



The Antarctic ozone hole on Sept. 24, 2006. Image: NASA

Ozone Layer Recovery Is Being Undermined by Pollution From U.S. Companies



[Sharon Lerner](#) January 18 2020, 4:30 a.m.

The global response to the “ozone hole,” as it came to be known in the 1970s, has long been held up as a [model](#) for environmental problem-solving — and the hope that we might yet be able to fix the climate crisis. After scientists realized that chemicals used for cooling and in aerosol sprays were causing the Earth’s protective ozone layer to thin, threatening to cause vast increases in cancers and other diseases, countries around the world came together to fix it. Even the companies that made and sold the chemical culprits — chlorofluorocarbons, or CFCs — participated in the Montreal Protocol, the international treaty that began phasing them out in 1989. Since then, the ozone layer has partially recovered.

The international commitment to eliminating ozone-depleting chemicals has held so firm that in 2018, when some Chinese factories were discovered to be using a substance banned by the treaty known as CFC-11, they were met with condemnation from the U.S. and other countries. Erik Solheim, head of the United Nations Environment Program, which oversees the Montreal Protocol, [called](#) the release of the ozone-depleting substance “nothing short of an environment crime which demands decisive action.” China quickly addressed the problem.

Yet evidence has recently emerged that U.S. companies are also releasing ozone-depleting chemicals. While the ozone layer is rebounding overall, scientists have [observed](#) decreasing levels of the gas in certain areas. Chemicals used for everything from fracking to cooling appear to be the culprits, according to [comments](#) the nonprofit [Environmental Investigation Agency](#) submitted to the Environmental Protection

Agency in December. The chemical pollution, some of which is coming from the U.S., EPA records show, has already delayed progress on the ozone layer. The resulting setback appears to be worse in highly populated [southern latitudes](#), where it could cause the most damage. Continued emissions of the chemicals could delay the healing of the ozone layer by up to 30 years, according to a [2017 article](#) published in Nature Communications.

Despite the threat, the EPA has not considered impacts on ozone in initial phases of its assessment of 14 chemicals with ozone-depleting potential now being conducted under the Toxic Substances Control Act. Asked about the decision, an EPA spokesperson wrote in an email that “because ozone depletion risks are adequately assessed and effectively managed under the Clean Air Act, EPA does not expect to include ozone-depletion potential in risk evaluations” of three of the chemicals. The agency response did not address the other 11 chemicals under scrutiny.

Loopholes and Untracked Emissions

Both the Clean Air Act and the Montreal Protocol do regulate some of these short-lived chemicals that erode the ozone layer. But they make an exception when the chemicals are byproducts or used as feedstock for making other products, a loophole that may explain why some of them are still accumulating in the atmosphere more than 30 years after the treaty took effect.

Carbon tetrachloride, for instance, a potent ozone-depleting chemical that was used to make CFCs, is tightly regulated under the treaty. Nevertheless, the amount of the chemical in the atmosphere has been [rising](#). While the exact sources of the pollution have been treated as a [mystery](#), some of the discrepancy appears to be due to the increasing use of carbon tetrachloride as a feedstock for other chemicals, which the EPA has [acknowledged](#) is its main use. Between 2012 and 2018, U.S. companies released 1.3

million pounds of the chemical into the air. Among the biggest emitters are a Dover Chemical plant in Ohio and two plants in Geismar, Louisiana — one owned by [Rubicon](#) and the other by [Occidental](#) — according to an analysis of EPA data by the consulting firm [Material Research](#).

Asked about Rubicon’s emission of carbon tetrachloride, Mark Dearman, the company’s general manager, said that “We’re currently operating under our air permits under the EPA and the Department of Environmental Quality of the state of Louisiana and we’re constantly working year on year to reduce our emissions and be good environmental stewards.” Occidental and Dover Chemical did not respond to requests for comment.

Levels of another ozone-depleting chemical, methylene chloride, are also on the rise, climbing 8 percent per year between 2000 and 2012, according to the most recent [analysis](#). Methylene chloride was not regulated under the treaty because it lasts for only a short time in the atmosphere and so was once thought to have a minimal impact on ozone. But its release is responsible for much of the delay in the recovery of the ozone layer, according to the Nature Communications article.

U.S. companies, including the SI Group, 3V Sigma, and CR Bard, all of which are based in South Carolina, released 19.8 million pounds of methylene chloride into the air between 2012 and 2018, according to company reports to the EPA. In an emailed statement, SI Group spokesperson Melissa Quesnel wrote, “When methylene chloride is in use, we have engineering controls in place to recover and recycle as much as possible to limit our emissions, complying with all emission regulations.” 3V Sigma and CR Bard did not respond to The Intercept’s inquiries for this article.

But the key to understanding the chemical’s increasing levels may be what’s not tracked by the agency, since the industrial emissions of

methylene chloride reported by the EPA are dwarfed by the amounts scientists estimate is in the atmosphere.

The gap may be partially explained by the chemical's use in oil and gas production, one of the sectors whose emissions of these substances aren't disclosed in publicly available EPA data. In addition to being used to make pesticides and plastic, methylene chloride is used in the "oil and gas drilling, extraction, and support activities sector," according to a [2017 EPA report](#), and has been found in the air near [fracking wells](#). As the number of fracking wells has increased, so have methylene chloride levels in the atmosphere.

Ironically, both chemicals are also used as feedstocks to make the [next generation of](#)

[coolants](#), which were introduced to replace CFCs and other coolants because they won't destroy the ozone layer.

Nevertheless, the U.S. companies that release the chemicals undermining one of the world's biggest environmental achievements have so far faced little pressure to stop. "China was bashed internationally for the production of CFC-11," said Avipsa Mahapatra, who leads the Environmental Investigation Agency's climate campaign. The U.S. and other countries pushed hard on China to stop releasing substances like CFC-11, which erode ozone, Mahapatra continued. "But even in America substances that damage the ozone layer are being released."