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Via Regulations.gov

Re: Addition of Natural Gas Processing Facilities to the Toxics Release Inventory, EPA-HQ-TRI-2016-0390

“This mandatory disclosure (TRI) has done more than all other legislation put together in getting companies to voluntarily reduce emissions.”

-- Millard Etling, Dow Chemical, The Atlanta Constitution, August 22, 1991

Introduction and Background

Thank you for the opportunity to comment on the Environmental Protection Agency’s (EPA) proposed addition of natural gas processing plants to the Toxic Release Inventory (TRI). Please accept these comments on behalf of Earthworks, a national nonprofit organization committed to protecting communities and the environment from the impacts of mining and energy development while seeking sustainable solutions. For more than 25 years, we have fulfilled our mission by working with communities and grassroots groups to reform government policies, improve corporate practices, influence investment decisions and encourage responsible materials sourcing and consumption.

Earthworks supports the addition of natural gas processing (NGP) facilities, NAICS 211112 (North American Industry Classification System), to the TRI. The proposed rule is a necessary acknowledgement by EPA of a new reality: rapid growth in the number and capacity of NGP facilities and the negative environmental and health risks posed by these facilities. We therefore

respectfully urge EPA to expeditiously finalize this proposed rule. However, for the reasons stated below, we believe that EPA underestimates the number of facilities that should report and we also urge inclusion of compression, gas gathering, and other midstream NAICS 211111 facilities as well, since (as discussed below) these can also release TRI-listed chemicals.¹

Earthworks has previously supported the TRI and EPA's discretionary authority to add or delete industry sectors from TRI's scope.² Indeed, the last time EPA added an industry to the TRI, metal mining and six others, the decision was in part based on an Earthworks (then Mineral Policy Center) petition.³ In the subsequent 20 years, the metal mining industry has perennially topped TRI's list as the nation's largest toxic polluter.

We therefore appreciate that EPA partially granted the Environmental Integrity Project (EIP) petition⁴, joined by Earthworks and sixteen other environmental advocacy organizations in 2015.⁵ EPA's partial grant of that petition reveals the agency's commitment to the purposes TRI serves. EPA's decision also reflects the credibility and seriousness of the petitioners' request, since the last time Earthworks and other environmental organizations requested EPA expand TRI's scope, it was for the nation's top toxic polluter. Now, we strongly believe that inclusion of NGP facilities in the TRI is equally warranted and urgently needed.

“Public disclosure of the Toxic Release Inventory has been a powerful motivator to companies ... to increase our efforts to reduce emissions. The TRI provides a means where the public can track our progress and do so on a consistent, measurable, basis. We are convinced that this activity will ultimately result in cost savings for the company and a competitive advantage.”

-- J. Ronald Condray, Monsanto World Wildlife Fund Fact Sheet, April, 1992

Factors in TRI Determinations

The last time EPA added industry sectors (metal mining and six others) to the TRI, in 1997, the agency considered three factors. The Chemical Factor simply asks whether the industry sector has the TRI-listed chemicals present.⁶ Second, the Activity Factor asks whether the facilities manufacture or use these chemicals. Finally, the Information Factor asks the degree to which

publication of the TRI information would provide benefit to communities. As discussed below, NGP meet all three.

With respect to the Information Factor, EPA stated in 1997 that one of the primary reasons for adding metal mining to the TRI included the benefits to the public at large, not simply the individual affected communities. “The ‘community’ which may benefit from data is broader than the individual citizens living or working in close proximity to mining operations.”⁷ EPA reasoned that TRI expansion was warranted as the information would provide the public knowledge of the chemicals involved in mining, and can use that information to better assess environmental and human health risks.⁸

Since its inception, TRI has had a major effect on environmental awareness and public policy. Citizens groups have produced scores of environmental advocacy reports using TRI data. Reporters have used TRI information as an additional tool to reveal toxic pollution. Many large companies have developed new corporate policies to address TRI chemicals. A number of state legislatures have passed toxics-use reduction laws. And government regulators have used TRI data to help set environmental priorities.

The Information Factor arguments that EPA employed 20 years ago apply *a fortiori* to the industry sectors identified in the 2015 EIP petition. The rapid deployment of the twin technologies of directional drilling and hydraulic fracturing for oil and natural gas has moved ever closer to residential areas, schools, parks and playgrounds, airports, and hospitals all across the United States—including in states that have never had large-scale oil and gas development before.

In Texas, some cash-strapped school districts have leased school property to the oil and gas industry in exchange for royalty payments needed to help balance their budgets.⁹ Some oil and gas facilities have been constructed within a few hundred feet of school playgrounds. The same situation exists in Colorado.¹⁰ In Pennsylvania, religious institutions that run summer camps for children have leased some of their property as well.¹¹

The close connection that this industry now shares with the public at large vastly overshadows that for many other TRI reporting entities. Compressor stations, wells, pipelines, and other infrastructure are sometimes literally in the backyards of an increasing number of Americans. This rapid spread of the oil and gas industry, not contemplated 20 years ago, coupled with its increasing proximity to population centers, merits inclusion in the TRI.¹²

In response to EIP's petition, EPA wrote: "The addition of natural gas processing facilities to TRI would meaningfully increase the information available to the public and further the purposes of (the TRI law) EPCRA § 313."¹³ Adding, "EPA estimates that natural gas processing facilities in the U.S. manufacture, process, or otherwise use more than 25 different TRI-listed chemicals."¹⁴ We agree.

Communities living in proximity to oil and gas development deserve to know which toxic chemicals are being released into the air they breathe, and adding NGP facilities to the TRI will support this and help hold this industry accountable. While we prefer EPA require reporting also from NAICS 211111, this proposed step will provide the public a better understanding of the toxic contaminants in their communities.

Industry often claims that oil and gas development is safe, and resists more stringent regulation and oversight of activities that cause pollution. Yet, industry often blocks access to the information that the public needs to judge relative risks and safety for themselves.

Reporting of NGP facilities to the TRI would allow directly impacted residents access to information on the multiple chemicals to which they are potentially exposed over a period of time. In turn, residents could use this information to help identify the cause of health symptoms and seek appropriate medical testing and treatment. Policymakers and regulators could use the information to strengthen and implement air quality and health protections, while advocates and researchers would gain increased understanding of the impacts of natural gas development.

The TRI Information Factor in Light of Current Industry Practice

Current chemical disclosure regimes for the oil and gas industry have repeatedly proven inadequate. EPA's 2016 final study on the impacts of hydraulic fracturing on water resources highlighted this point.¹⁵ Among the many data gaps identified therein, chief among them were the poor performance of voluntary disclosure regimes and the increasing use of trade secrecy claims designed for no other purpose than to conceal from the public the danger posed by the presence and use of some of these chemicals. EPA staff have represented to Earthworks, that in practice, the agency denies few, if any, trade secret claims.

The EPA hydraulic fracturing study also emphasized that many questions about drinking water impacts remain unanswered for several reasons, including drilling companies' use of chemicals that are hidden from the public by trade secret protections and chemicals with unknown health effects.¹⁶ The EPA found that when well operators disclosed the chemicals used in hydraulic fracturing to FracFocus, the nation's largest repository of fracturing chemical data, they claimed as confidential at least one chemical for more than 70 percent of wells.¹⁷

The EPA also found that of 1,606 chemicals identified in hydraulic fracturing fluid or drilling wastewater, only 173 had toxicity values developed by sources that met EPA's standards for conducting risk assessments. "This missing information represents a significant data gap that makes it difficult to fully understand the severity of potential impacts on drinking water resources," EPA wrote.¹⁸

"For the most part [the TRI] serves the public good in various ways and probably prompts companies to do things that it otherwise wouldn't have done [to reduce emissions]."

-- Bob Kissell, DuPont Company F-P-4 Public Data Release, April 19, 1994

The TRI Information Factor in Light of Scientific Developments in Public Health Research

NGP facilities have clear air quality and health impacts, impacts that are increasing alongside the expansion of the midstream (processing and transmission) sector of natural gas development and the extraction of Natural Gas Liquids (NGLs).

Earthworks has long expressed concerns about the environmental and health impacts of shale gas development. Documentation of such impacts has accelerated in recent years; according to a comprehensive assessment of peer-reviewed literature on such risks from shale and tight gas development concluded that 80% of all papers (which total nearly 400) have been published just since 2013.¹⁹ In addition, links between shale gas development and impacts were found in the vast majority of scientific studies, including those related to health (84%); air quality (87%); and water quality (69%).²⁰

People living near NGP facilities day in and day out, as well as workers at job sites, often are subjected to multiple toxic substances simultaneously and on a chronic, long-term basis. To determine exposure risks, it is necessary to understand what happens when multiple chemicals interact and mix.²¹ The Agency for Toxic Substances and Disease Registry (ATSDR) has underscored the hazardous potential for a mixture of chemicals due to additivity, interactions, or both.²²

In addition, the nationwide growth of the oil and gas industry has, in turn, worsened the impact of toxic chemicals on air quality and health. For example, Earthworks recently reviewed data from the Pennsylvania Department of Environmental Protection (DEP) emissions inventory, which showed a considerable increase in the volume of most criteria pollutants and greenhouse gases reported to the inventory in the last few years.

Notably, volumes grew at a much faster rate than the number of well sites and midstream facilities—suggesting either greater average pollution emitted per facility in 2014 than in 2012, or that a number of facilities coming online had particularly high levels of emissions.

EPA Underestimates the Number of Regulated Facilities Under This Proposal

In the proposed rule, EPA has estimated between 282 and 444 NGP facilities would meet the basic criteria for reporting to the TRI: facilities that “extract heavier liquid hydrocarbons from the raw or field natural gas” and produce Natural Gas Liquids (NGLs), and which “manufacture, process, or otherwise use at least one TRI listed chemical in excess of applicable threshold quantities.”²³ This number is based on the Energy Information Administration (EIA) 757 Schedule A Survey, which currently shows 517 active natural gas processing plants nationwide.

Earthworks believes that the actual number of covered facilities under this proposal is very likely higher. The primary reason is that operators self-report the 757 Survey information at a given point in time. However, operators routinely expand facilities, change, and/or recharacterize their functions. As a result, some NGP plants may not be defined as such, nor state that they process NGLs at the time of reporting, but may end up doing so at a later date.

Along with these written comments, Earthworks is submitting a recent research report, *Permitted to Pollute: how oil & gas operators and regulators exploit clean air protections and put the public at risk*.²⁴ As part of this in-depth investigation, we researched the permits, plan approvals, emissions estimates, reported emissions, and other documents associates with three natural gas facilities in southwestern Pennsylvania. Our research demonstrates why a much more stringent level of toxic release tracking and reporting is warranted—and why EPA should include more types of facilities in the TRI rule.

Our project sites included a facility that is notably absent from EIA’s list of NGPs: the Bluestone Gas Processing Plant in Jackson Township, Butler County, which is owned and operated by MarkWest Liberty Bluestone LLC. Earthworks is puzzled why the Bluestone plant is not on the EIA list, given that the plant has the SIC code 1321 (Mining-Natural Gas Liquids), which EPA specifies in the proposed rule, is largely based on fractionation (e.g., cryogenic and deethanization functions), and has operated as an NGP facility since 2013.

A key finding of our research was that the Pennsylvania Department of Environmental Protection (DEP) allows operators to expand and change processing and compression facilities under older permits designed for smaller, more limited activities.

This was certainly the case with the Bluestone plant, for which MarkWest has sought and received from DEP numerous “minor source” operating and modification permits. Since 2010, Bluestone has grown more than 10-fold in both acreage and processing capacity—with the operator’s plans submitted with permit applications shifting from a gathering compressor station to a very large industrial gas processing plant. However, it was only in December 2016, after six

plan approvals based on state general air permits, that DEP finally classified Bluestone as a “major source” (Title V) facility.²⁵

The TRI Chemical and Activity Factors

In addition to these written comments, Earthworks is also submitting videos taken with a Forward Looking Infrared (FLIR) camera by certified thermographers from twelve NGP facilities listed on EIA’s 757 survey and two more that should report to the TRI: the Bluestone plant and the Trilith compressor station (discussed below). These videos demonstrate that NGP facilities emit air pollution as a part of normal operations, accidents and unscheduled events, and equipment leaks.

Earthworks took air samples at the Bluestone plant four times in 2016 using Summa canisters that were provided and analyzed by a certified lab using standard EPA methods (TO-15 for Volatile Organic Compounds and TO-3 for methane) and additional analysis for Tentatively Identified Compounds (TICs). In all, 60 distinct chemicals were detected at least once. One sample detected 47 chemicals; on this sampling date, a FLIR video showed the release of a dense and long plume of emissions released from a flare at the Bluestone plant clearly moving far beyond the boundary of the facility and toward the sampling site.

Among the chemicals detected at the Bluestone plant, 22 are TRI listed—a clear demonstration of the need to include NGP facilities in this reporting requirement. These include Acetonitrile, Acrolein, Benzene, Biphenyl, Cyclohexane, Dichlorodifluoromethane, 1,2-Dichloroethane, 1,2-Dichloropropane, Ethylbenzene, n-Hexane, Isoprene, Methyl methacrylate, Naphthalene, Styrene, Tetrachloroethylene, Toluene, Trichlorofluoromethane, 1,2,4-Trimethylbenzene, Vinyl acetate, m-Xylene, o-Xylene, and p-Xylene.

In samples taken at the Bluestone plant, we detected two TRI chemicals in higher concentrations than the effects screening levels (ESL), or levels likely to trigger health symptoms. These included a concentration of Acrolein at 3.50 ug/m³, which is above the short-term ESL (3.2 ug/m³) and more than four times the long-term ESL (0.82 ug/ m³); and Biphenyl at 3.00 ug/ m³, which is above the short-term ESL (2.3 ug/ m³) and three times the long-term ESL (1.0 ug/ m³).²⁶

The Material Safety Data Sheets (MSDS) submitted by MarkWest Energy Partners to DEP during permitting of the Bluestone plant support these sampling results. They specified a range of chemicals associated with NGLs and sweet condensate. These included Ethane, Propane, Normal Butane, Isobutane, Pentanes, Benzene, Toluene, Mixed Xylene, Ethylbenzene, Hexanes, and Hydrogen Sulfide.

Operators in Pennsylvania report emissions of criteria pollutants, greenhouse gases, and seven individual Hazardous Air Pollutants (HAPs) to the DEP emissions inventory. Total HAPs reported by MarkWest to the DEP Emissions Inventory for the Bluestone plant increased about 240 percent from 2012 to 2014 (the latest year for which data are available), when it reached nearly five tons per year.

In addition to research on the Bluestone NGP facility, we conducted similar reviews at two large gathering compressor stations in southwestern Pennsylvania: the Trilith in Lancaster County, Butler County, which is owned and operated by MarkWest Liberty Bluestone LLC and provides gas directly to the Bluestone plant; and the Shamrock in German Township, Fayette County, owned and operated by Laurel Mountain Midstream LLC. Our findings indicate that EPA should include this class of facilities (NAICS 211111 and potentially others) in TRI reporting requirements as well.

For both of these compressor stations, we found similar permitting patterns as with Bluestone, with capacity, equipment, and function changing and expanding considerably over time. In addition, DEP records classify Trilith as a gas processing plant, while permitting documents classify it as a compressor station—a discrepancy that influences which state and federal emissions monitoring and reporting requirements apply.

Air sampling by Earthworks at the Trilith and Shamrock compressor stations (also conducted four times during 2016 using Summa canisters and analysis by a certified laboratory) detected ten TRI-listed chemicals. These included Acetaldehyde, Dichlorodifluoromethane, Ethylbenzene, n-Hexane, Isoprene, Styrene, Toluene, Trichlorofluoromethane, 1,2,4-Trimethylbenzene, and Vinyl Acetate.

In sampling taken at the Trilith compressor station, we detected two chemicals in higher concentrations than the respective ESLs. These included concentrations of Acrolein at 2.90 ug/m³, which is almost four times the long-term ESL (0.82 ug/ m³); and of Acetaldehyde at 24 ug/ m³, which is 1.5 times the short-term ESL (15 ug/ m³) and more than half of the long-term ELS (45 ug/ m³).²⁷

The release of health-harming chemicals from compressor stations has been confirmed in other studies as well. Some of the chemicals in our sampling at Trilith and Shamrock (most notably Toluene, Ethylbenzene, Propene, Dichlorodifluoromethane, and Trichlorofluoromethane) are consistent with those detected in Earthworks' previous sampling near other compressor stations in Pennsylvania.²⁸ In addition, a similar suite of volatile organic compounds was also detected in sampling by the Southwest Pennsylvania Environmental Health Project near a compressor station in New York²⁹ and by ATSDR at a compressor station in Pennsylvania.³⁰

Conclusion

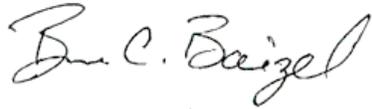
The research, FLIR filming, and air sampling Earthworks has conducted unequivocally supports the need to include NGP facilities in the TRI. Yet, the proposed rule does not entirely capture the scope of NGP facilities that should report, nor the similar kinds of midstream facilities that clearly produce substantial toxic releases.

We respectfully urge EPA to finalize the proposed rule with modest changes that will also include facilities like Bluestone, Trilith, and Shamrock that exist now and are currently being proposed and constructed nationwide. A final rule with a slightly broader application will help ensure that regulated facilities cannot skirt their TRI reporting requirements by employing schemes that purport to change or recharacterize the facility's permit status or function.

For the growing number of US residents living in proximity to the natural gas industry, the proposed rule cannot come too soon. They have a right to information about chemicals that can negatively impact their air quality and health. At the same time, the oil and gas industry has an obligation to be transparent about its operations and risks posed to the public.

Thank you for your time and attention.

Sincerely,



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¹ EPA estimates between 282-444 natural gas processing plants will report under this proposed rule. See 82 Fed Reg. 1651 (January 6, 2017).

² Emergency Planning and Community Right to Know Act § 313(b)(1)(B).

³ Mineral Policy Center, Environmental Defense Fund and National Audubon Society letter to William K. Reilly, Administrator, EPA, October 10, 1990. EPA finalized the final rule adding the metal mining and seven other industries to the TRI on May 1, 1997 62 FR 23833.

⁴ Docket ID No. EPA-HQ-TRI-2013-0281.

⁵ Formal Response to October, 24, 2012, Petition to Add the Oil and Gas Extraction Industry, Standard Industrial Classification Code 13, to the List of Facilities Required to Report under Section 313 of the Emergency Planning and Community Right-to-Know Act, October 22, 2015 (EPA Response to Petition)

⁶ For a [list](#) of TRI chemicals, please see <https://www.epa.gov/toxics-release-inventory-tri-program/tri-listed-chemicals>.

⁷ U.S. EPA, Final Rule on the Addition of Facilities in Certain Industry Sectors, Federal Register: May 1, 1997 (Vol. 62, No. 84), p. 23857.

⁸ U.S. EPA, Final Rule on the Addition of Facilities in Certain Industry Sectors, Federal Register: May 1, 1997 (Vol. 62, No. 84), p. 23857.

⁹ Denton, Arlington, and Ft. Worth Independent School Districts.

¹⁰ See https://www.youtube.com/watch?v=GN_ABMiCQck.

¹¹ Western PA communities offer local drilling lessons The Citizens' Voice by Laura Legere June 23, 2010.

¹² The Information Factor as articulated by those who stand to benefit from the information: "Western Maryland currently has the highest targeted amount of shale gas within the state, and development activities will likely be centered in rural communities like Garrett County. Unfortunately, the county does not have the information or ability to address the storage of large volumes of chemicals, which may appeal to companies looking to stage drilling and processing activities within Maryland," said Eric Robison, CitizenShale president and resident of Garrett County, Maryland. "The reporting provided by the TRI would allow a community like Garrett County to, first, be informed and, second, be prepared."

"I don't just work with Powder River Basin Resource Council members in Pavillion, Deaver, and Clark, Wyoming, who are severely impacted by contamination from oil and gas development. I also live with it," said Deb Thomas, Powder River Basin Resource Council organizer and resident of Clark, Wyoming. "For those of us who fear our health is being affected by this industry, disclosure of the chemicals and constituents used during development is

extremely important. We need to know what we're being exposed to so that physicians can diagnose and treat our health problems and we can make informed decisions about staying in the communities we live in. It is a human right to know what toxic materials are being stored and used where we live and work.”

¹³ EPA Response to Petition at page 5.

¹⁴ Ibid.

¹⁵ U.S. EPA. Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States (*Final Report*). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-16/236F, 2016, at ES-3.

¹⁶ Ibid. at ES-45.

¹⁷ Ibid.

¹⁸ Ibid at ES-45, 46.

¹⁹ Physicians, Scientists, and Engineers for Healthy Energy, *Toward and understanding of the environmental and health impacts of shale gas development: an analysis of peer reviewed scientific literature, 2009-2015*. Science summary, April 2016. For a complete overview of the scientific literature, see PSE's citation database at https://www.zotero.org/groups/pse_study_citation_database/items

²⁰ Ibid.

²¹ Kassotis CD, Tillitt DE, Lin C-H, McElroy JA, Nagel SC. “Endocrine-Disrupting Chemicals and Oil and Natural Gas Operations: Potential Environmental Contamination and Recommendations to Assess Complex Environmental Mixtures.” *Environmental Health Perspectives* 2015.

²² Assessment of Joint Toxic Action of Chemical Mixtures. Guidance Manual. Agency for Toxic Substances and Disease Registry. 2004. Available at www.atsdr.cdc.gov/interactionprofiles/ipga.html

²³ 82 Fed Reg. 1651-1656, January 6, 2017.

²⁴ Earthworks, February 2017. Report, FLIR videos, and supporting information available at <http://earthworksaction.org/permittedtopollute>.

²⁵ *Pennsylvania Bulletin* notice for Plan Approval 10-368E from DEP to MarkWest, December 10, 2016.

²⁶ Based on 2014 Effects Screening Levels established by the Texas Commission on Environmental Quality to determine potential health exposures during air permitting. See <https://www.tceq.texas.gov/toxicology/esl>.

²⁷ Based on 2014 Effects Screening Levels established by the Texas Commission on Environmental Quality to determine potential health exposures during air permitting. See <https://www.tceq.texas.gov/toxicology/esl>.

²⁸ Case studies #1 (Judy) and #6 (Carr), *Blackout in the Gas Patch: How Pennsylvanians are Left in the Dark on Health and Enforcement*, Earthworks 2014.

²⁹ Southwest Pennsylvania Environmental Health Project, “Summary of Minisink Monitoring Results,” 2015.

³⁰ Agency for Toxic Substances and Disease Registry, Health consultation/Exposure Investigation, Brigich Compressor Station, Washington County PA, 2016.