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Via Email: Efficiency@idem.IN.gov
Indiana Department of Environmental Management

Re: Evaluation of Existing Regulations Pursuant to Executive Order 25-38

The Conservation Law Center, the Environmental Law & Policy Center, the Hoosier Environmental Council, Save the Dunes Conservation Fund, Gary Advocates for Responsible Development, and Just Transition Northwest Indiana (collectively "Commenters"), respectfully submit these comments for IDEM's consideration in complying with Governor Braun's Executive Order 25-38 ("EO 25-38"), which aims to eliminate supposedly unnecessary regulation of Indiana businesses and industries by, among other things, prohibiting state environmental regulations that are "more stringent than" federal law. To achieve this goal, EO 25-38 directs responsible state agencies, including IDEM, to review their regulations and identify those that exceed federal requirements, impose "undue burden" on business and industry, "significantly raise the cost of living for Hoosiers, are not supported by current law and the best available science, or do not benefit Indiana's environment."

In response, IDEM has requested public comment on "specific suggestions regarding repeal, replacement, or modification of existing environmental rules and regulations" to be informed by the criteria of EO 25-38 and the Governor's "other relevant executive orders." *See* IDEM Notice at 2. Commenters appreciate IDEM's call for public feedback on this specific question, which we address below. However, we also urge IDEM, as the agency statutorily charged with protecting Hoosiers' rights to live in a healthy environment when promulgating rules and standards,[1] to advise and inform Governor Braun of the following related issues and concerns.

I. EO 25-38 is Based on a False Premise

The Governor's rationale for EO 25-38 is that environmental regulation harms industry, kills jobs, and impedes economic growth. This claim is not new, has been debunked by decades of economic research, and ignores the last 50 years of the nation's success in growing the economy while reducing pollution at the same time.[2]

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[1] Ind. Code § 13-14-8-4(7) (directing IDEM to consider the "right of all persons to an environment sufficiently uncontaminated as not to be injurious to human, plant, animal, or aquatic life or the reasonable enjoyment of life and property" when establishing new rules or standards).

[2] U.S. EPA, *The Clean Air Act and the Economy* at https://www.epa.gov/clean-air-act-overview/clean-air-act-and-economy (noting that "[b]etween 1970 and 2019, aggregate emissions of common air pollutants dropped 77 percent, while the U.S. gross domestic product grew 285 percent," and "[t]otal private sector jobs increased by 223 percent").

Indeed, in the 1970s the U.S. auto industry similarly railed against passage of the Clean Air Act amendments predicting the new law would cause a "complete collapse of the industry within five years" and "permanently cripple the U.S. economy."[3] Yet today, with the CAA's fuel and vehicle emissions standards in place for nearly five decades, the automotive industry and U.S. economy are still alive and well. The regulations spurred technological advancements in vehicle and engine design that led to more jobs. New vehicles today are 99% cleaner for most tailpipe pollutants compared to the 1960s. Gasoline no longer contains brain-damaging lead. And air quality in U.S. cities has significantly improved, even with increased population, more cars, and more miles driven.[4]

Similarly, in the 1980s, the Reagan administration suspended and chose not to enforce environmental regulations and standards based on the same industry-perpetuated view that protecting the environment hurts economic prosperity. Noting the "surprisingly little rigorous research to substantiate" that view, MIT conducted a comprehensive study confirming that the Reagan administration's claim had "no empirical foundation" whatsoever. Of particular relevance to EO 25-38, the MIT study compared the economic performances of states with weak environmental policies to those with stronger policies and found that the "environmentally strong states *outperformed* the environmentally weak states by substantial amounts."[5]

Since then, study after study has confirmed that environmental regulation does not kill jobs; it creates them.[6] Somebody designs, makes, sells, installs, and operates the pollution control technologies we put on power plants, oil refineries, steel mills, and motor vehicles. Just as someone makes money off of solar cells and windmills. And environmental amenities are worth the money. A clean lake or riverfront attracts housing and business development. A home across the street from a park will bring a higher price than the same home a block away. There is no question that protecting the environment is good for public health, which is also good for the economy, because sick people generally cannot work well, if at all.[7]

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[3] S. Meyer, *Environmentalism and Economic Prosperity: Testing the Environmental Impact Hypothesis, Project on Environmental Politics and Policy*, Mass. Inst. of Tech., 1-2 (Oct. 5, 1992) (quoting Lee Iacocca, then vice president of Ford Motor Company), https://vnrc.org/wp-content/uploads/2019/08/KEEPEnvironmentalism-and-Economic-Prosperity.pdf.

[4] U.S. EPA, *Accomplishments and Successes of Reducing Air Pollution from Transportation in the United States,* https://www.epa.gov/transportation-air-pollution-and-climate-change/accomplishments-and-successes-reducing-air#:~:text=and%20the%20environment.-,Historic%20Success%20of%20the%20Clean%20Air%20Act,sparked%20technology%20innovation%20from%20industry.

[5] Meyer, *supra* note 3 at 2, 8-11, 21.

[6] Gray, et al., *Environmental Regulation and Labor Demand: What Does the Evidence Tell Us,* Annual Review of Resource Economics 15:177-197 (Oct. 2023) https://doi.org/10.1146/annurev-resource-101422-115834; BenDor, et al., *Defining and Evaluating the Ecological Restoration Economy,* Restoration Ecology 23: 209-219 (2015) available at https://doi.org/10.1111/rec.12206.

[7] Henneman, et al., *Mortality Risk From United States Coal Electricity Generation,* Science 382: 941-946 (Nov. 23, 2023) (attributing nearly half a million U.S. deaths between 1999 - 2020 to air pollution from coal-fired power plants), https://www.science.org/doi/10.1126/science.adf4915.

After 50 years of experience with environmental regulation, there is simply no evidence to support Governor Braun's rationale for EO 25-38. Instead, we know that environmental regulations have saved the U.S. economy far more money than it costs industries to implement pollution controls by a factor of around six to one.[8] Thus, with strong environmental protections in place, Indiana can build its economy and create jobs while conserving natural resources and curbing pollution to protect Hoosier health and quality of life. We call on IDEM to advise the Governor of this fact.

II. Indiana Has Serious Environmental Challenges that Require State Agencies to Go Beyond Federal Minimum Standards, Especially in the Face of Rollbacks to Those Standards

In the 1970s, U.S. cities were choked with toxic smog, and many rivers were so polluted they caught fire. Against that backdrop and mounting public outcry, Congress created the U.S. EPA and the national system of environmental regulation we have today.[9] To stem the race to the bottom then happening in the states, Congress passed several pieces of landmark legislation including, among others, the Clean Air Act ("CAA") and Clean Water Act ("CWA") that required EPA to set minimum national standards for how much pollution industries could emit into the air, land and water. At the same time, Congress sought to promote cooperative federalism by giving states the authority to go further in administering federal programs by tailoring them to address local conditions and challenges.[10] Since then, most states, including Indiana, have accepted the responsibility. And by all accounts, this cooperative framework has been a success. Rivers no longer catch fire, most Americans can depend on their taps for clean water, and most people can walk outside and breathe fresh air.

But there is still a long way to go, which is especially true in Indiana. Coke and steel plants, and other heavy industries concentrated in Northwest Indiana, still continue to spew cancer-causing pollution into the air exposing the mostly low-income people who live there to some of the highest cancer risks in the nation.[11] In rural Indiana, factory farms generate more than 14 times the amount of urine and feces produced by the state's entire human population of 87 million people. And that waste has, for years, been a leading cause of dangerous pathogens and excess nutrient

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[8] U.S. EPA, *Benefits and Costs of the Clean Air Act 1990-2020, the Second Prospective Study,* *https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act-1990-2020-second-prospective-study#:~:text=Even%20the%20low%20benefits%20estimate,the%20expenditures%20for%20pollution%20control*.

[9] U.S. EPA, *The Origins of EPA,* https://www.epa.gov/history/origins-epa.

[10] R. Fischman, *Cooperative Federalism and Natural Resources Law,* N.Y.U. Envtl. L.J, 14, 189-191 (2006).

[11] Industrious Labs, *Dirty Steel, Dangerous Air: The Health Harms of Coal-Based Steelmaking* (October 2024) (Lake County, Indiana has more toxic releases than 99% of all other counties across the country, and ranks second in the nation for the most industrial pollution released per square mile), https://industriouslabs.org/archive/report-dirty-steel-dangerous-air.

pollution fouling Indiana's waterways.[12] Indiana also has the highest number of coal ash ponds than any other state in the nation—and those toxic waste dumps have been leaching and contaminating the state's waterways and aquifers with dangerous chemicals for decades.[13] Due to these and other chronic sources of unchecked pollution, Indiana continues to lead the nation with the most miles of rivers and streams deemed too contaminated to swim in.[14] Indeed, Indiana continues to be ranked as the most polluted state in the nation.[15]

Plainly, whether Indiana's regulations are "more stringent" than federal rules or not, they are failing to address the State's serious environmental challenges. Combined with the dramatic rollback of environmental protections at the federal level,[16] this is certainly not the time to relinquish or restrict the authority of Indiana's environmental agencies to do better. The Trump administration has issued an avalanche of deregulatory actions to scale back or eliminate 31 federal regulations that limit toxic air pollution from cars and powerplants, restrict mercury emissions, and protect rivers and streams.[17] The administration also stripped the authority of the Council on Environmental Quality, which issues NEPA regulations thereby creating uncertainty in environmental impact reviews.[18] If that were not enough, the Trump administration also announced massive cuts to EPA's staff and funding, which will devastate the agency's ability to enforce environmental protections and do vital research, at the expense of Americans' health, safety, and quality of life, including that of our children and grandchildren.[19]

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[12] Hoosier Environmental Council, *Feeding the World Better Without Factory Farms,* 8 (2021), https://www.hecweb.org/wp-content/uploads/2022/02/Sustainable-Food-Farming-Forum-Citizen-Guide.pdf.

[13] Earthjustice, *Toxic Coal Ash in Indiana: Addressing Coal Plants' Hazardous Legacy* (May 3, 2023), https://earthjustice.org/feature/coal-ash-states/indiana.

[14] K. Kelderman, *et al.*, *The Clean Water Act at 50: Promises Half Kept at the Half-Century Mark,* Environmental Integrity Project, 33-35 (Mar. 2022), https://environmentalintegrity.org/wp-content/uploads/2022/03/CWA@50-report-EMBARGOED-3.17.22.pdf.

[15] *Rankings: Overall Best States,* U.S. News & World Report (2025) (ranking Indiana the 33rd best state overall and 50th—the worst ranking on the natural environment), https://www.usnews.com/news/best-states/indiana.

[16] K. Bense, *New Trump Administration Directives to Repeal Environmental Regulations En Masse Make 'No Sense,' Legal Experts Say,* Inside Climate News (Apr. 12, 2025), https://insideclimatenews.org/news/12042025/new-trump-administration-directives-to-repeal-environmental-regulations-en-masse-make-no-sense-legal-experts-say/.

[17] Press Release, U.S. EPA, *EPA Launches Biggest Deregulatory Action in U.S. History* (Mar. 12, 2025), https://www.epa.gov/newsreleases/epa-launches-biggest-deregulatory-action-us-history.

[18] N. Farah, *3 Questions Answered About NEPA Under Trump,* E&E News (Mar. 6, 2025), https://www.eenews.net/articles/3-questions-answered-about-nepa-under-trump-2/.

[19] A. Borunda, *The Trump Administration Says it Will Cut EPA Staffing to Reagan-Era Levels,* National Public Radio (May 2, 2025), https://www.npr.org/2025/05/02/nx-s1-5385272/epa-environmental-protection-agency-cuts-trump-zeldin#:~:text=Earlier%20this%20year%2C%20the%20agency,were%20transferred%20to%20other%20offices; Environmental Protection Network, *Facts: The Trump Administration's Attacks on EPA Will Harm Public Health and Safety,*

Without question, the Trump rollbacks are dangerous. So too is EO 25-38. Indiana has numerous environmental challenges to address, and it can no longer depend on the federal government to help. We call on IDEM to advise Governor Braun that the agency needs full authority under federal and state law to carry out its legislative mandate "to preserve, protect, and enhance the quality of the environment so that, to the extent possible, future generations will be ensured clean air, clean water, and a healthful environment." Ind. Code § 13-12-3-1(3). There are other state agencies tasked with promoting economic development including, among others, the Indiana Economic Development Corporation, that are better suited to serve industry interests. Further weakening Indiana's already ineffective environmental regulations is not the answer.

III. EO 25-38 Imposes an Unnecessary and Onerous Burden on State Agencies

EO 25-38 requires IDEM and other state agencies to comb through their existing regulations and identify those that are "more stringent than" federal law. This imposes an incredibly onerous burden on agency staff time and resources. There are literally thousands of federal and state statutory and regulatory provisions that IDEM will have to review to comply with the Governor's mandate. And this job will be made more difficult given the ambiguities involved in determining whether a specific state regulation is "more stringent" than a federal requirement.

As discussed above, the cooperative regulatory framework created by federal environmental laws gives states broad discretion to implement federal programs in their jurisdictions. For example, the Resource Conservation and Recovery Act ("RCRA") authorizes states to "promulgate regulations based on [federal] *guidelines* . . . for carrying out regional solid waste management." 42 U.S.C. § 6946(a) (emphasis added). Similarly, the CWA gives states a great deal of discretion in setting water quality standards by defining designated uses and their applications to particular bodies of water. 33 U.S.C. § 1313. And when allocating pollution loads for waters that are not attaining their designated uses, states are largely free to pursue their own priorities. *Id.* § 1313(d). States also have wide latitude under the CAA to choose among air pollution abatement and reduction strategies in developing state implementation plans ("SIPs") for meeting national ambient air quality standards. 42 U.S.C. § 7410(a).

In turn, Indiana's regulations that implement these federal programs are incredibly detailed and complex. Indiana's solid waste regulations contain hundreds of provisions governing every operational aspect of landfills, incinerators, transfer stations, composting facilities, waste tire operations, collection container systems and other waste management, disposal, and processing facilities. *See* Title 329 of the Indiana Administrative Code. Indiana's water quality standards and implementation procedures encompass hundreds, if not thousands of administrative code provisions for designating uses, developing water quality-based effluent limits, and antidegradation policies. *See* Title 327 of the IAC. Indiana's SIP under the CAA likewise sets out extensive, complex, and highly technical procedures and requirements for monitoring and modeling air quality, collecting air quality data, developing emissions inventories and control

https://www.environmentalprotectionnetwork.org/epafacts/the-trump-administrations-attacks-on-epa-will-harm-public.

strategies, achieving emission reductions, setting emissions limits, attainment demonstrations, vehicle inspections, among other requirements unique to Indiana. *See* Title 326 of the IAC.[20]

This level of detail is necessary, in part, to help regulated entities comply with regulatory obligations by making them as explicit as possible; not to create an undue burden or impose requirements that exceed federal standards. For instance, in *Covington v. Jefferson Cnty.,* the 9th Circuit considered whether an Idaho regulation requiring landfills to provide six inches of cover at the end of each operating day was more stringent than RCRA's federal guideline that cover must be provided "*in such a manner* as to reduce the risk of fire and to impede vectors access." 358 F.3d 626, 643 (9th Cir. 2004) (emphasis)). Concluding the regulation was not more stringent, the court reasoned that the state rule merely set the uniform "manner" for meeting the federal requirement to reduce fire risk and vectors. So, the question is, how will IDEM measure or compare the thousands of similarly detailed state regulations to the broad federal standards that authorize them to determine if the state rules are more stringent? This ambiguity will do nothing more than create confusion and waste time.

The exercise is also entirely unnecessary. Indiana law already requires IDEM to report and justify any proposed new rules that are deemed "more stringent" than federal law. *See* Ind. Code §§ 13-14-9-3 and -4. In any proposed rulemaking, IDEM engages in three rounds of public notice and comment. The public notices must identify and justify, with detailed explanation and supporting documentation, any element of a proposed rule that IDEM believes exceeds federal law. Ind. Code § 13-14-9-4(a). The proposed rule must also be approved by the Environmental Rules Board ("ERB") that is made up of 16 members, 11 appointed by the Governor, who represent various constituencies including business, manufacturing, construction, agriculture, labor, and other industry interests. And assuming the rule is approved by the ERB, it is not effective until the Indiana legislature has had an opportunity to review and veto it. Ind. Code § 13-14-9-4(b). There is simply no need for Governor Braun to require IDEM to repeat this review.

In sum, EO 25-38 is based on the demonstrably false premise that protecting the environment cannot go hand-in-hand with growing the economy. The nation's fifty-year history of environmental regulation proves otherwise. Indiana's existing regulations are already ineffective at addressing Indiana's serious environmental challenges. Weakening them further in the face of dramatic rollbacks at the federal level poses a dangerous threat to Indiana's natural resources and people. And requiring state environmental regulators to review thousands of pages of statutory and administrative code to compare the "stringency" of Indiana's environmental regulations to broad federal requirements, imposes an unnecessary, confusing, onerous, and undue burden on already strapped state agencies. Accordingly, we call on IDEM to include a discussion of these considerations and concerns in its report to the Governor.

IV. Suggestions for Repealing, Replacing, or Modifying Existing IDEM Rules & Policies

In addition to requiring environmental agencies to identify regulations that exceed federal requirements, EO 25-38 also directs agencies to identify "environmental regulations and policies that "significantly raise the cost of living for Hoosiers, are not supported by current law and the

[20] *See also* IDEM, *About Indiana's SIP* at https://www.in.gov/idem/sips/about-indianas-sip/.

best available science, or do not benefit Indiana's environment." IDEM has requested public comments that provide "specific suggestions" for repealing, replacing, or modifying such IDEM rules and policies. And on that front, we identify the following:

A. Indiana's SIP does not meet CAA requirements, is not based on best available science, and does not benefit Indiana's environment.

The CAA requires states with areas in moderate nonattainment to submit SIP revisions that provide for emissions reductions of at least 15% from baseline emissions.[21] In January 2025, IDEM's revised SIP took effect. That included an Attainment Demonstration to comply with Sections 172 and 182 of the CAA.[22] IDEM adopted no additional control measures to attain the required ozone standards of 0.070 parts per million and instead utilized a six-page document that exclusively relied on existing regulations. In doing so, IDEM established a SIP that ignores Indiana's responsibility to protect public health and the environment.

IDEM's decision to not adopt additional control measures is not rooted in the best available science. IDEM asserted that it complied with Sections 172(c)(1) and 182(b)(2) because it had "adopted all reasonable and available control measures to demonstrate attainment as expeditiously as practicable and that no additional measures that are reasonably available will advance the attainment date."[23] In support of this assertion, IDEM relied on a study prepared for the Lake Michigan Air Directors Consortium ("LADCO") intended to identify and evaluate NOx and VOC emission controls to reduce ozone concentrations throughout the Chicago area.

IDEM touted this study as a "comprehensive assessment of candidate control options." However, the study did not consider point sources, such as the large lakeshore industries with Part 70 air emission permits, "because point source emission control analyses are expected to be performed on an as-needed basis by state/region specific agency staff."[24] The problem with this is that point sources are some of the largest sources of ozone precursors. Without identifying and evaluating NOx and VOC emission controls from large point sources, IDEM cannot demonstrate that it has adopted all reasonably available control measures.

This is particularly indefensible because the Trump administration will be aggressively rolling back the mobile source standards that IDEM appears to be relying on to allow local

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[21] 42 U.S.C. § 7511a(b)(1)(A).

[22] Final Approval of the Indiana 2022 Annual CFR Update, Fed. Reg. 89 FR 66661 (Dec. 27, 2024) (to be codified at 40 C.F.R. 52.769); IDEM, Attainment Demonstration and Technical Support Document (Aug. 15, 2023), https://www.in.gov/idem/sips/files/attainment_o3_lake_porter_2015.pdf.

[23] *See* LADCO, *Evaluating Ozone Precursor Emissions Reductions in the Great Lakes Region*, Lake Michigan Air Directors, Consortium, https://www.ladco.org/technical/projects/ramboll-o3-%20precursors-contract-2020/.

[24] Ramboll US Consulting, Inc., *Final Report: Control of Ozone Precursor Emissions in the Great Lakes Region*, (March 2021) at 1, https://www.ladco.org/wp-content/uploads/FinalReport_LADCO_Ozone_Emissions_Control_05Mar2021.pdf.

industries continue their business as usual.[25] Specifically, in proposing no new control measures, IDEM relied in part on estimated future reductions in emissions from mobile sources, and EPA's Transport Rule that the Supreme Court struck down last year. According to IDEM's estimates, these then-anticipated, future reductions would more than make up for increases in NOx and VOCs from point sources. In hindsight, we now know that IDEM relied on the health benefits of federal and California mobile source regulations that are being scaled back and a Transport Rule that no longer exists to allow local industries to pollute more. Such an outcome, carried out by IDEM regulations, is inconsistent with the goals and requirements of the CAA, is not based on best available science, and does not benefit the environment.

B. IDEM's failure to implement control measures to satisfy the EPA's limit of 0.070 ppm ozone in Northwest Indiana puts Hoosiers at serious risk of respiratory illness and death and demonstrates IDEM's failure to base its regulations on the best science.

Industrial plants such as steel mills produce VOC and NOx, which react in the atmosphere to form ozone. Ozone that forms at the ground level due to industrial activities results in significant human health impacts.[26] Even brief ambient exposure to ozone is associated with asthma exacerbations, emergency room visits, hospital admissions, and deaths, particularly in children, adults who are active outdoors, and those with asthma.[27]

Studies have shown that concentrations of ozone above 31 ppb result in a significant increase in respiratory mortality.[28] The EPA's limit of 0. 070 ppm (or 70 ppb) is more than double the concentration at which significant respiratory issues arise. Nevertheless, IDEM has failed to implement control measures to satisfy even the EPA's unprotective limit of 0.070 ppm ozone in Northwest Indiana. This puts Hoosiers at serious risk of respiratory illness and death and also demonstrates IDEM's failure to base its regulations on the best science.

C. IDEM's policy of not requiring use of continuous emissions monitoring systems (CEMS) is not based on best available science and is not cost effective.

Major sources of particulate matter (PM) use a variety of systems to capture and control their emissions. The most common controls are fabric filter baghouses and electrostatic

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[25] U.S. EPA, Press Release, *EPA Announces Action to Implement POTUS's Termination of Biden-Harris Electric Vehicle Mandate* (Mar. 12, 2025), https://www.epa.gov/newsreleases/epa-announces-action-implement-potuss-termination-biden-harris-electric-vehicle.

[26] U.S. EPA, *Ground Level Ozone* Basics, EPA.gov, https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics.

[27] Patrick L. Kinney, T*he Pulmonary Effects of Outdoor Ozone and Particle Air Pollution*, 20 Seminars in Respiratory and Critical Care Medicine, 1999 at 601; *see also*, Stephanie M. Holm, *Systematic Review of Ozone Effects on Human Lung Function*, 2013 Through 2020, 161 CHEST, 190-201 (January 2022) (reviewing studies that consistently demonstrate that even short-term low-level ozone exposure decreases children's lung function).

[28] Ziheng Liu, Xi Chen, and Qinan Lu, *Blowin' in the Wind of an Invisible Killer: Long- Term Exposure to Ozone and Respiratory Mortality in the United States*, IZA Discussion Paper No. 15981, (March 7, 2023) at 3, https://www.iza.org/publications/dp/15981/blowin-in-the-wind-of-an-invisible-killer-long-term-exposure-to-ozone-and-respiratory-mortality-in-the-united-states.

precipitators. And compliance with a facility's PM emission limit requires periodic stack testing during which parametric limits are established that must be monitored and controlled on a weekly or even daily basis. Both the stack testing and the monitoring, maintenance, recording, and reporting of parametric operating limits are expensive and, ultimately, only a surrogate for actual compliance. Many facilities also have to incur the additional expense of hiring a certified 'smoke reader' to conduct occasional Method 9 testing (addressed more below).

Meanwhile, more modern technology has dramatically lowered the price of continuous emissions monitoring systems (CEMS), making their installation and operation often less expensive for the regulated community while providing greater assurance that neighboring communities are not exposed to excess emissions. IDEM's policy of not requiring facilities to use CEMS is thus not based on best available science, nor cost effective

D. IDEM's reliance on Method 9 testing is not cost-effective or based on the best available science.

Indiana's air regulations governing PM emissions rely extensively on opacity monitoring. *See* 326 IAC 5. In turn, the Part 70 permits of many major sources rely heavily on EPA's Method 9 to measure the opacity of emissions – the percentage of sunlight blocked by the smoke—which requires a trained individual to observe the emission source for two hours during daylight hours. Method 9 opacity monitoring is markedly outdated and ineffective. It was developed back in 1974 and is based on technology from the late 1800s to measure the efficiency of boilers.[29] Most significantly, there is little evidence that opacity is directly related to the quantity of PM emissions.[30] That said, continuous opacity monitoring can provide insight into the operating efficiency of emissions control equipment. Thus, to the extent that IDEM continues to impose opacity limits, it should insist that facilities install continuous opacity monitoring systems (COMS). Doing so can reduce costs and improve compliance. And COMS systems are relatively inexpensive and easy to install, calibrate and maintain compared with the cost of hiring staff or a contractor who is trained and certified as a Method 9 reader.

E. IDEM's routine practice of issuing industrial NPDES permits that lack appropriate limits and monitoring requirements to assure compliance with Indiana's water quality criterion for mercury violates the CWA, fails to protect Indiana's environment, and is not grounded in best available science.

IDEM routinely issues NPDES permits to Indiana's industrial dischargers that set an average monthly limit ("AML") for mercury of 12 ng/l and a daily maximum limit ("DML") of 20 ng/l, while requiring only a single grab sample every other month for monitoring.[31] The problem

[29] *See* U.S. EPA, *Visible Emissions Field Manual EPA Methods 9 and 22* (Dec. 1993), https://www.epa.gov/sites/default/files/2020-08/documents/vefieldmanual.pdf).

[30] *See* U.S. EPA, Office of Air Quality Planning and Standards, *Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring* (Sept. 2000); Environment Maryland Research & Policy Center, *Particulate Matter Pollution from Maryland Power Plants* (June 2007), https://publicinterestnetwork.org/wp-content/uploads/2012/02/Maryland-PM-Pollution.pdf.

[31] *See, e.g.,* NPDES Permit No. IN0004693 AES Indiana–Eagle Valley Generating Station at 3 (IDEM VFC Doc. No. 83453815); NPDES Permit No. IN0002780, Duke Energy Indiana, LLC –

with this is that these limits combined with the infrequency of monitoring cannot assure compliance with Indiana's WQC for mercury in violation of the CWA and basic mathematical principles.

Indiana has determined that surface water concentrations of mercury must not exceed a four-day average of 12 ng/l "to protect aquatic life from [its] chronic toxic effects." 327 IAC 2-1-6(a)(2)(A), (a)(3) Table 6-1 (referred to as the "Chronic Aquatic Criterion" or "CAC"). And because mercury is a bioaccumulative chemical of concern ("BCC"), 327 IAC 2-1 6(a)(3) Table 6-1, any WQBEL for mercury must apply this CAC "directly to the undiluted discharge for all discharges." 327 IAC 5-2-11.1(b)(6). In other words, no dilution or mixing zones are allowed in setting a WQBEL for mercury. "The relevant water quality criterion must be attained at the point of discharge."[32]

Basic math dictates that setting an AML of 12 ng/l, and a DML of 20 ng/l, while requiring monitoring by a single grab sample once every other month will not assure compliance with the mercury CAC for two reasons. First, the average of one grab sample is the value of the sample itself. Therefore, if the one sample that a discharger is required to take in a particular month is 20 ng/l, it meets the daily maximum but violates the monthly average limit (and WQC) of 12 ng/l. Second, it is also basic math that without any sampling data—which is allowed six months out of the year by the IDEM-issued NPDES permits—there is no way to calculate a daily value or a monthly average value for any of those six months.

IDEM has suggested in communications with commenters that this lack of data means "there can be no noncompliance" in those six months because the dischargers could "choose" to take some samples in those months if they wanted to. But that is not what the CWA requires. All NPDES permits must include monitoring requirements that "assure compliance" with all permit limitations, terms, and conditions. 40 CFR § 122.44(i); 327 IAC 5-2-13(a). As such, monitoring requirements must be of the "type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring." 40 CFR 122.48(b); *see also* 327 IAC 5-2-13(c)(2) ("monitoring frequency, type, and intervals [must be] sufficient to yield continuing data representative of the volume of effluent flow and the quantity of pollutants discharged based on the impact of the wastestream on the receiving water"). A monitoring frequency that "yields" no data six months of the year does not meet this test, especially when the discharge is a continuous one, as it is with most major industrial facilities.

Edwardsport IGCC Generating Station at 2 (IDEM VFC Doc. No. 83087557); NPDES Permit No. IN0002763, Duke Energy Indiana, LLC – Cayuga Generating Station at 2 (IDEM VFC Doc. No. 82626436); NPDES Permit No. IN0002887, Indianapolis Power & Light Company – Petersburg Generating Station at 3 (October 1, 2017); NPDES Permit No. IN0053201, Northern Indiana Public Service Company LLC – R.M. Schahfer Generating Station at 2 (IDEM VFC Doc. No. 83057294); NPDES Permit No. IN0064122, St. Joseph Energy Center, LLC at 2 (IDEM VFC Doc. No. 82691027).

[32] U.S. EPA, NPDES Permit Writers' Manual, Ch. 6: *Water Quality-Based Effluent Limitations,* 6-16 (Sept. 2010).

Accordingly, IDEM should end its unlawful practice and follow U.S. EPA's technical guidance on the matter. That guidance directs that in calculating an average monthly effluent limit for a BCC like mercury where the "criterion is applied at the end of the pipe," at least four monthly samples should be assumed in the calculation to avoid the very situation where the discharger complies with the permit limit but exceeds the criterion.[33] Moreover, EPA's technical guidance provides a list of factors that IDEM should consider in selecting an appropriate monitoring frequency, which should "ideally" be set at "10 or more samples per month to provide the greatest statistical likelihood that the average of the various monthly values will approach the true monthly LTA value," or at minimum, a frequency that reflects "a reasonable compromise" based on the list of factors.[34] Six samples a year is not a reasonable compromise.

F. Indiana's confined feeding regulations are not based on best available science, impose considerable health costs on Hoosiers, and fail to protect the environment.

As public interest environmental lawyers and advocates serving Indiana citizens, we often hear from rural Hoosier families that their lives have been disrupted by the proliferation of concentrated animal feeding operations ("CAFOs") in their communities. Common problems they report are sickening odors, manure-laden waterways, plummeting property values, and the feelings of frustration, isolation, and despair they experience when they learn that neither their local government officials nor IDEM will help. When they reach out to IDEM they're told it's a "local problem" and when they contact their local government leaders, they are directed back to IDEM. Citizens who need help are not getting it, and in most cases, it is because the offending CAFO is complying with the law. That means something is wrong with the law. And indeed, there are several problems that IDEM should raise with Governor Braun and the legislature.

1. No limit on animal numbers

Although there is a minimum animal number threshold for regulation under Indiana law, there is no maximum limit on the number of animals at a CAFO. 327 IAC 19-2-7. Without limits, the size of CAFOs has increased dramatically in recent years. Since 2012, the average sized hog CAFO approved by IDEM went from 5,000 to more than 10,000 hogs. Similarly, the average diary CAFO went from 1,000 to more than 4,000 cattle.[35] To put that into perspective, the average adult human generates less than a pound of feces per day whereas the average lactating dairy cow generates 106 pounds per day.[36] That means a 4,000 head dairy CAFO will generate the same amount of excrement every day as a city of 424,000 people. Yet, there are no limits on how large these operations can get and unlike cities, CAFOs are not required to treat their sewage before disposal.

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[33] U.S. EPA, Technical Support Document for Water Quality-Based Toxic Control, 107-110 (March 1991), https://www3.epa.gov/npdes/pubs/owm0264.pdf.
[34] *Id.* at 113.
[35] Data sourced from IDEM, the U.S. Ag Census Bureau.
[36] UMass Extension, Estimating Manure Inventory, https://www.umass.edu/agriculture-food-environment/crops-dairy-livestock-equine/fact-sheets/estimating-manure-inventory; C. Rose, et al., *The Characterization of Feces and Urine: A Review of the Literature to Inform Advanced Treatment Technology,* Crit Rev Environ Sci Technol 45(17):1827-1879 (Sept. 2, 2015), https://pmc.ncbi.nlm.nih.gov/articles/PMC4500995/

2. Dangerously inadequate setbacks

Despite the enormous amount of biological waste CAFOs generate, under existing IDEM regulations, that waste can be collected and stored in open air "lagoons" larger than several football fields and built dangerously close to waterways and where people live. Indeed, current regulation imposes a mere 400-foot setback from existing homes and public buildings—a distance that is measured from structure to structure, not the property line. 327 IAC 19-12-3(a)(4). Put another way, if an existing home or school is 300 feet from its property boundary, the CAFO, regardless of size, can be built just 100 feet from that boundary, effectively imposing a 300-foot easement on the residential or school property without paying for it.

Similarly, current regulation imposes a mere 300-foot setback from lakes, rivers, streams, and wetlands. 327 IAC 19-12-3(a)(2). And there are no specific setbacks for parks, nature areas, or other public spaces other than a meager 100-foot setback from the property line. 327 IAC 19-12-3(a)(3). In other words, regardless of the number of animals and amount of waste produced, no hog skyscraper would ever be too large, and no lake of dairy waste too vast, putrid, and foul, to require a greater setback from where our children and their families live, learn, and play.

3. CAFOs are not "zero discharge"

IDEM's CFO rule is based on the myth that CAFOs are "zero discharge"—that is, they do not discharge pollutants to our waterways. This is a legal fiction not grounded in reality. Indiana's livestock generate tremendous amounts of waste—significantly more than Indiana's human population. It is well known that animal waste (from humans and livestock) contains high levels of phosphorus and nitrogen as well as pathogens like E. coli and parasites,[37] which is why human waste must be treated before it can be applied to land. Nevertheless, CAFOs are allowed to spread millions of gallons of livestock waste on the ground, untreated, subject only to minimal setbacks and land application requirements that are based on nutrient content, but not pathogens in the waste. 327 IAC 19-14-2 and -3.

Once the pathogen-laden waste is spread on the ground, it can (and does) runoff with rain or melting snow into waterways, leach into groundwater, and if tile drains are present, discharge directly to surface waters. Even so, none of these pollution pathways are considered "discharges" subject to regulation. As a result, pathogens (as indicated by the presence of E. coli) from livestock waste "continues to be the top cause of stream impairments in Indiana,"[38] which is a considerable health threat. The numerous pathogens, parasites, and other forms of coliform bacteria found in manure are easily communicable to humans. When they contaminate drinking water, pathogens can cause gastrointestinal illnesses, kidney damage or failure, and in extreme cases, death[39]— a particular concern for rural Hoosiers who rely on wells for drinking water.

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[37] Paul Ebner, *CAFOs and Public Health: Pathogens and Manure*, Purdue University Extension ID-356 (2007), https://www.extension.purdue.edu/extmedia/id/cafo/id-356.html.

[38] IDEM, 2024 Indiana Integrated Water Monitoring and Assessment Report at 2, Tables A-9 and A-10, https://www.in.gov/idem/nps/files/ir_2024_report.pdf.

[39] *See e.g.,* Bukholder, Libra, et. al., *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality*, Environ. Health Perspect. 115(2): 308-312 (Feb. 2007).

4. No limits on dangerous air emissions

Water pollution aside, CAFOs are well-known to be a major source of noxious and dangerous air emissions including hydrogen sulfide, ammonia, volatile fatty acids, amines, and other dangerous chemical compounds.[40] In fact, a Purdue University study of air emissions at a dairy CAFO in Indiana found ammonia released at a rate of between 18 and 75 grams per day per cow.[41] In other words, a CAFO with 1,400 cows will emit as much as 200 pounds of ammonia into the air every day, above the regulatory threshold under the CAA. Yet, there are no state or federal regulations that limit these emissions in any way, which is contrary to best available science.

It is well known that dangerous air emissions from CAFOs are disbursed into the surrounding area where people live in a number of ways: (1) CAFOs with waste pits underneath the confinement buildings typically have large ventilation fans that pull the gases out of the buildings and blow them into the outside air to protect the animals; (2) CAFOs with open air lagoons allow perpetual off-gassing to occur; (3) when the collected waste is sprayed onto fields, emissions are directly released; and (4) confinement barns that are open-sided allow gases to escape. Moreover, the livestock industry has extensively studied this and understood for decades how to control these emissions,[42] but have successfully resisted being regulated at every turn.[43]

Unfortunately for people who, through no fault of their own, find themselves living next to a CAFO, the resulting stench from CAFO air pollution can be unbearable, but even more concerning are the serious health effects. For instance, one of the most dangerous gases, hydrogen sulfide, is harmful even at low levels. It is a potent neurotoxin that can cause damage to the brain and nervous system. People exposed to concentrations of even 0.1-1 parts per million (ppm) display neurobehavioral dysfunction, including abnormal balance and delays in verbal recall. Its effects are irreversible and can also include skin rashes, seizures, comas, and even death.[44] Like hydrogen sulfide, ammonia is a noxious gas that poses serious health risks. Ammonia has an acrid, repellant odor at levels above 0.7 ppm. It causes eye irritation beginning at 4 ppm and irritation of

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[40] Claudia Copeland, *Air Quality Issues and Animal Agriculture: A Primer, U.S. Congressional Research Service*, RL32948 (Dec. 22, 2014).
[41] Purdue University, National Air Emissions Monitoring Study: Emissions Data From Two Free Stall Barns and a Milking Center at a Diary Farm in Indiana-Site IN5B, Final Report (2010).
[42] American Society of Agricultural and Biological Engineers ("ASABE") Standard ASAE EP470, *Manure Storage Safety* (1992); R. Koelsch, *Managing Livestock Odors: Principles, Assessment and Planning,* EC95-745, University of Nebraska-Lincoln Extension (1995), https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2638&context=extensionhist; National Pork Board, *Swine Manure Storage and Handling Practices to Minimize Odors* (2007).
[43] Environmental Integrity Project, *Raising a Stink: Air Emissions From Factory Farms, https://environmentalintegrity.org/pdf/publications/CAFOAirEmissions_white_paper.pdf*.
[44] Agency for Toxic Substance and Disease Registry, ToxFaqs: Hydrogen Sulfide (2014); National Ag Safety Database, *Manure Gas Dangers Fact Sheet* (2002); KH Kilburn, *Evaluating Health Effects from Exposures to Hydrogen Sulfide: Central Nervous System Dysfunction,* Environmental Epidemiology and Toxicology (1999).

the nose and throat above 25 ppm. Ammonia can also trigger asthma attacks in some asthmatics,[45] which is particularly concerning for children.[46]

Beyond asthma, exposure to particulate matter and other harmful gases from CAFOs can have other deleterious effects including chronic lung and cardiovascular disease. Odors from these emissions can also harm a community's quality of life, preventing people from spending time outside, and impacting mental health.[47]

The serious public health risks from CAFO air and water pollution are undeniable and Indiana's confined feeding regulations are wholly ineffective to address them. Therefore, we call on IDEM to include Indiana's confined feeding rules to the list of regulations that should be replaced or significantly modified as failing to protect the environment, imposing undue medical costs on Hoosiers, and not based on best available science.

Thank you for considering our comments and suggestions for regulations that should be repealed, replaced, or modified for failure to meet the criteria in EO 25-38.

Sincerely,

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Conservation Law Center

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[45] Agency for Toxic Substance and Disease Registry, ToxFaqs: Ammonia, (2014)
[46] C. Loftus, et.al., *Ambient Ammonia Exposures in an Agricultural Community and Pediatric Asthma Morbidity,* Epidemiology 26:794 801 (2015).
[47] Iowa State University and University of Iowa College Study Group, *Concentrated Animal Feeding Operations Air Quality Study* (2002), https://ehsrc.public-health.uiowa.edu/wp-content/uploads/2019/08/CAFO_final2-14.pdf; S. Wing and S. Wolf, *Intensive Livestock Operations, Health and Quality of Life Among North Carolina Residents*, Environmental Health Perspectives (2000), https://pmc.ncbi.nlm.nih.gov/articles/PMC1637983/; KM Thu, et al., *A Control Study of the Physical and Mental Health of Residents Living Near a Large-Scale Swine Operation,* Journal of Agricultural Safety and Health (1997), https://elibrary.asabe.org/abstract.asp??JID=3&AID=17747&CID=j1997&v=3&i=1&T=1.

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