenty-five tons per year. EPA-HQ-OAR-2002-0037-0196 at 33, 35 (Tables 41 & 42). As EPA has pointed out, the hazardous air pollutants emitted by PVC plants – area source plants and major source plants alike – include significant quantities of known and probable carcinogens. 76 Fed. Reg. at 29,532. In short, the similarities between all aspects of major and

¹ At proposal, EPA apparently believed that there was only one area source PVC plant, the CertainTeed facility in Mossville, LA. In its final rule, EPA indicates that there is a second, OxyVinyl Corp.'s Deer Park, TX facility. The points EPA made in its proposal requiring the CertainTeed plant to meet the MACT standard apply equally to the OxyVinyl plant.

area sources in the PVC category – emissions, emission points, generally available control measures – and the strong public interest in reducing emissions of highly toxic pollutants into environmental justice communities that are already overburdened with toxic pollution weigh heavily in favor of setting MACT standards for both major and area source PVC plants.

Notably, EPA has set MACT standards for area sources in previous rules where it found that major and area sources in the same category are similar. In its rule for hazardous waste combustors, for example, EPA chose to set MACT standards for hazardous waste combustors that are area sources based on its conclusion that these sources present a health and environmental threat and “the common emission characteristics of these sources and amenability to the same emission control mechanisms.” 64 Fed. Reg. 52,828, 52,837 (September 20, 1999). Similarly, EPA set MACT standards for secondary lead smelters that are area sources. The agency explained in that rulemaking that emissions from these sources, which include lead, arsenic, and 1,3-butadiene have serious adverse health effects including cancer, that the costs of MACT standards were reasonable in light of the health threat presented, and that setting MACT standards for area source lead smelters was consistent with the Executive Order on Environmental Justice, No. 12,898 given that these area sources operated in minority and low-income communities. 60 Fed. Reg. 32,587, 32,591-92 (June 23, 1995). When EPA set MACT standards for area sources in the halogenated solvent cleaning category, the agency explained that this is its default approach, *i.e.*, that “[a]rea sources are regulated with a MACT standard, unless there is justification for regulating them under GACT.” 59 Fed. Reg. 61,801 (Dec. 2, 1994). In the chromium electroplating rule, EPA found that the toxicity of an emitted pollutant, hexavalent chromium, created a need to set the area source standards at the same level as the MACT standards. 60 Fed. Reg. 4947, 4953 (Jan. 25, 1995). Similarly, in the secondary aluminum rulemaking, EPA decided that the emission of dioxins/furans required the setting of MACT standards for area sources. 65 Fed. Reg. 15,689, 15,690 (Mar. 23, 2000).

The reasons that EPA has given for setting MACT standards for area sources in prior rules are strongly present in the PVC rule. Vinyl chloride, dioxins and other hazardous air pollutants that PVC plants emit are extremely toxic. EPA has previously set MACT-based GACT standards for area sources that emit dioxins/furans for that reason. *See* 65 Fed. Reg. at 15,690 (secondary aluminum). Major and area source PVC plants are closely similar in terms of emissions and controls, and the cost of emission controls is as reasonable for area sources as it is for major sources. The EPA’s proposed rule provides a strong rationale for setting the same MACT standards for major and area source PVC plants that is consistent with prior agency rules requiring area sources to meet MACT standards, however, the EPA’s final rule provides no justification for setting GACT instead of MACT standards for area source PVC plants.

Furthermore, given the fact that the African American community of Mossville suffers disproportionate pollution burdens from the CertainTeed PVC plant and at least 11 other industrial facilities, the EPA’s final rule will deny Mossville residents reduced HAP emissions from the CertainTeed facility notwithstanding the fact that the reduction would be in accordance with both the CAA and the Executive Order on Environmental Justice, No. 12,898.

2. EPA's Decision To Eviscerate The GACT Emission Standards For Area Sources Is Unlawful and Arbitrary.

a. General Flaws In EPA's New GACT Analysis.

Even assuming that EPA's decision to set GACT standards instead of MACT standards for area source PVC plants was reasonable and adequately explained – which it was not – the agency's decision to switch from proposed GACT standards that were “the same” as its MACT standards for major source PVC plants to final GACT standards that are in many respects much weaker than its MACT standards was unlawful and arbitrary. EPA must grant reconsideration to correctly analyze the application of GACT standards in lieu of MACT standards for area source PVC plants.

As noted above, the GACT standards that EPA proposed would have removed more than seventy tons of hazardous air pollutants per year – much of which is comprised of known or probable carcinogens – from the already toxic air in Mossville, LA and Deer Park, TX.

Rather than following the statute and its own precedent to determine which control measures are generally available for area source PVC plants, EPA invented a new approach that favored a “no emission reductions” result from the outset irrespective of whether improved control measures are generally available. For emissions from process vents, EPA divided the two area source PVC plants into two separate subcategories. 77 Fed. Reg. at 22,887-22,888. EPA placed the CertainTeed PVC plant in the vicinity of Mossville, LA in a subcategory for plants with process vents that originate solely from a PVC processing unit and placed the OxyVinyls PVC plant in Deer Park, TX in a separate subcategory for plants with process vents that are combined or co-controlled with vent streams that originate from other categories such as ethylene dichloride or vinyl chloride monomer production. *Id.*; *see id.* at 22,850-22,851. Then, having placed each plant in its own subcategory of one, the agency asked what the current level of control was for each subcategory after adjusting it upward to estimate the worst emission level that each process vent could emit if it were tested ninety-nine times. EPA-HQ-OAR-2002-0037-0196 (“GACT Memo”) at 6-9 (Mossville plant); *id.* at 9-13 (Deer Park plant). Not surprisingly, the answer to this question was that the current level of control or “baseline” level of control for each plant was precisely what that individual plant was already doing.

Similarly, for stripped resins, EPA divided the two area source PVC plants into two subcategories, the Mossville plant that produces bulk resin and the Deer Park plant that produces suspension resin. 77 Fed. Reg. at 22,887. Again, EPA concluded that the baseline level of control reflected what each individual plant was doing already. *Id.*

For wastewater, EPA determined that vinyl chloride concentrations at the wastewater stripper outlet for both area source facilities was 0.4 ppmw, but nonetheless set a baseline level of control that was more than five times higher, 2.1 ppmw, based on its variability analysis. GACT Memo at 18-19. For non-vinyl-chloride hazardous air pollutants, EPA found the baseline level of control to be 0.018 ppmv based on the only data point it received from industry. *Id.* at 19. For heat exchangers, EPA announced that a leak definition of 5,000 ppbw and monthly monitoring, the levels currently used at the Deer Park facility, were the baseline level of control. GACT Memo at 20. For equipment leaks and other emission sources, EPA announced that the

baseline level of control was the level specified in the existing Part 61 regulations. *Id.* For storage vessels, EPA claimed that because neither of the area sources currently controls its storage vessel emissions, the current level of control is “no level of control.” *Id.*

EPA’s approach to determining the current or “baseline” level of control does not implement § 112(d)(5)’s mandate to set standards reflecting the use of generally available control measures. The relevant question under § 112(d)(5) is not the one EPA asked – *i.e.*, what each individual area source is already doing. Indeed, because the answer to that question will always be that each individual source is doing what it is doing, basing GACT decisions on this approach will always lead to the same result, no improvements in emission control and no reduction in toxic emissions.

EPA states that, after reaching its conclusion that the baseline for its GACT analysis was no control, it went on to consider whether more stringent levels of control were cost-effective. 77 Fed. Reg. at 22,888. EPA’s cost-effectiveness analysis consisted of dividing its estimate of the annual cost of the control measures considered by its estimate of the annual emission reduction. For PVC-only process vents, EPA considered setting standards equivalent to those for major sources, but rejected it as not cost-effective. 77 Fed. Reg. at 22,888.² For bulk and suspension resins and wastewater, EPA chose not to set standards at the major source MACT level – *i.e.*, left them at the less protective area source level – because it found that area sources were achieving lower emission levels than are required by the major source MACT standards. *Id.* See GACT Memo at 26-27. For wastewater, EPA also considered setting standards at the level of the MACT standards for new sources, but stated that these standards would not be cost-effective. 77 Fed. Reg. at 22,888; GACT Memo at 28-29.

EPA has estimated that the Mossville plant pumps 19.1 tons per year of hazardous air pollutants into the air in and around Mossville and that the Deer Park plant pumps 81.7 tons per year of hazardous air pollutants into the air in and around Deer Park. EPA-HQ-OAR-2002-0037-0097 (“Proposed Baseline Emissions Memo”) at 13. Had EPA finalized its proposed standards it would have reduced total HAP emissions from the Mossville plant by 16.61 tons per year (87%) and from the Deer Park plant by 53.3 tons per year (65%). EPA-HQ-OAR-2002-0037-0102 (“Proposed Cost and Emission Reduction Memo”) at 30. Instead, EPA chose to greatly weaken the standards for these sources. For example, EPA weakened the vinyl chloride standard for the Mossville plant’s process vent emissions from 0.32 ppmv to 5.3 ppmv, a change that allowed 1,556% more vinyl chloride to be emitted, and weakened the total hydrocarbon standard from 2.0 ppmv to 46 ppmv, an increase of 2,200%. For the Deer Park plant, it weakened the vinyl chloride standard for stripped resin emissions from 0.48 ppmv to 36 ppmv, an increase of 7,400%. The end result of EPA’s changes is that the Mossville and Deer Park plants will be reduced not by 69.9 tons per year collectively as they would have been under the proposed standards, but by less than 25 tons per year – *i.e.*, less than half as much. GACT Memo at 33, 35.

² EPA determined that the PVC-combined process vents at the Deer Park plant are meeting the MACT standards for PVC-combined process vents already. *Id.*

b. Flaws In EPA’s New Approach To Setting Standards For Process Vents.

EPA’s refusal to set GACT at the same level as MACT for PVC-only process vents at area source PVC plants – i.e., at the Mossville plant – is unlawful and arbitrary for several reasons that warrant reconsideration.

As described in § 112(k)(1), the purpose of the area source program is to “achieve a substantial reduction in emissions of hazardous air pollutants from area sources and an equivalent reduction in the public health risks associated with such sources” 42 U.S.C. § 7412(k)(1) (emphasis added). As the legislative history of Clean Air Act § 112(d)(5) indicates, and as EPA itself has acknowledged, GACT refers to “methods, practices and techniques which are commercially available and appropriate for application by the sources in the category considering economic impacts.” 74 Fed. Reg. 32,822, 32,824 (July 9, 2009) (quoting S. REP. NO. 101-228, at 171-72). That same legislative history indicates that Congress intended GACT standards to provide meaningful reductions in emissions:

An example of generally available control technology (or GACT) would be an equipment and operational standard for that portion of the dry cleaning industry which emits less than 10 tons per year of the dry cleaning solvent (perchloroethylene). An equipment standard is not an emissions limitation nor a limit on solvent consumption rates and does not require the sophisticated monitoring and modeling that may be necessary to determine compliance. Rather, an equipment standard would require neighborhood dry cleaning establishments to employ the commercially available systems associated with the lowest measured emissions, and may also specify operation and maintenance requirements for this equipment.

S. REP. NO. 101-228, at 171-72 (emphasis added).

EPA’s “updated” GACT analysis in its final rule does nothing to refute the agency’s earlier conclusion that the technologies major source PVC plants will use to meet the MACT standards are “generally available” for area source PVC plants. Nor does it provide a rational basis for reversing that conclusion. In particular, the agency misinterpreted § 112(d)(5) as directing it to reject even “generally available” measures if it believes they are not cost-effective. Section 112(d)(5) does not mention cost-effectiveness but, even assuming that it allows EPA to consider cost-effectiveness in determining GACT, cost-effectiveness would be relevant only as an indicator of whether a control measure is “generally available” for the sources at issue – *i.e.*, whether they “are commercially available and appropriate for application by the sources in the category considering economic impacts.” 74 Fed. Reg. at 32,824 (quoting S. REP. NO. 101-228, at 171-72).

EPA itself made clear in the proposed rule that the technologies that major source PVC plants will use to meet the MACT standards are generally available for area source PVC plants.

For the aforementioned reasons, we have determined, pursuant to CAA sections 112(d)(5) and (6), that the control technologies and management practices necessary to meet the proposed major source emission standards are generally available for area sources in this category. Accordingly, we are proposing the GACT level of control for

area sources is the same as the MACT level of control for major sources, and that these area sources must meet the same standards as proposed in this rule for major sources.

76 Fed. Reg. at 29,542. As noted above, EPA expressly found that the major and area source PVC plants have the same emission points and emissions and use the same control technologies. *Id.* Indeed, it emphasized that the area sources are synthetic area sources and so similar to the major sources that they can be used in the floor analysis under § 112(d)(3). 77 Fed. Reg. at 22,877. And EPA found that meeting the major source MACT standards would not have a significant economic impact on area sources. Where as here, the technology in question is already in widespread use by other sources in the category – which the record shows to be closely similar in every respect to the only area source PVC plant – EPA’s conclusions about cost-effectiveness do not show that a control measure is not generally available.

The control measure that major sources will deploy to meet the MACT standard is, according to EPA, a refrigerated condenser. GACT Memo at 24-25. EPA has indicated that this technology is being used or will be used by almost every other PVC plant, if not every one. EPA-HQ-OAR-2002-0037-0195 (“Cost and Emission Reduction Memo”) at 2-4. Thus, regardless of whether EPA views this technology as cost-effective, it is plainly generally available for PVC plants whether they are major sources or, like the Mossville plant, a synthetic area source. To reject it on cost-effectiveness grounds is to effectively rewrite § 112(d)(5).

Further, EPA provides no rational basis for its conclusion that a technology that is available for every other source is not available for the Mossville plant even though the Mossville plant is so similar to the other sources that EPA included it in the floor calculations for the major source MACT standard. Significantly, the cost of applying refrigerated condenser technology at the Mossville plant is at the low end of the range of costs at other plants. *Compare* GACT Memo at 25 (total annualized cost of refrigerated condenser for Mossville plant less than 170,000 per year) *with* Cost and Emission Reduction Memo at 4 (total annualized cost for other plants ranges from \$103,921/year to \$355,188/year). Further, the cost-effectiveness of applying refrigerated condenser technology at the Mossville plant – as measured by EPA in dollars per ton reduced – is within the range of cost-effectiveness for other plants. *Compare* GACT Memo (stating cost-effectiveness of refrigerated condenser at Mossville plant to be \$701,814/ton of total organic HAP removed) *with* Cost and Emission Reduction Memo at 4, 8 (showing cost-effectiveness for same technology at OxyVinyls Pasadena facility to be \$1,607,186/ton of total organic HAP removed).

Nor, does EPA provide any rational basis for its reversal of the conclusion reached in the proposed rule that the technologies the major sources will deploy to meet the MACT standard are also generally available for use by area sources. Apart from announcing that it has “updated” its approach and is applying a cost-effectiveness test to each emission point, the agency does not offer any explanation for concluding that such analysis makes technologies not “generally available” even though it found that they were “generally available” only one year earlier.

Moreover, assuming *arguendo* that § 112(d)(5) authorizes EPA to reject generally available control technologies on cost grounds even when they are in widespread use by closely similar sources, EPA does not provide a rational basis for considering cost solely in terms of dollars per ton. It bears emphasis that EPA itself has found that the emissions from PVC plants –

major sources and area sources alike – consists largely of pollutants that are known or probable carcinogens. Some hazardous air pollutants are more dangerous than others. Vinyl chloride and dioxins, for example, are known carcinogens. The danger posed by these pollutants is not adequately captured by the tons emitted. Dioxins are toxic in the billionths of a gram, so that the cost-effectiveness of reducing them cannot possibly be measured in dollars per ton. Vinyl chloride can cause cancer in communities like Mossville, even if it is emitted in pounds per year rather than tons per year. Discussing the benefit of reducing emissions of such pollutants in a community like Mossville solely in terms of dollars per ton captures little if any of the real-world benefits of reduction. Congress’s purpose in enacting § 112 was to protect people from the toxic threat posed by such hazardous air pollutants, not to chase an abstract concept of reducing emissions by an amount that EPA views as cost-effective in terms of dollars per ton. Nowhere does EPA explain how its cost-per-ton analysis implements Congress’s intent or is even relevant to it.

Remarkably, although EPA has elected to set a GACT standard for the Mossville plant that will literally do nothing to reduce the toxic emissions from its process vents, EPA estimates that this plant has some of the highest process vent emissions of any PVC plant, major sources included. EPA estimates that the Mossville plant emits more than a ton of total organic HAP from its process vents, GACT Memo. at 21, making it the second worst-emitting source of process vent emissions in the entire PVC category, EPA-HQ-OAR-2002-0037-0192 (“Revised Baseline Emissions Memo”) at 8. The Mossville plant also has the very worst process vent emissions of vinyl chloride. *Compare* GACT Memo at 21 *with* Revised Baseline Emissions Memo at 8. Indeed, the Mossville plant’s process vent emissions make up approximately 20% of the total emissions for the entire category, according to EPA’s estimate. *Id.*

In addition to considering cost-effectiveness in terms of the health and safety benefits that reductions could yield, EPA could consider cost (or cost-effectiveness) in terms of companies’ ability to afford to reduce their toxic pollution. As EPA has recognized, the companies that own PVC plants are not small businesses, but rather large companies – many of which are multinational in scope – that have billions of dollars in annual revenues. EPA-HQ-OAR-2002-0037-0178 (“EIA”) at 20-21. Saint-Gobain, the foreign company which owns the Mossville plant, had more than \$54,000,000,000.00 in revenues in 2010. *Id.* at 21. It could easily afford to pay \$169,355 that it would cost to install a refrigerated condenser. Indeed, the cost of that technology – which could save lives and prevent serious illness in Mossville – would be just .000314% of Saint-Gobain’s annual revenues. Although EPA need not consider companies’ revenues to determine that the cost of a technology that is in widespread use is generally available, the ample ability of Saint-Gobain to pay for reduction technology reinforces that refrigerated condenser technology is generally available within the meaning that Congress intended that term to have, and is even cost-effective (to use the inappropriate and unlawful frame EPA has created for this analysis for the purpose of argument). *See* 74 Fed. Reg. at 32,824 (GACT refers to “methods, practices and techniques which are commercially available and appropriate for application by the sources in the category considering economic impacts.”) (quoting S. REP. NO. 101-228, at 171-72).

Underlying EPA’s findings about the cost per ton of emission reductions are the agency’s estimates of the Mossville plant’s baseline emissions, the emission reductions that it could

achieve through meeting the MACT standard for PVC-only process vents, and the cost of the technology involved. EPA estimates that the Mossville plant emits .0584 tpy of vinyl chloride, .00000000132 tpy of dioxins, 1.07 tpy of total organic HAP, and .677 tpy of HCl. GACT Memo at 21; EPA-HQ-OAR-2002-0037-0097 (“Proposed Baseline Emissions Memo”) at 8.³ EPA’s approach to estimating each source’s baseline emissions, however, was completely different than its approach for estimating that same source’s emissions for the purpose of establishing emission standards. EPA states that to calculate baseline emissions it used the highest average emission test result. Proposed Baseline Emissions Memo at 3. In estimating the same plant’s emissions for standard setting purposes, however, the agency used a 99% UPL approach. GACT Memo at 8. Notably the results of that approach are significantly higher than the results of the approach EPA employed for estimating baseline emissions. For example, EPA states that the “maximum” total organic HAP test result for the Mossville plant was 83.4 ppmv but the 99% UPL was 135 ppmv. GACT Memo at 8. For THC, the maximum test result was 22.2 ppmv, but the 99% UPL was 45.3 ppmv. *Id.* at 9.

That EPA’s emission estimates for baseline purposes are so much lower than its estimates for standard setting purposes reflects EPA’s desire to assure that its standards reflect the full range of sources’ actual emissions and not just the emission levels the source happens to achieve during stack testing. Without endorsing the agency’s approach to estimating variability, the agency’s desire to account for the full range of emissions should apply equally to both purposes. As the agency must realize, its baseline emissions estimates drove its cost per ton estimates and, thus, its decisions about whether a given technology is or is not “generally available” under § 112(d)(5). Had EPA used the same approach to estimating emissions for the purpose of calculating baseline emissions that it used for setting standards, it would have concluded that baseline emissions are far higher and the cost per ton of emission reductions far lower. Nowhere does EPA provide a rational basis for using completely different methods – that generate completely different results – for estimating emissions from the same source.

Also unexplained is EPA’s conclusion in the final rule about the extent to which a refrigerated condenser would reduce emissions from the Mossville plant. EPA’s GACT Memo indicates that meeting the MACT standard would reduce this plant’s total organic HAP emissions by .257 tons per year, a reduction of approximately 24%. *Compare* GACT Memo at 21 (baseline emissions) *with id.* at 25 (projected reductions from meeting MACT standards). But EPA indicates in its Revised Cost and Emission Reductions Memo that the same technology can reduce total organic HAP emissions by more than 99%. Revised Cost and Emission Reduction Memo at 6 (Table 3). In the final rule, EPA has provided no rational basis for assuming that, if the Mossville plant would meet the MACT standards by installing a refrigerated condenser – as the agency states it would – the Mossville plant would not achieve a level of emission reduction far greater than 24%.

Moreover, even if the other flaws in EPA’s GACT analysis for the Mossville plant could be overlooked, the agency fails to provide a rational basis for its conclusion that the cost-

³ EPA provided a baseline emissions estimate for the Mossville Plant’s HCl emissions only in the Proposed Baseline Emissions Memo.

effectiveness of a refrigerated condenser would be \$169,355 per ton, GACT Memo at 25. At proposal, EPA determined that although the total cost of installing a condenser would be \$760,527, the Mossville plant would realize annual “net savings” of \$114,794 per year from this investment. Proposed Cost and Emission Reductions Memo at 3, 6 (Table 2-1-A). In its final rule, EPA estimated that the cost of installing a condenser would be \$302,550 for the Mossville plant, but that the condenser would have an annual cost of \$140,797. GACT Memo at 25. Nowhere does EPA say how or why it decided that a condenser would have a net annual cost rather than a net annual saving. Further, because the cost per year of a condenser under EPA’s proposed approach would be negative – i.e., because it would yield net savings instead of a cost – the cost-effectiveness in dollars per ton would also necessarily be significantly different than the \$704,814 EPA estimated in its final rule, *id.* Specifically, because the annual cost of a condenser would be less than zero, the cost-per ton of a condenser would also be less than zero. The agency’s unexplained reversal is especially glaring in light of the agency’s apparent conclusion that the cost of installing a condenser would be less than half what the agency estimated at proposal (\$302,550 rather than \$760,527), a change which would be expected to make the annual net savings from installing a condenser even greater than EPA initially estimated.

As noted above, EPA adopted a different rationale for refusing to require the Deer Park plant to meet the MACT standard for process vents than it adopted for refusing to require the Mossville plant to meet these standards. Specifically, EPA argues that it refused to set the process vent standards for the Deer Park plant at the level of the MACT standards because it was meeting these standards. Although EPA set standards for some process vent emissions that are lower than MACT based on its conclusion that the Deer Park plant is already achieving these levels – even after its emissions were adjusted upward with the 99% UPL – the agency set a total organic HAP standard that is almost three times higher than the MACT rule. *Compare* 77 Fed. Reg. at 22,863 (area source standard is 29 ppmv) *with id.* at 22,852 (MACT standard is 9.8 ppmv). EPA does not appear to contend that the Deer Park plant is already meeting the 9.8 ppmv MACT standard. With respect to total organic HAP, EPA’s stated rationale for refusing to set GACT standards at the same level as MACT standards is refuted by the record and, therefore, arbitrary and capricious.

In addition to the other changes made to its GACT standards for process vents, EPA eliminated the emission standards for HCl. According to EPA, the Mossville plant currently emits .677 tons per year of HCl, making it one of the worst HCl emitters of any area source or major source PVC plant. Proposed Baseline Emissions Memo at 13. Although EPA proposed standards for the Mossville plant’s HCl emissions, which would have reduced them by .612 tons per year (more than 90%), EPA’s final rule does not include emission standards for HCl from area sources. EPA does not provide any explanation for the change, and provides only a conclusory (and misleading) statement “We are not setting separate limits for HCl from process vents at area sources.” 77 Fed. Reg. at 22,886. As the record shows, EPA is not setting any standards for HCl emissions from area sources; it is not setting “separate” standards for these emissions nor does it claim to be setting any other type of standard for them.

EPA’s complete failure to explain its abandonment of HCl standards for two area source PVC plants – that, as shown above, are synthetic area sources that are virtually indistinguishable

from major sources in every practical sense – is arbitrary and capricious in itself. Further, EPA provides no basis to refute its own conclusion at proposal that the control measures that major sources will adopt to meet the MACT standard for HCl are also “generally available” for area sources within the meaning of § 112(d)(5).

As noted above, EPA made clear in the proposed rule that all the technologies that major source PVC plants will use to meet the MACT standards are generally available for area source PVC plants:

For the aforementioned reasons, we have determined, pursuant to CAA sections 112(d)(5) and (6), that the control technologies and management practices necessary to meet the proposed major source emission standards are generally available for area sources in this category. Accordingly, we are proposing the GACT level of control for area sources is the same as the MACT level of control for major sources, and that these area sources must meet the same standards as proposed in this rule for major sources.

76 Fed. Reg. at 29,542.

EPA stated that plants would meet the proposed HCl standard either with a refrigerated condenser, a vent gas absorption system, a backup thermal oxidizer, a packed bed scrubber system, or some combination of these technologies. Proposed Cost and Emission Reductions Memo at 2. The agency assumed that plants that needed both vinyl chloride and HCl reductions, as the Mossville plant did, the refrigerated condenser would sufficiently reduce the amount of vinyl chloride being sent to the thermal oxidizer that it would also allow compliance with the HCl standard. Proposed Cost and Emission Reductions Memo at 3. Thus, EPA concluded that the Mossville plant in particular could meet the HCl standard with a condenser alone, and that installing the condenser would generate “net savings” of \$114,794 each year. *Id.* at 3, 6. Because EPA determined that the Deer Park plant has no HCl emissions, Proposed Baseline Emissions Memo at 13, that plant would not have to take any steps to reduce HCl emissions. Thus, not only are all the technologies that could be used to control HCl “generally available” for area sources, EPA expressly concluded that the cost of compliance for the Mossville plant would be negative – i.e. that the applicable technology would yield net savings – and that the cost of compliance for the Deer Park plant would be zero. Therefore, to the extent EPA is relying on a cost-effectiveness argument to refuse to include a HCl standard equal to the MACT in its GACT standards for area source PVC plants – although it bears emphasis that no such rationale appears in the record – the agency’s decision is arbitrary and capricious. Based on the record, the cost-effectiveness of meeting the major source MACT standard for HCl is infinite for both area sources.

Moreover, in the proposed rule, EPA stated: “We also believe it is appropriate to establish area source emission standards for HCl because, although not an urban HAP, it is formed as a product of combustion in controlling vents containing vinyl chloride and HAP.” 76 Fed. Reg. at 29,541. EPA proposed to regulate HCl, presumably to protect public health. In the final rule, EPA has failed to rationally explain, based on the purpose of sections 112(c)(3) and 112(k) and the public health reasons for which it initially proposed the HCl limit, why it has not finalized an HCl standard. Further, because HCl is emitted and is likely to combine with other HAP emissions in affecting the local community’s health, EPA must reconsider its decision not

to set any standard. EPA may not rationally ignore the fact that there is the potential for cumulative impacts to public health due to the combination of HCl and other emitted HAPs.

As EPA has explained, when EPA regulates area sources, it is necessary to “evaluate regulation of all 188 HAPs, not just the 33 urban HAPs listed under [§ 112(k)].” EPA, National Air Toxic Program: The Integrated Urban Strategy; Notice, 64 Fed. Reg. 38,706, 38,720 (July 19, 1999). Section 112(d)(1) requires that EPA establish emission standards for each of “the hazardous air pollutants listed for regulation.” 42 U.S.C. § 7412(d)(1).

c. In promulgating the area source rule, EPA unlawfully failed to consider and provide sufficient protection for public health.

Because PVC area sources were listed to fulfill the legal duty to protect public health established by CAA §§ 112(c)(3) and (k), 42 U.S.C. §§ 7412(c)(3), (k), EPA may not lawfully fail to consider public health in setting area source standards for this source category. EPA must grant reconsideration to do so.

The statutory provisions under which EPA listed PVC area sources both focus on public health and include specific requirements to reduce emissions and cancer risk attributable to these sources. In particular, Section 112(c)(3) directs that one of the reasons for listing and regulating area sources is because they “present[] a threat of adverse effects to human health . . . (by such sources individually or in the aggregate).” 42 U.S.C. § 7412(c)(3). Furthermore, EPA is required to list such sources in order to regulate “90 percent of the area source emissions of the 30 hazardous air pollutants that present the greatest threat to public health.” *Id.* Similarly, Section 112(k)(1) states that the purpose of the area source program is:

to achieve a substantial reduction in emissions of hazardous air pollutants from area sources and an equivalent reduction in the public health risks associated with such sources including a reduction of not less than 75 per centum in the incidence of cancer attributable to emissions from such sources.

Id. § 7412(k)(1); *see also id.* § 7412(k)(3)(B) (requiring EPA to “assure that sources accounting for 90 per centum or more of the aggregate emissions of each of the 30 identified hazardous air pollutants are subject to standards pursuant to subsection (d) of this section”).

EPA initially listed PVC plants as an area source in order to fulfill the requirements to protect public health created by CAA §§ 112(c)(3) and (k). 67 Fed. Reg. 43,112 (June 26, 2002). Five years later, EPA finalized PVC area source standards that matched the then-applicable MACT standard. 72 Fed. Reg. 2930 (Jan. 23, 2007) (promulgating 40 C.F.R. Pt. 63 subpt. DDDDDD, requiring sources to follow existing Part 61). In 2011, EPA’s proposed revision to the PVC area source rules continued this practice, again proposing to set MACT-based GACT standards, for vinyl chloride, total HAP, dioxins and other POM (CDD/CDF), and HCl. 76 Fed. Reg. at 29,541, *id.* at 29,542 (“we determined that GACT standards for area sources should be the same as the major source MACT standards, based on the similarity between production processes, emission points, emissions, and control technologies”).

Then, however, for the final rule, EPA set weaker emission standards for some emission points at area sources, such as process vents, stripped resins, and wastewater (rather than the MACT-based standard it had proposed), without considering or addressing the public health impacts of this change. *See* GACT Memo at 24, 25, 27. In doing so, EPA “considered the costs and economic impacts of available control technologies and management practices on area sources,” but did not address public health. 77 Fed. Reg. at 22,887; GACT Memo. As stated: “For each emission point, multiple control options beyond level of control currently available were evaluated on a basis of cost effectiveness (i.e., dollars per ton of total organic HAP reduced per year),” not based on or even considering public health. GACT Memo at 24.

Even the metric used in the cost effectiveness analysis (which is fundamentally flawed for reasons discussed elsewhere in this petition) belies EPA’s complete failure to consider public health. No public health-focused analysis of hazardous air pollutant reductions would likely use, or be limited to, measures of “tons” or “tons per year.” In 1999, EPA recognized that: “Assessing progress in reducing cumulative risks from HAPs will require us to move away from a focus on assessing reductions in tons per year emitted, toward a focus on estimating reductions in cancer and non-cancer risks associated with lower emissions.” 64 Fed. Reg. at 38,729 (emphasis added). However, the EPA focuses its GACT analysis on the cost “per ton” of pollutant reduction which ignores consideration of the health impact. The dangerous pollutants emitted by PVC area sources (including vinyl chloride, and organic HAPs) can cause severe health problems and increased health risks in amounts that are significantly smaller than tons, such as grams and pounds. Using tons as the metric also distorts the inquiry and creates a bias in favor of allowing greater amounts of pollution in the cost-effectiveness analysis itself – to the detriment of public health.

Because protecting public health is a primary purpose of the PVC area source rule and thus a legally required factor for EPA to consider for sources, including PVC plants, which it has listed pursuant to CAA §§ 112(c)(3), (k), EPA must grant reconsideration to consider the public health impact of the area source rule.

To fulfill its duty to consider the factor of public health in setting PVC area source standards, EPA must, at minimum, consider the following factors:

1. Whether the rule will achieve or contribute to the achievement of “a substantial reduction in emissions of hazardous air pollutants from area sources,” which is a key purpose of the area source program. 42 U.S.C. § 7412(k)(1) (emphasis added).
2. The potential reductions in cancer and non-cancer risks that would be associated with lower emissions, and whether the rule will achieve or contribute to the achievement of the reduction of cancer incidence by 75 percent, which is a major purpose of the area source program. 42 U.S.C. § 7412(k)(1).
3. The toxicity and related health hazards created by the specific emitted HAPs, including vinyl chloride, dioxins, HCl, 1,3-butadiene, ethylene dichloride, methylene chloride, as well as organic HAP that have the potential to be emitted (such as benzene, acetaldehyde, chloroform, and formaldehyde), including a consideration of children’s health and early-life exposure. Further, EPA should consult the best available science to consider these hazards, using the IRIS reference values,

California EPA reference values (if there is no IRIS number or if the IRIS number is extremely outdated), and the National Academy of Sciences recommendations.⁴ EPA has recently updated the IRIS value for dioxin and should consider that.⁵

4. Environmental justice, as further discussed below, due to the Administrator's commitment to do so and due to the fact that socioeconomic disparities can increase an individual's vulnerability to the effects of toxic air pollution.
5. The need for stronger standards in the specific communities affected by the area sources – due in part to the current level of baseline health and the level of toxic air pollution already present in the community from these and other emission sources.⁶

Petitioners anticipate that an appropriate consideration of public health – consistent with the statutory mandate to achieve “a substantial reduction in emissions” and reduce cancer risk by at least 75 percent, 42 U.S.C. § 7412(k)(1) – would demonstrate that much stronger standards are needed. Petitioners therefore urge EPA to set GACT for area sources that match the MACT standards finalized for major sources (including any such stronger MACT standards set after reconsideration) in order to fulfill the purpose of the area source program to protect public health. The MACT rule is not as protective as a rule requiring emission levels that pose no risk to human health. However, as a standard of industrial performance based on extant technologies, the MACT-based GACT standard for PVC area sources, as originally defined in the proposed rule, would reduce more toxic pollution that pose health risks than the final GACT standard for PVC area sources. For example, as shown in Table 18 in the preamble to the Final Rule, the MACT rule for PVC major sources would achieve a reduction of 217 tons per year in total HAP, and a reduction of 0.017 g/yr in dioxins, including from process vents and stripped resins, which are sources that have *no* emission reduction under the GACT rule for PVC area sources 77 Fed. Reg. at 22,897; *see also* 76 Fed. Reg. at 29,557-58 (describing total emission reductions for proposed rule, not broken out between major and area sources).

⁴ See values for each pollutant at www.epa.gov/iris; *see also* Nat'l Acad. of Sciences, Science and Decisions: Advancing Risk Assessment (2009), http://www.nap.edu/catalog.php?record_id=12209 (“NAS 2009”).

⁵ 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD); CASRN 1746-01-6, <http://epa.gov/iris/subst/1024.htm>.

⁶ *See, e.g.*, NAS 2009 at 135-39, 145-51 (explaining that “[h]ow the population responds to chemical insults depends on individual responses, which vary among individuals”; and “[i]f the sensitive people constitute a distinct group either because of their numbers or because of identifiable characteristics—such as ethnicity, genetic polymorphism, functional or health status, or disease—they should be considered for separate treatment in the overall risk assessment”); U.S. EPA, Residual Risk Report to Congress, EPA-453/R-99-00, at 42, 67 (Mar. 1999) (discussing factor of “overall health” and recognizing the need to consider sensitive subpopulations that “consist of a specific set of individuals who are particularly susceptible to adverse health effects because of physiological (e.g., age, gender, pre-existing conditions), socioeconomic (e.g., nutrition), or demographic variables, or significantly greater levels of exposure,” based on various demographic factors”).

d. EPA’s Decision To Eviscerate The GACT Emission Standards For Area Sources Is At Odds With The Agency’s Stated Commitment To Environmental Justice and Is Arbitrary and Capricious.

In a number of important actions taken since 2009, including EJ Plan 2014,⁷ EPA has stated a strong commitment to environmental justice, which is also consistent with the 1994 Executive Order on Environmental Justice, No. 12,898, issued by President Clinton. EPA defines “environmental justice” as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”⁸ As EPA has recognized: “For far too long, many minority, low-income, tribal, and indigenous people in the United States have experienced higher levels of environmental pollution and other social and economic burdens.”⁹ As a result, “[t]he Administrator has directed the Agency to address the needs of overburdened communities by decreasing environmental burdens, increasing environmental benefits, and working alongside them to build healthy, sustainable, and green communities.”¹⁰

Despite these important statements, EPA’s action in the final rule allows increased toxic pollution from PVC area sources that exacerbates the adverse impacts of this pollution on people of color and low-income communities. As EPA previously recognized, there are particularly serious environmental justice concerns in Mossville, near Lake Charles in Calcasieu Parish, Louisiana, where the CertainTeed Corporation area source is located. In addition, there are also environmental justice concerns due to the rule’s impact on communities near Deer Park, TX.

After the issuance of the proposed PVC rule, EPA received testimony discussing the environmental justice concerns of this rule from affected community members.¹¹ Then, despite overwhelming evidence that a stronger area source rule is needed – at least at the same level as the MACT major source rule – the EPA issued a final rule for PVC area sources that provides significantly less health protection for Mossville and Deer Park community members.

⁷ EPA, Incorporating Environmental Justice in Rulemaking (Sept. 2011), <http://www.epa.gov/environmentaljustice/resources/policy/plan-ej-2014/plan-ej-rulemaking-2011-09.pdf>; EPA’s Action Development Process: Interim Guidance on Considering Environmental Justice During the Development of an Action (July 2010), <http://www.epa.gov/environmentaljustice/resources/policy/considering-ej-in-rulemaking-guide-07-2010.pdf>; see also EJ Plan 2014, <http://www.epa.gov/environmentaljustice/plan-ej/>.

⁸ EJ Plan 2014 at 3.

⁹ EJ Plan 2014 at 1.

¹⁰ *Id.*

¹¹ See, e.g., Testimony of Delma and Christine Bennett, EPA Public Hearing on Proposed Rule for National Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production (June 9, 2011) (“EPA should be working to end environmental injustice, not hide it.”); Testimony of Wilma Subra (June 9, 2011).

Environmental Petitioners call on EPA not to turn its back on the communities of Mossville/Calcasieu Parish, LA and Deer Park, TX. EPA must revisit this rule and set area source standards at least as strong as the major source MACT because of the critical need to provide long-awaited environmental justice for these communities. EPA should grant reconsideration to truly herald the “new era of outreach and protection for communities historically underrepresented in EPA decision making” and “include environmental justice principles” in a new, stronger final rule, as Administrator Jackson committed to do early in her tenure.¹²

i. Background on the Community and Environmental Justice Impacts in Mossville and Calcasieu Parish, LA

Mossville is an unincorporated, historically black community consisting of approximately 375 households near Lake Charles in Calcasieu Parish, Louisiana, which EPA has recognized as an environmental justice community.¹³ Mossville’s history goes back to the late 18th century, and it grew as a community as African Americans emancipated from slavery settled there.¹⁴ As of the 2010 census, the Calcasieu Parish overall, with a population of approximately 190,000, exceeds the national averages for percentage of the population who are black (24.8% vs. 12% nationally) and those living below the poverty line (16.2% vs. 13% nationally).¹⁵

Calcasieu Parish and the area around Mossville has been an industrial center since World War II containing a significant number of sources of community exposure to toxic air pollution, and increasing the overall cumulative impact of that pollution.¹⁶ Due in part to tax incentives and zoning laws, “several areas within and surrounding the Mossville community ... have been designated for hazardous and heavy industrial development by the Calcasieu Parish government.”¹⁷ With thirty-three facilities accounting for nearly six million pounds of releases per year, Calcasieu Parish now has the third highest yearly total of toxic releases into the air in the state of Louisiana.¹⁸

¹² EJ Plan 2014 at 1 (quoting Jackson, Lisa P., “Seven Priorities for EPA’s Future.” January 12, 2010. Available at: <http://blog.epa.gov/administrator/2010/01/12/seven-priorities-for-epas-future>).

¹³ Mossville Env’tl. Action Now, *et al.* v. USA, Report No. 43/10, 2 (Inter-Am. Comm’n H.R. Pet. No. P-242-05) (2008) (“IACHR Petition”); Observations of the Government of the United States of America, Mossville Env’tl. Action Now, *et al.* v. USA, 12 n.24. (Inter-Am. Comm’n H.R. Pet. No. P-242-05).

¹⁴ IACHR Petition at 33.

¹⁵ U.S. Census Bureau, *Calcasieu Parish, Louisiana Quick facts* (available at <http://quickfacts.census.gov/qfd/states/22/22019.html>).

¹⁶ CNN, Toxic Towns: People of Mossville are “Like an Experiment”, http://articles.cnn.com/2010-02-26/health/toxic.town.mossville.epa_1_superfund-site-environmental-justice-cancer?_s=PM:HEALTH (last visited 06/05/2012).

¹⁷ Second Amended Petition, Mossville Env’tl. Action Now, *et al.* v. USA, 2 (Inter-Am. Comm’n H.R. No. P-242-05); *id.* at 38 % n.75 (citing Calcasieu Parish Zoning Map, App. 1).

¹⁸ Louisiana Department of Environmental Quality, 2004 Toxics Release Inventory Annual Report, 7 (October 2006) (available at

Mossville is located in close proximity to at least a dozen industrial facilities, including the PVC area source CertainTeed Corporation, which began operation in Mossville in 1975.¹⁹ Three of these facilities are located within the five square mile area that constitutes Mossville proper, while the other eleven are within one-half mile of the community.²⁰

According to USA Today's "Special Report: Toxic Air and America's Schools," all schools in close proximity to Mossville – Western Heights Elementary School, Westlake High School, Westwood Elementary School, S.P. Arnett Middle School, Maplewood Middle School, and Little Learners Montessori School – rank in the top two percent of schools with the worst air, determined by their exposure to cancer-causing and other toxic chemicals.²¹

Residents of Mossville have been concerned about the health effects of toxic emissions from facilities surrounding their community for decades. As part of a concerted effort to reduce their exposure to toxics, they formed Mossville Environmental Action Now to protect their health and the health of their families and fellow community members.

Following repeated complaints from Mossville residents concerning their exposure to chemical releases from industrial facilities, EPA Region VI requested that the Agency for Toxic Substances and Disease Registry ("ATSDR") conduct an initial health consultation of Mossville in 1998 to determine the impact of the toxic emissions on the public health and environment of the community.²² The health consultation found elevated levels of dioxins in the blood of Mossville residents, leading to a number of follow-up actions and investigations by ATSDR and other organizations:

<http://www.deq.louisiana.gov/portal/Portals/0/AirQualityAssessment/Data%20Collection/TRI/2004%20TRI%20Summary%20Report.pdf>.

¹⁹ Mossville Environmental Action Now et al., *Industrial Sources of Dioxin Poisoning in Mossville, Louisiana: A Report Based on the Government's Own Data*, ii, 1 (July 2007) (other sources around Mossville, include Arch Chemical (hydrazine and specialty chemicals), Bio-lab (water treatment biocides and specialty chemicals), Georgia Gulf (vinyl chloride monomer), Sasol North America Inc. (specialty chemicals), Conoco Phillips (petroleum products), Entergy - Roy S. Nelson Power Plant (electricity from coal and natural gas), Lyondell Chemical Worldwide Incorporated (toluene diisocyanate ("TDI") and nitric acid), Excel Paralubes ("Group II base oil," which is the primary base stock in motor oil), PPG Industries, Inc. (chlorine, vinyl chloride, and other chemicals), PHH Monomers (polyvinyl chloride polymer), Tessenderlo Chemical (sodium hydrosulfide), and Tetra Chemical (calcium chloride)).

²⁰ Second Amended Petition at 2; *id.* at 35-36 (Map of Mossville Area Industrial Facilities & tbl. 1: Industrial Facilities Located in Close Proximity to the Mossville Community and Their Reported Amounts of Pollution Released During 1987-2006).

²¹ USA Today, Smokestack Effect, <http://content.usatoday.com/news/nation/environment/smokestack/polluter/38602> (last visited 06/05/2012).

²² ATSDR, Health Consultation Calcasieu Parish (Calcasieu Estuary) (October 16, 1998) (available at <http://www.atsdr.cdc.gov/HAC/pha/PHA.asp?docid=720&pg=0>).

- A 1999 ATSDR exposure investigation showed blood dioxin levels of Mossville residents to be more than three times higher than “background” level, especially in residents older than 47, and “[t]he median and mean concentrations of dioxin TEQs in the EI participants were greater than the 95th percentile concentration of a comparison population.” ATSDR recommended “Reduc[ing] human exposures to dioxin from significant exposure pathways that are identified.”²³
- A follow-up exposure investigation by ATSDR in 2006 again found elevated levels of dioxins in the blood of Mossville residents, with an average concentration three times higher than ATSDR’s national comparison group.²⁴ The study also found dioxin levels in fish to be elevated to a dangerous level, resulting in the publication and release of a fish consumption advisory for fish caught in the area. Specifically, ATSDR dioxin test results revealed average dioxin levels in fish samples was 20.55 ppt, well above the national range of dioxin concentrations in fish: 1.43 – 2.20 ppt.²⁵
- Studies have also found elevated dioxin levels in indoor dust and in yard soil, where children of Mossville play.²⁶
- In 2007, ATSDR published a comparison of cancer incidence data for residents of Calcasieu Parish versus incidence in the population of Louisiana at large. The report found elevated rates of lung cancer for women. The report also found higher rates of different kinds of cancer among different demographic groups, including higher cancer rates for colon and rectum, and lung and bronchial cancers in black women, and higher rates of urinary bladder cancer in black men, than in the rest of the state.²⁷
- An analysis of ATSDR blood sampling data and EPA emissions information for facilities in the vicinity of Mossville evidenced a correlation between the types of dioxins found in the blood of Mossville residents, primarily 1,2,3,7,8-Pentachlorodibenzo-p-dioxin, 2,3,7,8-Tetrachlorodibenzo-p-dioxin, and three Hexachlorodibenzo-p-dioxin compounds, and those emitted by industrial facilities surrounding the community.²⁸

²³ ATSDR, Exposure Investigation Report Calcasieu Estuary (November 19, 1999) (available at <http://www.atsdr.cdc.gov/HAC/pha/PHA.asp?docid=712&pg=0>).

²⁴ ATSDR, Follow-up Exposure Investigation Calcasieu Estuary, Table 43 (March 13, 2006) (available at <http://www.atsdr.cdc.gov/HAC/pha/CalcasieuEstuary/CalcasieuEstuaryHC031306Tables.pdf>).

²⁵ ATSDR, Follow-up Exposure Investigation Calcasieu Estuary Report (March 13, 2006) (available at <http://www.atsdr.cdc.gov/HAC/pha/CalcasieuEstuary/CalcasieuEstuaryHC031306.pdf>).

²⁶ Mossville Environmental Action Now, et al., Industrial Sources of Dioxin Poisoning in Mossville, LA at 8-11.

²⁷ ATSDR, Assessment of Cancer incidence from the Louisiana Tumor Registry from 1988-2004, 3-6 (September 27, 2007), available at <http://www.atsdr.cdc.gov/hac/pha/CalcasieuCancer/CalcasieuCancerHC92707.pdf>.

²⁸ Mossville Environmental Action Now, et al., Industrial Sources of Dioxin Poisoning in Mossville, LA.

- Health surveys of the community and residents' experience illustrate a serious concern about pollution-related health problems. A 2009 health study conducted by Subra Company determined a correlation between the toxic emission from industrial facilities and the health problems suffered by residents of Mossville. According to the survey, "57% of Mossville community members surveyed considered themselves sick and report being sick three days per month to every day each month. Of the population surveyed 88% had respiratory ailments, 54% had nose and throat illnesses, 54% had headaches, dizziness, tremors, and seizures, 52% had skin problems and 43% had cardiovascular conditions."²⁹ An additional health survey of local residents found a similar array of symptoms that can be associated with toxic air pollution.³⁰
- Air monitoring in Mossville has found a vast array of toxic chemicals in the air, including elevated levels of vinyl chloride.³¹ TRI-reported data further illustrates that CertainTeed's emissions have increased during the last decade, from 2,605 pounds per year in 2002, to 6,820 pounds per year in 2010.³²

Due to the federal and state governments' longstanding unwillingness to adequately address the public health crisis in Mossville, community members, represented by Advocates for Environmental Human Rights, filed a petition with the Inter-American Commission on Human Rights on March 7, 2005 on the basis that the "[United States of America's] environmental policies expose Mossville residents, the majority of which are African-Americans, to a disproportionate pollution burden."³³ Despite the U.S. Government's arguments to the contrary,³⁴ the Commission judged the petition admissible with respect to articles II, right to equality before the law, and V of the American Declaration of the Rights and Duties of Man.³⁵

The U.S. government, in observations filed in this case, emphasizes its recognition of and actions taken to address the public health conditions in Mossville, including Louisiana Department of Environmental Quality and EPA's "regulatory and enforcement programs to

²⁹ Wilma Subra, Health Report on Mossville, Calcasieu Parish, Louisiana, 27 (May 25, 2009) (available at <http://www.ehumanrights.org/docs/Mossville-Chemicals-and-Health-Report.pdf>)

³⁰ HR Petition at 73-74 (citing Marvin Legator, Mossville Health Symptom Survey, *supra* note 12, at p. 15, App. 4.).

³¹ Mossville Environmental Action Now, et al., Industrial Sources of Dioxin Poisoning in Mossville, LA at 1, n.3 (citing Wilma Subra, Environmental Impacts in Communities Adjacent to PVC Production Facilities (available at http://www.pvcinformation.org/assets/pdf/Wilma_Subra_report_on_PVC_fenceline_communities.pdf)).

³² CertainTeed, ECHO report, <http://www.epa-echo.gov/cgi-bin/get1cReport.cgi?tool=echo&IDNumber=2201900025..>

³³ IAHCR Report No. 43/10 at 1.

³⁴ Response of the Government of the United States of America, Mossville Env'tl. Action Now, *et al.* v. USA, 2 (Inter-Am. Comm'n H.R. Pet. No. P-242-05)

³⁵ Report No. 43/10 at 12.

address pollutants emitted by Mossville facilities.”³⁶ The U.S. response to the petition has recognized that EPA Region VI has designated Mossville as an “environmental justice community,” a designation which takes into account the race, economic status, and impact from industrial sources to which a community is subject.³⁷ This designation, as determined through the Environmental Justice Index Methodology, is used to designate priority areas and “incorpora[te] environmental justice into program activities.”³⁸ Further, EPA has stated that, in response to this petition, “the Agency created a comprehensive approach” which included the goal of achieving “Safer Air Quality.”³⁹ That statement is simply not borne out by the current rulemaking.

Finally, there is also information showing an environmental justice impact in Deer Park, Texas, from the OxyVinyls plant, which EPA must consider. For example, an analysis of demographics, alone, within a 1-mile radius of that facility, shows that the most-exposed community members are 27% Hispanic or Latino. This is higher than the national percentage of Hispanic/Latino Americans (approximately 17%).⁴⁰ In addition, EPA’s school air toxics monitoring project also found that for a local Deer Park school, San Jacinto Elementary, located near Deer Park High School, that: “Levels of 1,3-butadiene in the air at the school indicate a potential for concern for long-term, continuous exposure,” and that “in combination with the results for 1,3-butadiene, there is a potential concern for long-term, continuous exposure to the pollutant mixture.”⁴¹ These are pollutants of concern emitted by PVC plants. EPA has failed to consider the EJ impact of its area source rule on the health of this community.

EPA’s action in this rulemaking – singling out Mossville and Deer Park for less protection from toxic air pollution than communities with other PVC sources – is out of line with the claims made by the United States in response to the Human Rights Petition for Mossville, for both plants, it is inconsistent with the commitment to environmental justice made by Administrator Jackson to “[p]rotect the environment and health in overburdened communities,”⁴² with EPA’s own past policy

³⁶ Observations of the Government of the United States of America, *Mossville Env’tl. Action Now, et al. v. USA*, 2 (Inter-Am. Comm’n H.R. Pet. No. P-242-05)

³⁷ *Id.* at 12, n.24 (explaining that “Mossville has been so designated according to EPA Region 6’s ‘EJ Index Methodology,’ which considers, inter alia, a community’s percentage of minority and economically-stressed individuals and the likelihood of impact from industrial operations.”) (citing EPA, Degree of Vulnerability and Potential Environmental Justice Index Demographic Analysis System, Version 4.2.1, User’s Guide (Jan. 1996)).

³⁸ EPA, Executive Summary: Region VI FY 2007-2008 Environmental Justice Action Plan, 21-22 (available at <http://www.epa.gov/compliance/ej/resources/reports/actionplans/r06-ej-actionplan-2007.pdf>).

³⁹ EPA, Summary of Actions, Mossville Community, Calcasieu Parish, Louisiana at 1-2 (Oct. 2010).

⁴⁰ See factfinder2.census.gov: QT-P6 Race Alone or in Combination and Hispanic or Latino: 2010, 2010 Census Summary File 1 dataset, downloaded for the relevant Census Block groups from factfinder2.census.gov, and analyzed by census block groups in GIS 10.0 using aerial apportionment.

⁴¹ San Jacinto Elementary School and Deer Park Junior High School, Deer Park, TX: Results and Analysis of EPA’s monitoring (based on monitoring data from 2009-10), available at <http://www.epa.gov/schoolair/SanJacinto.html> (downloaded June 13, 2012).

⁴² EJ Plan 2014, Exec. Summ. at i.

(i.e., on secondary lead smelters, 60 Fed. Reg. 32,587, 32,591-92 (June 23, 1995)), and with Executive Order 12,898. It is also notable that the U.S. response to the petition stated, as a reason why the petition should be denied, the fact that petitioners had brought litigation on the PVC rule and won, leading to the current rulemaking. Unfortunately, this rulemaking has not provided the relief that petitioners believed it would (and that even the U.S. suggested that it would⁴³) and instead has led petitioners to have to file this reconsideration petition and a petition for review of the final rule, even after the past, successful litigation.

ii. Lack of meaningful community involvement in the area source rule change

EPA's first environmental justice failure in this rulemaking is the refusal to involve the affected community *at all* in the critical, last-minute decision to set weaker standards for area sources.

It was a shock for the community to see the final rule, which was the result of years of litigation and advocacy to try to increase local protection for public health. EPA issued the area source standards under review in this rulemaking as a result of a citizen suit that Petitioners brought to challenge EPA's failure to promulgate these standards, years after it first listed PVC plants as an area source category under CAA §§ 112(c)(3) and (k)(3)(B). PVC Area Source NESHAP, Final Rule, 72 Fed. Reg. 2930 (Jan. 23, 2007); *Sierra Club v. Johnson*, Civ. Action No. 01-1537 (PLF), 2006 WL 889801 (D.D.C. Mar. 31, 2006). The current rulemaking also occurred as a result of a court case that Petitioners brought to challenge EPA's original PVC NESHAP rule. 77 Fed. Reg. at 22,850 (discussing *Mossville Env'tl. Action Now v. EPA*, 370 F.3d 1232 (D.C. Cir. 2004)). In that case, the D.C. Circuit held that EPA had unlawfully failed to justify setting standards only for vinyl chloride, as a "surrogate" for other emitted HAPs. 370 F.3d at 1243.

Based on this successful litigation and significant advocacy, EPA was well aware of the community's strong interest in this rule. For years, Petitioners have made clear to EPA how much the Mossville and surrounding community in particular needs stronger protection from PVC pollution. Yet EPA completely failed to solicit any input on the 180-degree change it finalized on area sources. This decision singles out the Mossville environmental justice community for particularly unfair treatment, in the form of weaker air pollution standards. It also has an unfair impact on local communities in and near Deer Park, Texas.

Included in EPA's definition of environmental justice is the key component of "meaningful involvement."⁴⁴ Under EPA's own definition:

Meaningful Involvement means that: (1) potentially affected community members have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the

⁴³ U.S. Response at 31 (citing *Mossville Env'tl. Action Now v. EPA*, 370 F.3d 1232, 1243 (D.C. Cir. 2004) and the deadline suit that led to this rulemaking for area sources).

⁴⁴ EJ Plan 2014 at 3.

regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.

EJ Plan 2014 at 2. EPA did not follow any of these principles or take appropriate action to ensure meaningful community involvement in the area source rule change. EPA's failure to solicit input on the surprise change it made on area sources, between the proposed and final rule, to greatly weaken the standards applicable to area sources, is substantially out of step with the agency's environmental justice commitment. EPA should grant reconsideration to correct this problem.

iii. EPA failed to consider environmental justice and provided no rational explanation for setting weaker area source standards in view of the significant EJ impact of the PVC sources.

In its decision to shift suddenly from MACT-based GACT to weaker or "no emission reduction" GACT, EPA failed to consider environmental justice at all. Consequently, EPA also provided no rational explanation for its decision to set weaker area source standards despite the significant EJ impact of these sources. These failures are unlawful, arbitrary and capricious, and EPA must grant reconsideration to correct them and set stronger standards to mitigate the environmental justice impact of the PVC area sources.

(a) EPA must grant reconsideration to fully consider the EJ impact of the area source rule.

EPA is legally required to consider the environmental justice impact of its rulemaking decisions. Executive Order 12,898 establishes Federal executive policy on environmental justice ("EJ"). 59 Fed. Reg. 7629 (Feb. 11, 1994). This Executive Order directs Federal agencies to consider and provide environmental justice as part of their mission by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. EPA has reaffirmed the importance of this Executive Order in EJ Plan 2014 and other major guidance documents on incorporating environmental justice in rulemaking.⁴⁵ In the secondary lead smelter rulemaking, EPA recognized that environmental justice provided a valid reason to set the same standards for area sources as for major sources. 60 Fed. Reg. 32,587, 32,591-92 (June 23, 1995). EPA must not ignore this important responsibility on reconsideration, and should instead set stronger standards for area sources.

To prepare for the proposed rule, EPA performed a demographic analysis of the PVC source category as a whole and found an existing disproportionate impact. As EPA found:

An analysis of demographic data shows that the average percentage of minorities, percentage of the population below the poverty level, and the percentage of the

⁴⁵ See note 7, *supra*.

population 17 years old and younger, in close proximity to the sources, differ from the national averages by 3%, 1.8%, and 1.7%, respectively, at the 3-mile radius of concern. These differences in the absolute number of percentage points from the national average indicate a 9.4%, 14.4%, and 6.6% over-representation of minority populations, populations below the poverty level, and the percentages of the population 17 years old and younger, respectively.⁴⁶

Yet EPA failed to consider this in its area source rule change. Beyond demographics data alone, EPA should have fully consulted information available on the affected communities, including the cumulative burden of pollution on the affected communities, particularly Mossville, as described above (in the background section above), which is a community EPA itself has designated as an environmental justice community.

Instead, after dividing the final rule package into a major source rule and an area source rule that is weaker, EPA failed to consider or recognize that the environmental justice impact of the area source rule change would be dramatic on communities that are already overburdened with toxic air pollution. As discussed above, there is a significant amount of information available, much of it within EPA's possession, demonstrating that the Mossville-Calcasieu Parish area of Louisiana is an environmental justice community. As already cited above, the parish (or county) has a higher than average African-American population, and the community around Deer Park has a higher than average Latino community. Socioeconomic factors often serve as a proxy for greater vulnerability to health risks from pollution.⁴⁷ Research on health in the Mossville area has illustrated that that is the case here. The Mossville area is a community with a low level of baseline health, and containing a high number of pollution sources, including CertainTeed. Both of these factors increase community members' susceptibility to the health effects of toxic air pollution from the PVC facility. Moreover, there is epidemiological evidence available showing that African Americans, in particular, are at a much higher risk of lung cancer

⁴⁶ Memo by Tina Nдох, Review of Environmental Justice Impacts: Polyvinyl Chloride at 2 (Sept. 9, 2010), EPA-HQ-OAR-2002-0037-0109. Even though it did find a disproportionate impact, this demographics analysis was flawed and incomplete in part because it failed to look at data within a 1-mile radius; it did not break out different demographic groups to be able to assess the impact on African Americans and Latinos directly, for example; it did not consider baseline health, language, and other relevant factors; and it looked only at the demographics next to a source in isolation, rather than also considering the cumulative and aggregate impact of sources on nearby communities.

⁴⁷ Nat'l Academies of Sciences, *Science and Decisions: Advancing Risk Assessment* at 226 (citing O'Neill et al. (2003)), http://www.nap.edu/catalog.php?record_id=12209; see also *id.* at 109-10 & tbl. 4-1 (describing the need to consider increased susceptibility due to prior and concurrent exposures; and to "social and economic factors"); *id.* at 220-21 (describing ways to assess cumulative risk including by consideration of "epidemiologic concepts" and information, and by considering "what the burden of disease is in the context of simultaneous exposure to a number of stressors"); *id.* at 230; Ramya Chari et al., Integrating Susceptibility into Environmental Policy: An Analysis of the National Ambient Air Quality Standard for Lead, 9 INT. J. ENVIRON. RES. PUBLIC HEALTH 2012, 1077-1096, at 1078 & nn.5-10 (citing research); see also Cal. EPA, OEHH, Cumulative Impacts: Building A Scientific Foundation at 6, 10, 12-17 (2010).

than whites, generally, and that African-American men have a 37 percent higher risk of lung cancer than white men.⁴⁸

EPA's overall analysis – showing an overall EJ impact of the PVC source category – combined with the information available on the communities affected by the area sources shows that EPA must grant reconsideration to fully consider the environmental justice impact of the area source standards. In doing so, EPA must consider the available data on the aggregate and cumulative impacts of air pollution for these communities, as well as the baseline health of the affected communities. For example, Mossville is an environmental justice community that has at least a dozen sources, including CertainTeed, that together create a disproportionate burden on public health. EPA also must consider the environmental justice testimony received by affected community residents at the public hearing and the information provided with this reconsideration petition. Beyond the narrow view of demographic data, EPA's rule has a particular impact on a community which EPA had recognized as an environmental justice community – i.e., Mossville – and that alone provides an important reason for EPA to consider and address environmental justice in this rulemaking.

(b) EPA must grant reconsideration due to its failure to rationally explain the decision to set weaker area source standards, despite the EJ impact.

In the EJ analysis that EPA performed for the proposed rule, after finding an existing disproportionate impact based on race and poverty level, EPA concluded that its decision would mitigate that. As stated:

EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations, because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population.⁴⁹

However, that conclusion does not apply at all to the area source rule finalized.⁵⁰ Although, at proposal, the area source rule would have substantially increased the level of

⁴⁸ Am. Lung Ass'n, Too Many Cases, Too Many Deaths: Lung Cancer in African Americans at 1 (2010), <http://www.lungusa.org/assets/documents/publications/lung-disease-data/ala-lung-cancer-in-african.pdf> (explaining higher risk to African Americans even though primary factor for lung cancer, i.e., cigarette smoke exposure, is lower than for whites); see also State of Lung Disease in Diverse Communities: 2010, available at www.LungUSA.org.

⁴⁹ 76 Fed. Reg. at 29,561.

⁵⁰ This conclusion is also flawed because even where a rule does increase the level of protection, EPA should still provide mitigation for disproportionate impacts that remain for minority and low-income communities.

More importantly,

environmental protection for the affected population in Mossville, the final rule does not do so. The final rule provides *no* emission reductions from most emission points for the Mossville area.

In view of its recognition of the need to consider and address environmental justice for the PVC source category as a whole, and the significant information provided on the environmental justice community of Mossville in particular, EPA must set stronger PVC area source standards. Consistent with the statutory authority and requirements that apply to this rulemaking, EPA must consider and explain whether, at minimum, the ability to reduce and mitigate environmental injustice is a factor that weighs in favor of setting PVC area source standards that are at least as strong as the MACT standards.

EPA is reviewing and revising standards for area sources that were initially listed for regulation in order to protect public health. 42 U.S.C. § 7412(c)(3), (k). The requirement to address “public health” necessarily includes a consideration of the people actually affected by a source category and a rule, including any disproportionate health impacts. Due to the impact on public health, including environmental justice concerns, EPA must provide equal protection to the affected community members near area sources. Only an area source standard that is at least as strong as an appropriately designed MACT standard can accomplish that. EPA cannot rationally explain failing to set an equally strong standard for all communities affected by PVC sources. This is particularly true when EPA’s rule means that environmental justice communities already overburdened by other toxic air pollution and poor health must bear a greater burden of toxic air pollution from the PVC source category than other similarly situated communities.

In addition, if EPA again considers the “cost effectiveness” of the area source rule, on reconsideration (as it did in the final rule) then EPA also must consider the cost effectiveness of reducing both the direct health effects of the area sources *and* the disproportionate nature of those impacts. The additional environmental justice value that stronger area source standards would provide puts a thumb on the scale in favor of those standards, rather than the weak rule EPA finalized.

Finally, to set area source standards that will provide necessary protection for public health and satisfy the Act, EPA also must correct the flaws in the major source MACT standards, as further discussed below, and apply those stronger standards to all PVC sources (including area sources).

II. EPA SHOULD RECONSIDER ITS EMISSION STANDARDS FOR MAJOR SOURCE PVC PLANTS.

A. General Background.

EPA estimated that its proposed standards would have reduced emissions of vinyl chloride by 135 tpy (69.9% reduction from baseline), emissions of total HAP by 1,570 tpy (55.3% reduction from baseline), dioxin emissions by .0000000245 tpy (TEQ) (.022 grams per year (TEQ)) (68.4% reduction from baseline), and HCl by 33 tpy (88.5% reduction from baseline). 76 Fed. Reg. at 29,557; Proposed Baseline Emissions Memo at 14. The changes that EPA made to its final rule drastically curtailed these reductions. EPA estimates that its final major source standards would reduce emissions of vinyl chloride by 130 tpy (47.4% from

baseline), emissions of total organic HAP by 217 tpy (16.3% from baseline), dioxin emission by .017 grams per year (TEQ) (37.5% from baseline), and HCl emissions by 21.4 tpy (21.2% from baseline). 77 Fed. Reg. at 22,897; Revised Baseline Emissions Memo at 13.⁵¹ Adding in the projected emission reductions from area sources increases the reductions of vinyl chloride and total HAP slightly, to 145.1 tpy and 241.4 tpy. 77 Fed. Reg. at 22,897. In short, EPA made the rule far less protective, and elected to allow PVC plants to emit far more toxic pollution into American communities.

EPA effectuated this change largely through the revisions, discussed below, on which the public had no opportunity to comment. Significantly, the record shows that EPA met repeatedly with representatives of the PVC industry after the comment period closed. EPA did not disclose its meetings and conversations with industry to people living in communities affected by PVC plants' toxic emissions, nor did it give their representatives an opportunity to weigh in on the changes it was making.

B. EPA's Decision To Weaken The Standards By Creating Several New Subcategories.

1. Background.

In its proposal, EPA stated:

Most of the emissions sources subject to the proposed regulation have the same characteristics, and are addressed consistently, independent of process operations or products produced. We are proposing, however, three subcategories for our limits on the amount of HAP remaining in resins following polymerization and stripping (*i.e.* the stripped resin). These subcategories are based on the type of resin produced, and include: (1) Bulk resin, (2) dispersion resin, and (3) all other resin (*e.g.* suspension and solution resin).

76 Fed. Reg. at 29,532.

In the final rule, however, EPA subcategorized not only stripped resins but process vents. EPA states “[w]e determined that there are significant differences between the emission profiles of process vents that originate solely from a PVCPU and the emission profiles of process vents that originate from a PVCPU and are combined with process vents from other source categories prior to control.” 77 Fed. Reg. at 22,851. In particular, EPA now claims:

there are significant differences in the size and type of process vents that originate from PVCPU and process vents from PVCPU that are combined with process vents from other source categories, such as EDC/VCM or other HON sources, prior to control. The differences in the HAP concentrations in the process vent streams arise from the fundamental differences in the products, unit operations, and the manufacturing process

⁵¹ EPA estimate of baseline emissions increased significantly in the final rule. *Compare* Revised Baseline Emissions Memo at 13 *with* Proposed Baseline Emissions Memo at 14. In addition, EPA provided an estimate for total organic HAP emissions with its final rule rather than an estimate of total HAP, as it provided with its proposed rule.

of the source categories that are typically co-located with and/or that share a control device with a PVC affected source. ... Additionally, the average control device volumetric outflow rate is 2,100 percent greater for process vents from PVCPU that are combined with process vents from other source categories compared to process vents that originate only from PVCPU, a significant difference in size.

Id. at 22,869.

Significantly, EPA also changed the definition of “affected source” in the final rule. 77 Fed. Reg. at 22,850. Specifically, EPA proposed to define affected source as “each individual PVCPU.” 76 Fed. Reg. at 29,532; 29,563 (proposed 40 C.F.R. § 63.11870). In its final rule, EPA defined “affected source” differently to mean “the facility-wide collection of all PVCPU, storage vessels, surge control vessels, heat exchange systems, wastewater, and process wastewater treatment systems that are associated with producing PVC.” 77 Fed. Reg. at 22,850; 22,908 (40 C.F.R. § 63.11870). The agency explained that it wanted to assure that modifying or adding a new PVCPU did not subject plants to the new source standards. *Id.* at 22,864-22,865.

EPA also increased the number of subcategories for stripped resin from three to five, setting separate limits for bulk resin, dispersion resin, suspension resin, suspension blending resin, and copolymer resin. *Id.* at 22,851. The agency admits that sources in the stripped resin categories for which it set less protective standards could reduce their emissions more than they do currently by “adding more steam,” but claims that doing so would “degrade the resin and thus negatively affect the resin quality such that it will not meet customer performance specifications.” *Id.* at 22,870.

Because EPA’s new subcategories and new definition of affected source do not appear in its proposal, it was “impracticable” to object to them during the public comment period within the meaning of Clean Air Act § 307(d)(7)(B). 42 U.S.C. § 7607(d)(7)(B). Further, because EPA’s new subcategories completely change the level of protection provided against emissions of hazardous air pollutants from PVC plants, this objection is of central relevance.

2. Grounds For Objection.

The Clean Air Act allows EPA to “distinguish among classes, types, and sizes of sources within a category or subcategory” in establishing standards. 42 U.S.C. § 7412(d)(1) (emphasis added). It does not allow EPA to distinguish between different classes, types, and sizes of emission points at a “source” when the agency sets standards for the emission points at a given class, type and size of “source.” Even assuming that “process vents that originate from PVCPU” and “process vents from PVCPU that are combined with process vents from other source categories, such as EDC/VCM or other HON sources prior to control” are different in some respect, these process vents are not “sources” under the agency’s own definition of “affected source” in the final rule. 77 Fed. Reg. at 22,869. To ensure that PVC companies could modify or add new PVCPU without having to meet the new source standards, EPA deliberately defined an affected source not as each individual PVCPU, as it had at proposal, but as “the facility-wide collection of all PVCPU, storage vessels, surge control vessels, heat exchange systems, wastewater, and process wastewater treatment systems that are associated with producing PVC.”

77 Fed. Reg. at 22,850, 22,908 (40 C.F.R. § 63.11870). Thus, under EPA's own definition, a process vent is not a "source" and the agency lacks statutory authority to distinguish among process vents regardless of whether it believes they are of a different class type or size.

Further, even if the "source" were an individual PVCPU, the agency's stated rationale for its subcategories would still be unlawful and unreasonable. In that case, the "source" would be the PCVPU, not the process vent to which that PVCPU was routed.

Moreover, despite EPA's attempt to characterize its subcategorization as based on size and type of source, it is in reality an unlawful and unreasonable subcategorization based on emissions and emission controls. EPA does not claim that the PCVPUs differ, but only that some of them share control devices with units that produce other products like EDM VCM. Those other processes are not part of the PVC category, and an individual plant's decisions to use a single control device to control emissions from two different categories is just a voluntary decision by the plant owner about how to control its plant's emissions. EPA effectively recognizes that its subcategories are about emissions and control devices: the only specific reasons it gives for subcategorizing are that the emissions between PVC-only and PVC-combined vents are different and the control devices installed on the latter are larger. 77 Fed. Reg. at 22,869. To subcategorize by emissions or control device is unlawful, both because different emissions do not establish that sources are of a different class, type or size and because it completely defeats and frustrates § 112(d)(3)'s floor requirements.

EPA's decision to add new subcategories of stripped resin also is unlawful and unreasonable. First, as noted above, EPA now defines the affected source to mean "the facility-wide collection of all PVCPU, storage vessels, surge control vessels, heat exchange systems, wastewater, and process wastewater treatment systems that are associated with producing PVC." 77 Fed. Reg. at 22,850; 22,908 (40 C.F.R. § 63.11870). Stripped resin is not the "source" within the meaning of § 112(d)(1) any more than process vents are the source.

Second, EPA offers no support for its statement that applying more steam to some subcategories of resin would "negatively affect the resin quality, 77 Fed. Reg. at 22,870. The agency appears to have simply accepted this claim from industry without making any effort to verify it or determine whether there is a feasible way to apply more steam – and thus remove the maximum amount of vinyl chloride and other hazardous air pollutants – without negatively affecting the resin quality. If any such analysis is in the record, EPA does not identify it.

Third, EPA does not say where the hazardous air pollutants from stripped resins are emitted into the air, but even assuming that all resins cannot be stripped to the same degree there is no reason to believe that sources making resins with higher HAP levels cannot control the emissions from these resins in some other way. For example, EPA could vent emissions from the resins to a control device and reduce HAP levels there.

Fourth, even assuming that there is no way to achieve the same level of HAP emissions for every type of resin, EPA's apparent desire to assure that every type of PVC resin can continue to be manufactured does not trump the Clean Air Act's mandate that all sources in a category or subcategory must meet the same standards and the agency may distinguish only

among different classes, types, and sizes of source in setting standards. As noted above, stripped resin is not the “source” at all and, even if it were, EPA does not identify any differences between class, type or size of stripped resin emission points. The only specific difference EPA mentions is their HAP content. 77 Fed. Reg. 22,850; 22,908 (40 C.F.R. § 63.11870).

Subcategorizing to ensure that plants can continue to manufacture all the products they wish to manufacture – even if they cannot meet emission standards when manufacturing a given product – is an unlawful form of subcategorizing by emissions or cost. It exceeds EPA’s authority to distinguish among different classes, types and sizes of sources, and frustrates the purpose of the standard setting requirements in § 112(d)(2)-(3). Notably, the D.C. Circuit already has made clear that, to be “achievable,” a standard need not be achievable by every source in a category but only to be achievable by the industry as a whole. *A fortiori*, EPA may not subcategorize just to ensure that its standards are achievable for every product that an industry may choose to make, even the very dirtiest.

C. EPA’s Revised Floors.

1. Background.

EPA significantly changed the statutory minimum stringencies (“floors”) for its standards. As noted above, EPA created new subcategories. In addition, EPA accepted new data from industry and used a new approach to base floors on this data. Further, EPA altered its approach to handling non-detect data. Because EPA’s new subcategories, new data, new floor approach, new approach to non-detect data, and new floors do not appear in its proposal, it was “impracticable” to object to them during the public comment period within the meaning of Clean Air Act § 307(d)(7)(B). 42 U.S.C. § 7607(d)(7)(B). Further, because these new aspects of EPA’s rule completely change the level of protection provided against emissions of hazardous air pollutants from PVC plants, this objection is of central relevance.

2. Grounds For Objection.

a. EPA’s Floors For Process Vents Are Unlawful And Arbitrary.

In setting dioxins standards for its new subcategory of PVC-only process vents, EPA excluded two plants that, according to EPA, are likely to have emission levels of zero. EPA-HQ-OAR-2002-0037-0193 (“Revised MACT Floor Memo”) at 5. The agency states that because these plants used vent gas absorption (VGA) technology, which is a “non-combustion control technology,” dioxins “were not expected to be present in the process vent exhaust.” *Id.* EPA claims that, despite receiving a § 114 letter, these plants did not report dioxin emissions. *Id.* EPA’s exclusion of the two plants that were likely to have the best dioxin emission levels from its floor analysis was unlawful and unreasonable. Although these plants apparently did not respond to EPA’s § 114 request for information, the agency could have followed up and compelled them to do so; compelling plants to provide emissions information is precisely the function and purpose of Clean Air Act § 114. Further, EPA has an obligation to set floors reflecting the best performing five plants for which it had or reasonably could obtain emissions information. 42 U.S.C. § 7412(d)(3). The two plants EPA excluded from its floor analysis were plainly the best performers with respect to dioxin: they likely had emission levels of zero, whereas all the remaining plants in the floor analysis had emission levels greater than zero. *See id.* at 10. If EPA has information indicating these plants’ emissions are zero, it should include

them in its floor analysis. Although EPA indicates that these two plants did not report dioxin emissions information, meaning emission test results, the agency has previously taken the position that information about sources' emissions other than test results are emissions information that it can use to set floors, and it provides no basis for refusing to use the information it has about these two plants. *See id.* at 2. In any event, the agency does not claim that it could not reasonably have obtained dioxin emissions test results for these plants. Nor would any such claim be credible given that § 114 expressly authorizes EPA to obtain such information.

In setting standards for HCl, total hydrocarbons (THC) and total HAPs for its new subcategory of PVC-combined process vents, EPA did not base floors on the best performing five sources in the subcategory, which appears to include eight sources. *Id.* at 6-7. For HCl, EPA based floors on just two sources and for the THC and total HAPs, the agency based floors on just three sources. *Id.* at 7. Clean Air Act § 112(d)(3)(B) unambiguously requires floors to reflect the average emission level achieved by the top five sources for which EPA had or could reasonably obtain emissions information. 42 U.S.C. § 7412(d)(3)(B).

With respect to HCl, EPA claims that the OxyVinyls Deer Park and Dow Midland facilities did not report HCl emissions. *Id.* at 5. EPA does not indicate clearly why it failed to include HCl emissions from another four of the 8 PVC-combined process vents. Because § 112(d)(3)(B) requires floors to reflect the average emission level achieved by the best performing five sources for which EPA has or could reasonably obtain emissions information, the agency's decision to base floors on just two plants is unlawful and arbitrary. Further, EPA does not and cannot claim that it knows that the two plants for which it had emission test results were even among the best performing five sources in the subcategory. EPA does not claim that it could not reasonably have obtained HCl emissions information for all eight sources in the subcategory – or, at a minimum, at least five sources – nor would any such claim be credible given that § 114 expressly authorizes EPA to obtain such information. Further, as noted above, EPA has stated that the Deer Park plant has zero HCl emissions, apparently because it does not rely on a thermal oxidizer to control other pollutants. Proposed Baseline Emissions Memo at 13. EPA does not say why it did not obtain emissions information from this plant, which would be the best performer with respect to HCl if its emissions are zero. Although EPA indicates that the Deer Park plant did not report HCl emission test results, the agency has previously taken the position that information about sources' emissions other than test results are emissions information that it can use to set floors, and it provides no basis for refusing to use the information it has about this plant.

With respect to THC and total HAP, EPA excluded four plants that did not submit test results for emissions of these pollutants during normal operations – i.e., from operations when they were emitting pollution from both their PVCPU and the other process units that were routed to the same process vents. Revised MACT Floor Memo at 6-7. In addition, EPA excluded a fifth plant (Westlake – Calvert City) on the ground that it “typically incinerates process gas from a co-located facility.” *Id.* at 6-7 & 7 n.3. Because § 112(d)(3)(B) requires floors to reflect the average emission level achieved by the best performing five sources for which EPA has or could reasonably obtain emissions information, the agency's decision to base floors on just three plants is unlawful and arbitrary. Further, EPA does not and cannot claim that it knows that the three

plants for which it had emission test results were even among the best performing five sources in the subcategory. EPA does not claim that it could not reasonably have obtained THC or total HAP emissions information for all eight sources in the subcategory – or, at a minimum, at least five sources – nor would any such claim be credible given that § 114 expressly authorizes EPA to obtain such information.

Having selected new groups of best performing process vents in each of its new subcategories, EPA generally used the 99th percent upper prediction limit (UPL) to set the new standards.

EPA’s assumption that sources’ emission levels vary to the full extent of the 99th percent UPL is wrong and unsupported by the record. As the agency is well aware, sources among those EPA chose as the top performers use control technology or other methods to control their emissions. Because such measures limit emissions, the emission levels at such sources do not vary randomly. Further, as EPA is also well aware, source operators’ training and care in operating their sources and control equipment also limit variability in emissions. Moreover, because sources test their emissions under operating conditions designed to reflect the worst possible emission levels, their unadjusted test results already reflect unrealistically high emissions and there is no basis to assume that these sources’ emissions will get even worse – far less significantly worse – during further tests. For each of these reasons, sources’ actual emission levels are in no way reflected by the 99th percent UPL merely because such a level might be statistically possible. By using the 99th percent UPL, EPA adopts an approach to estimating emissions that ignores factors that affect emissions. Significantly, EPA itself has acknowledged in other rules where it has used the 99th percent UPL “that the variability of emissions is not solely statistical, but also represents some operational variability that may occur between different tests at the same units (intra-unit variability) as well as different tests at different units (inter-unit variability) in the floor.” 76 Fed. Reg. 15,608, 15,630/1-2 (March 21, 2011). Nowhere, however, has EPA explained why it nonetheless pretends that sources’ emissions do vary to the full 99th percent UPL.

Further the 99th percent UPL of the emission levels achieved by the alleged best performing sources is not the “average” emission level achieved by those sources. Because Clean Air Act § 112(d)(3)(B) unambiguously requires EPA to set floors reflecting the “average” emission level achieved by the best sources, setting floors that instead reflect a UPL for those sources is unlawful. By claiming that it can use the UPL for the best performers, EPA misreads its authority to consider variability under the Clean Air Act and relevant caselaw. Although EPA may consider variability in estimating an individual source’s actual performance over time, nothing in the Act or the caselaw even suggests that the agency may account for differences in performance between sources except as § 112(d)(3)(B) provides, by averaging the emission levels achieved by the sources in the top five. Indeed, EPA errs by viewing the different emission levels achieved by different sources as “variability” at all. The different emission levels achieved by different sources are just differences in performance and provide no basis for applying statistical methods.

Compounding the UPL-related flaws in EPA’s new floors is the agency’s use of representative detection levels (RDLs) in response to the fact that some test results were “non-

detects” where the test indicated zero emissions. EPA proposed to account for non-detects by setting the floors at three times a “method detection level” (MDL) whenever the 99th percent UPL was less than three times the MDL. As with the MDL, EPA stated that wherever the 99th percent UPL was less than or equal to three times the RDL, “the value equal to 3 times the RDL would be substituted for the calculated floor or emissions limit.” MACT Floor Memo at 15. Because a number equal to three times the RDL does not reflect – or even purport to reflect – the average emission level achieved by the best performing five sources, EPA’s decision to set floors at this level is flatly unlawful.

EPA’s stated basis for that decision is that whereas “measurement imprecision for an emission value occurring at or near the method detection level is about 40 to 50 percent,” it “decreases to a consistent level of 10 to 20 percent for values measured at a level about 3 times the method detection level” *Id.* at 14. EPA claims that the 99th percent UPL does not account entirely for measurement variability if it is below three times the RDL. *Id.* at 15. The agency does not explain why that is so for any specific floor far less why it would be so for every floor that EPA sets. Further, EPA does not claim – nor does the record show – that the actual emissions of sources reporting emissions below the detection limit is, in fact, triple the RDL. Thus floors set at three times the RDL do not reflect the average emissions achieved by the best performing five sources, as § 112(d)(3)(B) requires for existing sources, nor does it reflect the emission level achieved by the single best performing source, as § 112(d)(3)’s new source language requires. Nor does EPA’s rationale for substituting three times the RDL make sense on its own terms. Even if, as the Agency suggests, a source reporting at or near a detection limit is imprecise by 40 to 50 percent, at most that source’s actual emissions would be 50 percent higher than the reported detection limit. The Agency has, instead, substituted a number that is triple the detection limit. Likewise, where the Act requires existing source standards to be at least as stringent as the average emissions achieved in practice by the best performing five sources, 42 U.S.C. § 7412(d)(3)(B), the Agency has substituted a figure that does not reflect the actual emissions of *any* source within the category.

EPA’s new source floor approach for both of the new source categories was based on flawed reasons similar to those given above with respect to its existing source floors. EPA did not base floors on the best performers; as shown above, it excluded sources that appear to have achieved superior emission levels (*e.g.* zero emissions, for dioxins). Further, EPA provided no basis for assuming that the sources on which it based floors were actually the best performers. As with its existing source floors, EPA used the 99th percent UPL to estimate the relevant best sources’ emissions, and that approach was unlawful and arbitrary for the reasons given above.

The result of EPA’s floor analysis are floors that fall so far short of reflecting the actual emission level achieved by the relevant best sources that they require few, if any, sources to reduce their emissions at all. For both PVC-only process vents and PVC-combined process vents, EPA indicates that no source will need to reduce its vinyl chloride and dioxin emissions at all – *i.e.*, that the floors, which are required to reflect the average emission level achieved by the top performing five sources, are already being met by every source in the category. Revised Cost and Emission Reductions Memo at 6-7. Such results confirm that EPA’s floor approach does not satisfy the Clean Air Act’s floor requirements. Unless all the sources in a category have

the same performance, the average emission level achieved by the top performing five sources is not also being achieved by every other source in the category.

b. EPA's Floors For Stripped Resins Are Unlawful And Arbitrary.

In setting floors for its new stripped resin subcategories, EPA had far more vinyl chloride data than it had for process vents. After the comment period closed, long after EPA sent out its information request, and less than one year before EPA issued its final rule, the Vinyl Institute submitted four years worth of “daily VC concentration data from year 2007 to 2010.” Revised MACT Floor Memo at 44. These data were not available during the period for public comment and, to accommodate them, EPA adopted a new floor approach that was not available for comment during public comment period. Specifically, EPA ranked facilities by their average four-year vinyl chloride level as reported in the new data. *Id.* EPA then set existing source floors at the 99.9 percent worst vinyl chloride level for any source in the top five and, for new sources, at the level of the 99.9th worst vinyl chloride level for the single best performing source. *Id.*

Clean Air Act § 112(d)(3)(B) unambiguously requires existing source floors to reflect the “average” emission level achieved by the best performing five sources. EPA contravened that requirement by instead setting floors at the 99.9 percent worst emission level achieved by any source in the top five. EPA does not claim that the 99.9th percentile is the “average,” nor does it provide any record basis to so believe. Further, EPA does not provide any reason to believe that it needs to look to the 99.9 percent worst emission level rather than the average when it has four years of daily concentration data. Accordingly, EPA’s existing source vinyl chloride floors are both flatly unlawful and arbitrary.

For non-vinyl chloride hazardous air pollutants, EPA based the floors for stripped resins on the 99th percent UPL or three times the RDL, whichever was worse, as it did for process vents. That approach was unlawful and arbitrary for the reasons given above with respect to the process vent standards. EPA’s assumption that sources’ emission levels vary to the full extent of the 99th percent UPL is wrong and unsupported by the record. As the agency is well aware, sources among those EPA chose as the top performers use control technology or other methods to control their emissions. Because such measures limit emissions, the emission levels at such sources do not vary randomly. Further, as EPA is also well aware, source operators’ training and care in operating their sources and control equipment also limit variability in emissions. Moreover, because sources test their emissions under operating conditions designed to reflect the worst possible emission levels, their unadjusted test results already reflect unrealistically high emissions and there is no basis to assume that these sources’ emissions will get even worse – far less significantly worse – during further tests. For each of these reasons, sources’ actual emission levels are in no way reflected by the 99th percent UPL merely because such a level might be statistically possible. By using the 99th percent UPL, EPA adopts an approach to estimating emissions that ignores factors that affect emissions. Significantly, EPA itself has acknowledged in other rules where it has used the 99th percent UPL “that the variability of emissions is not solely statistical, but also represents some operational variability that may occur between different tests at the same units (intra-unit variability) as well as different tests at different units (inter-unit variability) in the floor.” 76 Fed. Reg. at 15,630/1-2. Nowhere,

however, has EPA explained why it nonetheless pretends that sources' emissions do vary to the full 99th percent UPL.

Further the 99th percent UPL of the emission levels achieved by the alleged best performing sources is not the "average" emission level achieved by those sources. Because Clean Air Act § 112(d)(3)(B) unambiguously requires EPA to set floors reflecting the "average" emission level achieved by the best sources, setting floors that instead reflect a UPL for those sources is unlawful. By claiming that it can use the UPL for the best performers, EPA misreads its authority to consider variability under the Clean Air Act and relevant caselaw. Although EPA may consider variability in estimating an individual source's actual performance over time, nothing in the Act or the caselaw even suggests that the agency may account for differences in performance between sources except as § 112(d)(3)(B) provides, by averaging the emission levels achieved by the sources in the top five. Indeed, EPA errs by viewing the different emission levels achieved by different sources as "variability" at all. The different emission levels achieved by different sources are just differences in performance and provide no basis for applying statistical methods.

Further, because a number equal to three times the RDL does not reflect – or even purport to reflect – the average emission level achieved by the best performing five sources, EPA's decision to set floors at this level is flatly unlawful.

EPA's stated basis for setting floors at three times the RDL is that whereas "measurement imprecision for an emission value occurring at or near the method detection level is about 40 to 50 percent," it "decreases to a consistent level of 10 to 20 percent for values measured at a level about 3 times the method detection level" Revised MACT Floor Memo at 14. EPA claims that the 99th percent UPL does not account entirely for measurement variability if it is below three times the RDL. *Id.* at 15. The agency does not explain why that is so for any specific floor, far less why it would be so for every floor that EPA sets. Further, EPA does not claim – nor does the record show – that the actual emissions of sources reporting emissions below the detection limit is, in fact, triple the RDL. Thus floors set at three times the RDL do not reflect the average emissions achieved by the best performing five sources, as § 112(d)(3)(B) requires for existing sources, nor does it reflect the emission level achieved by the single best performing source, as § 112(d)(3)'s new source language requires. Nor does EPA's rationale for substituting three times the RDL make sense on its own terms. Even if, as the Agency suggests, a source reporting at or near a detection limit is imprecise by 40 to 50 percent, at most that source's actual emissions would be 50 percent higher than the reported detection limit. The Agency has, instead, substituted a number that is triple the detection limit. Likewise, where the Act requires existing source standards to be at least as stringent as the average emissions achieved in practice by the best performing five sources, 42 U.S.C. § 7412(d)(3)(B), the Agency has substituted a figure that does not reflect the actual emissions of *any* source within the category.

c. EPA's Floors For Wastewater Are Unlawful And Arbitrary.

EPA set only two standards for PVC plants' wastewater emissions, one for vinyl chloride and one for non-vinyl chloride HAPs. Revised MACT Floor Memo at 38. EPA states that it received "approximately one year of vinyl chloride concentration data at the outlet of the

wastewater strippers for nine PVC production facilities,” apparently after proposal. *Id.* EPA then set floors that were based on the top five sources based on these new data.

EPA provides no reason to believe that it had data for the best performing wastewater sources. Rather, it states that it simply used the data that industry voluntarily provided for nine out of the eighteen plants in the category. Thus it is entirely possible that some or all of the best performing five sources were not represented in the floor analysis. Likewise, it is entirely possible that the single best performing source was not represented in EPA’s new source floor analysis. EPA does not even claim that the sources on which it based floors are the best performing sources in the category. Further, any such claim would be arbitrary given the absence of any record evidence showing that the nine sources EPA considered were better performing than the nine other sources it did not consider and the absence of any explanation from EPA as to why it believed that the nine sources it considered were the best performers. Significantly, EPA has an obligation to set existing source floors reflecting the best performing five plants for which it had or reasonably could obtain emissions information. 42 U.S.C. § 7412(3)(B). EPA does not claim that it could not reasonably have obtained emissions information for any test results for any of the other nine plants. Nor would any such claim be credible given that § 114 expressly authorizes EPA to obtain such information.

Even with respect to the nine sources it considered, EPA’s floor analysis was unlawful and arbitrary. Having selected new groups of best performing sources, EPA used the 99th percent upper prediction limit (UPL) to set the new standards.

EPA’s assumption that sources’ emission levels vary to the full extent of the 99th percent UPL is wrong and unsupported by the record. As the agency is well aware, sources among those EPA chose as the top performers use control technology or other methods to control their emissions. Because such measures limit emissions, the emission levels at such sources do not vary randomly. Further, as EPA is also well aware, source operators’ training and care in operating their sources and control equipment also limit variability in emissions. Moreover, because sources test their emissions under operating conditions designed to reflect the worst possible emission levels, their unadjusted test results already reflect unrealistically high emissions and there is no basis to assume that these sources’ emissions will get even worse – far less significantly worse – during further tests. For each of these reasons, sources’ actual emission levels are in no way reflected by the 99th percent UPL merely because such a level might be statistically possible. By using the 99th percent UPL, EPA adopts an approach to estimating emissions that ignores factors that affect emissions. Significantly, EPA itself has acknowledged in other rules where it has used the 99th percent UPL “that the variability of emissions is not solely statistical, but also represents some operational variability that may occur between different tests at the same units (intra-unit variability) as well as different tests at different units (inter-unit variability) in the floor.” 76 Fed. Reg. at 15,608. Nowhere, however, has EPA explained why it nonetheless pretends that sources’ emissions do vary to the full 99th percent UPL.

Further the 99th percent UPL of the emission levels achieved by the alleged best performing sources is not the “average” emission level achieved by those sources. Because Clean Air Act § 112(d)(3)(B) unambiguously requires EPA to set floors reflecting the “average”

emission level achieved by the best sources, setting floors that instead reflect a UPL for those sources is unlawful. By claiming that it can use the UPL for the best performers, EPA misreads its authority to consider variability under the Clean Air Act and relevant caselaw. Although EPA may consider variability in estimating an individual source's actual performance over time, nothing in the Act or the caselaw even suggests that the agency may account for differences in performance between sources except as § 112(d)(3)(B) provides, by averaging the emission levels achieved by the sources in the top five. Indeed, EPA errs by viewing the different emission levels achieved by different sources as “variability” at all. The different emission levels achieved by different sources are just differences in performance and provide no basis for applying statistical methods.

D. EPA's Beyond The Floor Analysis.

1. Background.

EPA significantly changed the stringencies of its final standards. As noted above, EPA created new subcategories. In addition, EPA accepted new data from industry and, in some instances, used a new approach to evaluate beyond the floor standards. Because EPA's new subcategories, new data, and new standards do not appear in its proposal, it was “impracticable” to object to them during the public comment period within the meaning of Clean Air Act § 307(d)(7)(B). 42 U.S.C. § 7607(d)(7)(B). Further, because these new aspects of EPA's rule completely change the level of protection provided against emissions of hazardous air pollutants from PVC plants, this objection is of central relevance.

2. Grounds For Objection.

a. EPA's Final Standards For Its New Subcategories Of Process Vents Are Unlawful And Arbitrary.

Clean Air Act § 112(d)(2) unambiguously requires EPA's final standards that reflect the “maximum” degree of reduction that can be achieved through the full range of potential control measures, including pollution prevention measures, process changes, and the use of pollution control technology. 42 U.S.C. § 7412(d)(2). EPA's new standards for process vents do not even purport to satisfy this requirement. Rather than determining the maximum degree of reduction that is achievable through the use of all potential control measures – which, as EPA itself has acknowledged, include activated carbon injection, fabric filters, and wet scrubbers – the agency considered a completely different question, which is whether it would be “cost-effective” for existing sources to meet the new source floor. Revised Beyond The Floor Memo at 1-2. Specifically, EPA simply declared that refrigerated condensers are the most “effective” control for process vents and then determined whether it would be cost-effective for existing sources to install the larger condensers that would be necessary to meet the new source floors. *Id.* at 5.

EPA's limitation of its beyond the floor analysis to the reductions that can be achieved through the use of a refrigerated condenser contravenes § 112(d)(2)'s plain mandate to set floors that reflect the “maximum” degree of reduction that is “achievable” through the full range of potential reduction measures. EPA does not claim that further reductions beyond the floor are not achievable through the use of technologies other than refrigerated condensers, nor could it plausibly so claim. Even assuming that refrigerated condensers are the most effective single

technology, considering only refrigerated condensers would not satisfy the Act given that the use of other control measures in addition would yield further reductions. Further, assuming *arguendo* that the use of better refrigerated condensers is not achievable for cost or other reasons, reductions beyond the floor level may be achievable through other means. In particular, EPA's failure to consider the degree of reduction in emissions that could be achieved through the use of activated carbon injection, fabric filters, and wet scrubbers is unlawful and arbitrary.

Even if it were not unlawful and arbitrary to consider only the degree of reduction that could be achieved through the use of larger refrigerated condensers, EPA's stated reason for rejecting this measure was simply that "[b]ased on the resulting analysis of the cost-effectiveness, we determined it is not appropriate to go beyond-the-floor for either subcategory of process vents at existing sources." 77 Fed. Reg. at 22,896. Under the Clean Air Act, the question is not whether EPA believes that a given standard is "appropriate" in terms of "cost-effectiveness" but whether EPA's standards reflect the maximum achievable degree of reduction considering cost. EPA's preferred analysis is subjective, asking what EPA thinks is "appropriate." The statutorily required analysis is objective asking whether a degree of reduction is achievable considering cost for the industry as a whole. By substituting its own preferred analysis for the statutorily required analysis, EPA contravenes the Clean Air Act, and replaces a statutory mandate for the maximum achievable degree of reduction with a virtually meaningless suggestion that EPA set whatever standards the agency views as cost-effective.

Had EPA conducted the beyond the floor analysis that the statute requires it should have found that larger refrigerated condensers are achievable considering cost. As EPA itself noted, the companies that operate PVC plants all have billions in dollars of revenue every year. Economic Impacts Analysis Memo at 21. EPA does not claim, and could not plausibly claim, that this industry cannot afford to install improved refrigerated condensers. Nor does (or could it) claim that this industry cannot afford to install other control measures that would reduce its toxic emissions, including activated carbon injection, fabric filters, and wet scrubbers.

Moreover, EPA's cost-effectiveness analysis, which looks only at the cost per ton of pollution removed is essentially meaningless. All HAPs are not the same, and the value of removing different HAPs cannot be expressed in dollars per ton. Dioxins for example, are toxic in the billionths of a gram. To evaluate the effectiveness of removing dioxins in terms of cost per ton is absurd. Vinyl chloride, while emitted in quantities greater than dioxins, is a known human carcinogen that already heavily impacts the environment of some communities. Evaluating the value of removing vinyl chloride from these communities and reducing the residents' cancer rates cannot be measured in dollars per ton. As explained above, EPA should not base its final standards on cost-effectiveness at all; the agency's job is simply to determine the "maximum" degree of reduction that can be achieved considering cost. But if EPA wishes to consider cost-effectiveness in any meaningful sense, it cannot rely on dollars per ton figures, which say virtually nothing about the true effectiveness of reducing emissions of highly toxic pollutants like dioxins and vinyl chloride.

b. EPA's Final Standards For Its New Subcategories Of Stripped Resins Are Unlawful And Arbitrary.

In its beyond the floor analysis to set the standards for its new subcategories of stripped resins, EPA rejected two different measures that would undisputedly yield reductions in hazardous air pollutants beyond those provided by the floors: additional stripping and routing vents from process components downstream of the resin stripper to a thermal oxidizer.

EPA's refusal to set final standards that reflect the additional degree of reduction that could be achieved through the use of additional stripping is unlawful and arbitrary for the same reason that EPA's decision to create separate subcategories to allow some plants to emit high levels of toxic pollution from their stripped resins is unlawful and arbitrary. Even assuming that there is no way to achieve the same level of HAP emissions for every type of resin, EPA's apparent desire to assure that every type of PVC resin can continue to be manufactured does not trump the Clean Air Act's mandate that all sources in a category or subcategory must meet the same standards. Thus, even if EPA's new subcategories were lawful and non-arbitrary – which they are not – the agency would still have an obligation to assure that the standards for these subcategories reflect the “maximum” achievable degree of reduction. The D.C. Circuit already has made clear that, to be “achievable” a standard need not be achievable by every source in a category but only to be achievable by the industry as a whole. *A fortiori*, EPA may not reject otherwise feasible reduction measures just to ensure that its standards are achievable for every product that an industry may choose to make, even the very dirtiest.

EPA states that routing additional emissions to a thermal oxidizer would yield additional vinyl chloride reductions of 47, 20, 1.6 and 16 tons per year for suspension, dispersion, suspension blending, and copolymer resins respectively. Revised Beyond The Floor Memo at 8. It also would yield additional non-vinyl chloride HAP reductions of 674, 19, 1.4 and 16 tons per year from these new subcategories respectively. EPA did not analyze the reductions that would be achieved from the bulk resins plant in Mossville because of its new decision to set GACT standards that were not the “same” as MACT standards.

EPA's reliance on cost effectiveness arguments in its beyond the floor analysis for its standards for the newly minted stripped resin subcategories is unlawful and arbitrary for the same reasons as the agency's reliance on cost effectiveness arguments to reject beyond the floor standards for process vents. Under the Clean Air Act, the question is not whether EPA believes that a given standard is appropriate in terms of cost-effectiveness but whether EPA's standards reflect the maximum achievable degree of reduction considering cost. EPA's preferred analysis is subjective, asking what EPA thinks is “appropriate.” The statutorily required analysis is objective asking whether a degree of reduction is achievable considering cost for the industry as a whole. By substituting its own preferred analysis for the statutorily required analysis, EPA contravenes the Clean Air Act, and replaces a statutory mandate for the maximum achievable degree of reduction with a virtually meaningless suggestion that EPA set whatever standards the agency views as cost-effective.

Had EPA conducted the beyond the floor analysis that the statute requires it should have found that routing vent streams from process components downstream of the stripper to a thermal oxidizer is achievable. There is no dispute that it is technically feasible, and EPA has stated that the total annual cost would be \$128 million for all eleven suspension plants, \$2.5 million (for two dispersion plants), \$388,000 (for one suspension blending plant), and \$1 million

(for one copolymer resin plant). Revised Beyond The Floor Memo at 8. EPA does not even claim that the use of this reduction measure would not be achievable for any PVC plant based on cost, further underscoring that its beyond the floor analysis does not satisfy § 112(d)(2) which mandates that maximum achievable degree of reduction considering cost. Nor would any such claim be credible. As EPA itself noted, the companies that operate PVC plants all have billions in dollars of revenue every year. Economic Impacts Analysis Memo at 21. EPA does not claim, and could not plausibly claim, that this industry cannot afford to route the vent streams from process components downstream of the stripper to a thermal oxidizer.

Moreover, EPA's cost-effectiveness analysis, which looks only at the cost per ton of pollution removed is essentially meaningless. All HAPs are not the same, and the value of removing different HAPs cannot be expressed in dollars per ton. Dioxins for example, are toxic in the billionths of a gram. To evaluate the effectiveness of removing dioxins in terms of cost per ton is absurd. Vinyl chloride, while emitted in quantities greater than dioxins, is a known human carcinogen that already heavily impacts the environment of some communities. Evaluating the value of removing vinyl chloride from these communities and reducing the residents' cancer rates cannot be measured in dollars per ton. As explained above, EPA should not base its final standards on cost-effectiveness at all; the agency's job is simply to determine the "maximum" degree of reduction that can be achieved considering cost. But if EPA wishes to consider cost-effectiveness in any meaningful sense, it cannot rely on dollars per ton figures, which say virtually nothing about the true effectiveness of reducing emissions of highly toxic pollutants like dioxins and vinyl chloride, in terms of public health – which is a key factor missing from EPA's analysis.

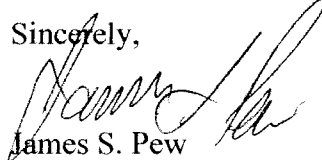
CONCLUSION

For the foregoing reasons, petitioners urge EPA to reconsider the final PVC rule and issue a new, stronger final rule for both area and major sources. Petitioners also request meetings with EPA's Assistant Administrator for Air and with EPA's Associate Assistant Administrator for Environmental Justice to occur as soon as possible regarding this rule.

Please contact James Pew at (202) 745-5214 or jpew@earthjustice.org for more information and to arrange this meeting.

Thank you for your consideration of these important matters.

Sincerely,


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