



1000 Vermont Avenue, NW  
Suite 1100  
Washington, DC 20005  
main: 202-296-8800  
fax: 202-296-8822  
[www.environmentalintegrity.org](http://www.environmentalintegrity.org)

## ATTACHMENT 1: METHODOLOGY

To derive the emissions data, we used the following methodology: We compiled emissions data from six of the states most involved in the industry: Colorado, Louisiana, North Dakota, Pennsylvania, Texas, and Wyoming. We drew the data from EPA's two most recent—2008 and 2011—National Emissions Inventories,<sup>1</sup> as well as annual emissions data from state databases between 2010 and 2012, where available.<sup>2</sup> As discussed in the cover letter, we also included data from Pennsylvania's 2011 Unconventional Natural Gas Emissions Inventory because the state did not include that data as part of its overall state emissions inventory.<sup>3</sup>

Next, we narrowed the national and state emissions inventories to emissions of representative TRI-listed chemicals, based on their prevalence in data and documents we reviewed in drafting the Petition. Emissions inventories that did not provide data for a specific chemical are noted in parentheses next to the chemical.

- 2,2,4-Trimethylpentane (NEI),
- Benzene,
- Ethylbenzene (NEI),
- Ethylene (CO, ND, PA, NEI),
- Ethylene Glycol (CO, ND, NEI),
- Formaldehyde,
- Hexane,
- Methanol (NEI),
- Toluene, and
- Xylenes.

We then filtered for facilities within the oil and gas extraction industry by using Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) codes, where indicated.<sup>4</sup> For facilities whose NAICS or SIC codes were not indicated, particularly in Louisiana, we researched each facility using data available in order to determine whether it was an industry facility.

We then selected facilities if they emitted more than 10,000 pounds of one of these chemicals in at least one year.<sup>5</sup> From there, we selected facilities for inclusion in Attachment 2 if they emitted more than 10,000 lbs in the two most recent years for which data was available.<sup>6</sup> In most cases, this meant 2010 and 2011 or 2011 and 2012 within a state's emissions inventories. In a few cases, we used data from the two most recent National Emissions Inventories (2008 and

2011), as facilities in certain states reported the release of TRI-listed chemicals only in that data source.

We made unit conversions (e.g., short tons to pounds) where necessary. Additionally, we calculated the annual emissions when point-level rather than facility-level data was provided; that is, we aggregated emissions on the facility level when an inventory did not.

---

<sup>1</sup> EPA, 2008 National Emissions Inventory, Version 3: Facility-Level by Pollutant (2013), <http://www.epa.gov/ttn/chief/net/2008inventory.html> (accessed Nov. 2013); EPA, 2011 National Emissions Inventory, Version 1: Facility-Level by Pollutant (2013), <http://www.epa.gov/ttn/chief/net/2011inventory.html> (accessed Nov. 2013)

<sup>2</sup> Colorado Dep't of Public Health, Air Pollution Control Div., Emissions Inventory Data 2010-2012 (on file with EIP); Louisiana Dep't of Env'tl. Quality, Emissions Inventory Data Sets 2010-2011 (Jan. 2013), <http://www.deq.louisiana.gov/portal/DIVISIONS/AirPermitsEngineeringandPlanning/EmissionsInventoryHomepage/EmissionsInventoryDataSets.aspx> (accessed Nov. 2013); North Dakota Dep't of Health, Air Quality, Emissions Inventory 2010-2012, <http://www.ndhealth.gov/AQ/EmissionInventory.htm> (accessed Nov. 2013); Pennsylvania Dep't of Env'tl. Prot., Emissions Inventory: Facility Level 2010-2012 (on file with EIP); Texas Comm'n on Env'tl. Quality, Emissions Inventory Data 2010-2011 (on file with EIP). For additional information on the databases, *see* Attachment 3.

<sup>3</sup> *See* Pennsylvania Dep't of Env'tl. Prot., 2011 Unconventional Natural Gas Emissions Inventory (on file with EIP).

<sup>4</sup> As we stated in the Petition, EPA identified the oil and gas extraction industry by SIC Code 13 when it last considered addition of the industry in 1996. *See* Addition of Facilities in Certain Industry Sectors; Toxic Chemical Release Reporting; Community Right-to-Know, 61 Fed. Reg. 33,588, 33,592 (June 27, 1996). Since then, the NAICS codes have begun to supplant SIC codes, and the industry is also identified by at least seven NAICS codes: 211111 (Crude Petroleum and Natural Gas Extraction), 211112 (Natural Gas Liquid Extraction), 213111 (Drilling Oil and Gas Wells), 213112 (Support Activities for Oil and Gas Operations), 238910 (Site Preparation Contractors), and 541360 (Geophysical Surveying and Mapping Services). *See* NAICS Ass'n, Free NAICS Look Up, <http://www.naics.com/search.htm>.

<sup>5</sup> *See* Attachment 3.

<sup>6</sup> *See* Attachment 2.