Minnesota Pollution Control Agency Regulation and Oversight of Water Gremlin

SPECIAL REVIEW
February 2021

OFFICE OF THE LEGISLATIVE AUDITOR
STATE OF MINNESOTA

State of Minnesota
Office of the Legislative Auditor

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OFFICE OF THE LEGISLATIVE AUDITOR
STATE OF MINNESOTA • James Nobles, Legislative Auditor

February 2021

Members of the Legislative Audit Commission:

In response to legislative requests and public concerns, the Office of the Legislative Auditor examined how well the Minnesota Pollution Control Agency (MPCA) regulated and monitored pollution risks posed by the Water Gremlin Company of White Bear Township.

We found significant weaknesses in both MPCA's permitting and enforcement activities, which we enumerate in this report.

We received full cooperation from MPCA as we conducted our review and prepared this report.

Sincerely,

Joel Alter
Director, Special Reviews

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THE GREAT SEAL OF THE STATE OF MINNESOTA
L'ETOILE DU NORD
1858

Summary

In 2019, the Minnesota Pollution Control Agency (MPCA) entered into a stipulation agreement with the Water Gremlin Company related to alleged longstanding violations of the company's air quality permit. The company agreed to abide by various requirements specified in the agreement and pay a $4.5 million penalty.

We concluded that there were actions MPCA could have—and should have—taken before 2019 to properly regulate Water Gremlin. We cannot be certain that such actions would have prevented the problems identified in the stipulation agreement or enabled MPCA to intervene sooner, but there were missed opportunities on MPCA's part.

First, MPCA should have done more to ensure that Water Gremlin had a timely, effective air quality permit. Water Gremlin first applied for an air quality permit from MPCA in 1995, at a time when the company reported to MPCA that its actual emissions of trichloroethylene—a hazardous air pollutant—were 23 times a federal threshold defining a "major source" of pollution. MPCA did not respond to this application, and the company received its first permit (in 2000) only after it submitted another application in 1999. Thus, for several years, MPCA simply did not regulate Water Gremlin's hazardous air emissions.

In addition, MPCA approved an amended air quality permit for Water Gremlin in 2002 that contained some inadequate provisions that remained in effect for many years. The amended language did not recognize that Water Gremlin would be re-using trichloroethylene and only placed explicit limits on the company's purchases—not overall use—of this chemical. In addition, the 2002 permit amendment required Water Gremlin to conduct an initial performance test (which occurred in April 2002) to ensure that its newly installed pollution control equipment was controlling at least 95 percent of emissions, but MPCA did not require subsequent performance tests, even after the equipment had to be repaired and rebuilt.

Broader issues, such as the absence of state rules governing pollutants called "air toxics" and the MPCA's backlog of air quality permit applications, might also have contributed to problems with the timeliness and effectiveness of Water Gremlin's permit. These are decades-old issues that merit renewed attention from MPCA.

Furthermore, MPCA compliance and enforcement staff could have done more to properly monitor Water Gremlin and identify potential violations of its permit. MPCA conducted air quality inspections of the company in 2004, 2012, and 2017, but the eight-year period between the first and second inspections did not comply with federal requirements. MPCA enforcement staff also did not regularly review the content of the company's federal and state emission reports, which could have alerted them to the company's practice of re-using trichloroethylene and its failure to report emissions from certain sources. In addition, MPCA did not levy a penalty against Water Gremlin for self-disclosed and publicly reported emissions in 2000 through 2002 that far exceeded the limits of the 2000 permit; this preceded the extended period of noncompliance that was addressed in the 2019 stipulation agreement.

MPCA cited Water Gremlin in 2019 for longstanding hazardous waste violations, but failure to detect these problems earlier may have reflected ambiguity about agency responsibilities for monitoring and enforcing hazardous waste practices. In the Twin Cities metropolitan area, MPCA shares hazardous waste enforcement duties with counties. MPCA has a joint powers agreement with only one county (Hennepin) that explicitly delineates the respective state-local responsibilities. There was no such MPCA agreement with Ramsey County (where Water Gremlin's facility is located), and MPCA's interpretation of some regulatory requirements at Water Gremlin differed from that of Ramsey County. Ramsey County conducted all hazardous waste inspections of Water Gremlin prior to 2019.

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Introduction

In 2019, the Minnesota Pollution Control Agency (MPCA) entered into a "stipulation agreement" with the Water Gremlin Company, located in Ramsey County. A stipulation agreement is a negotiated settlement between MPCA and a regulated entity. MPCA concluded that the company had been violating its air quality permit since at least 2002. The main emission of concern—trichloroethylene, or TCE—has the potential to cause significant human health effects. During 2019, other issues came to light—specifically, Water Gremlin's hazardous waste management practices and the presence of lead in the blood of some employees' children—that also created concerns about the company.

In 2019, some legislators and members of the public asked our office to conduct a "special review" of MPCA's handling of the Water Gremlin case. We agreed to do so, and our review addressed the following questions:

- **To what extent did MPCA exercise appropriate regulatory oversight of Water Gremlin in the years leading up to the stipulation agreement?**

- **Should MPCA have detected sooner than it did that Water Gremlin was not complying with regulatory requirements and permit conditions?**

Our review focused largely on MPCA's issuance of an air quality permit to Water Gremlin and the agency's enforcement of the permit conditions. But, in the course of looking at air quality issues, we also became aware of some issues related to hazardous waste regulation that we address in this report.

In 2019 and 2020, MPCA provided our office with all of its records related to Water Gremlin. This included historical documents related to permits, monitoring, and enforcement, including correspondence on these issues. It is worth noting that the documents we received and reviewed probably did not represent all documents that were ever in MPCA's possession related to Water Gremlin. For example, the e-mail accounts of former MPCA employees are typically deleted 30 days after they have left the agency.[1]

There are several topics our special review did not examine. We did not evaluate Water Gremlin's legal liability for any violations of pollution control regulations. We did not independently examine the health impact of public exposures to pollutants emitted by Water Gremlin, although we discuss state regulations and research literature that pertain to these impacts. We did not critique the specific terms of the stipulation agreement MPCA entered into in March 2019 with Water Gremlin. We did not evaluate the appropriateness of MPCA's actions subsequent to 2019. We did not evaluate actions of the Minnesota Department of Health, Minnesota Department of Labor and Industry, or counties that were pertinent to Water Gremlin. Finally, some residents living near Water Gremlin suggested that our office consider whether state officials should have referred the Water Gremlin case to the Ramsey County District Attorney for possible criminal charges; we did not examine this.

[1] MPCA retains documents and data in accordance with the document retention policies of the agency and the State of Minnesota. MPCA can ask the Office of Minnesota Information Technology Services to retain e-mail accounts of former employees for longer than 30 days—for example, if an account may have data that would be relevant to pending or anticipated litigation.


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Chapter 1: Background

This chapter provides background information on the Water Gremlin Company and the state agencies that play a role in pollution assessment and regulation. The chapter also discusses actions taken since 2019 by the Minnesota Pollution Control Agency (MPCA), other state agencies, and the courts in response to alleged or actual violations by Water Gremlin of pollution laws and regulations.

KEY FINDINGS IN THIS CHAPTER

- **In response to Water Gremlin's longstanding violation of its air quality permit, the company and MPCA entered into a 2019 agreement that placed new requirements on the facility and imposed a large fine.**
- **Water Gremlin's failure to properly manage lead dust and hazardous waste led to shut downs of certain industrial operations, worker and family exposures, and soil and groundwater contamination.**

Water Gremlin Company

The Water Gremlin Company was incorporated in 1949. At that time, it began manufacturing fishing sinkers in a building the company has described as an "old chicken shack" on the White Bear Township farm of its founder, Robert Ratte.[1] The company introduced the Rubbercor sinker in 1949; the sinker's lead sleeve covered a rubber interior that was intended to prevent damage to fishing lines. By 1973, Water Gremlin was reportedly the world's largest manufacturer of fishing sinkers.

Over time, the company expanded the size of its facilities at the White Bear Township site. The company's "North Campus"—where most of the manufacturing occurs—has about 90,000 square feet of building space.[2] The "South Campus" has an 84,000 square-foot building that is mostly used for warehouse purposes.

Water Gremlin still produces fishing sinkers, but its manufacturing activities have diversified over the years. Of particular note, the company today describes itself as "the world's technological and market leader in lead battery terminals."[3] Terminals are the electrical connections (positive or negative) of batteries, and Water Gremlin's terminals are used in vehicle and construction equipment batteries, for example. Water Gremlin also coats and seals terminals with various materials to prevent corrosion and keep battery acid from leaking.

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[1] Water Gremlin, "About the Water Gremlin Company," https://wgupdates.com/about-us/, accessed October 14, 2020.

[2] The manufacturing activities include die casting, hot melt molding and extrusion, cold forming, coining, gravity casting, and coating.

[3] Water Gremlin, http://www.watergrem.com/, accessed October 14, 2020.

State Agency Responsibilities

Our review focused primarily on regulation and oversight of Water Gremlin by one state agency, the Minnesota Pollution Control Agency (MPCA). Below, we summarize MPCA's relevant responsibilities, as well as the role played by a second agency—the Minnesota Department of Health—in assessing pollution risks.

Minnesota Pollution Control Agency

The Legislature created MPCA in 1967.[4] This new agency assumed the water pollution regulation powers and duties of the Interagency Water Pollution Control Commission.[5] The 1967 legislation also authorized MPCA to regulate air pollution, a new state responsibility. In 1969, the Legislature gave MPCA authority to regulate solid waste in Minnesota, and in 1974, the Legislature established MPCA's hazardous waste regulatory program.[6]

MPCA's top administrator (called a director in 1967, and later called a commissioner) was appointed by the governor with the consent of the Minnesota Senate. But, for many years, the agency was defined in law as being the nine-member governing board—appointed by the governor with the consent of the Senate—that directed and oversaw the work of the MPCA staff.[7] In 2015, the Legislature abolished the MPCA board.[8] As a result of this change, full responsibility for the direction and management of MPCA now rests with the agency's commissioner.

In the area of air quality, which was the primary focus of our review, MPCA is authorized in state law to adopt standards and rules for the prevention, abatement, or control of air pollution.[9] In addition, the U.S. Environmental Protection Agency (EPA) has delegated to MPCA the authority to implement the federal Clean Air Act on its behalf. Pursuant to this delegation, MPCA is required to adopt federal air quality regulations into state rules. State law also authorizes MPCA to issue permits that govern the emission of air contaminants, and MPCA is authorized to enforce statutory provisions regarding air pollution through orders, stipulation agreements, investigations, and other actions.[10]

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[4] *Laws of Minnesota* 1967, Chapter 882, codified as amended at *Minnesota Statutes* 2020, Chapter 116.

[5] The commission's administrative, technical, and investigative work was largely done by the Minnesota Department of Health.

[6] *Laws of Minnesota* 1969, Chapter 1046, codified as amended at *Minnesota Statutes* 2020, Chapter 116; and *Laws of Minnesota* 1974, chapter 345, secs. 1-5, codified as amended at *Minnesota Statutes* 2020, Chapter 116.

[7] The MPCA Board originally had seven members; the 1969 Legislature increased the size to nine. The MPCA director (and later commissioner) was one of the members of the board.

[8] *Laws of Minnesota* 2015, chapter 4, art. 4, sec. 114.

[9] *Minnesota Statutes* 2020, 116.07, subds. 2(a) and 4(a).

[10] *Minnesota Statutes* 2020, 116.07, subd. 9.

Minnesota Department of Health

While MPCA is the state's primary regulatory agency for pollution, the Minnesota Department of Health (MDH) also plays an important role in assessing environmental health risks.

MDH has developed three categories of "air guidance values"—shown in the box at the right—based on evaluations of the risks to humans from exposure to air-based chemicals. According to MDH, all three categories of air guidance values indicate "a concentration of a chemical that is likely to pose little or no risk to human health."[11] MDH establishes these values for use by state agencies, industry, stakeholders, and the general public, but MDH does not enforce the thresholds it sets.

Types of MDH "Air Guidance Values"

Health Risk Values: Concentrations of a chemical in air that are likely to pose little or no risk to human health, as promulgated in state rules in 2002.

Health-Based Values: Guidance developed after undergoing a comprehensive chemical review of available toxicity studies. Not promulgated in rules.

Risk Assessment Advice: Guidance that may be less conclusive than health-based values due to more limited evidence on toxicity or a less rigorous review of the evidence. This guidance may also be site-specific or condition-specific. Not promulgated in rules.

In 1994, MPCA and MDH developed an initial agreement that assigned to MDH the responsibility for developing "health risk values" for toxic air emissions. In 2002, MDH promulgated rules for health risk values of chemicals in "ambient" air—that is, the air outside of buildings.[12] Since that time, MDH has issued health-based values and risk assessment advice that have not gone through a public rulemaking process. An MDH toxicologist told us that the state's rulemaking process sometimes has difficulty keeping up with rapid changes in scientific findings, so MDH has issued technical guidance outside of the rulemaking process that can assist agencies such as MPCA. MDH specifies air guidance values that are intended to protect individuals with various levels of exposure, ranging from acute exposures (over a period of 24 hours or less) to chronic exposures (over a period of more than eight years).

Trichloroethylene (TCE) Emissions

Until 2019, Water Gremlin used a chemical in its battery terminal coating processes called trichloroethylene (TCE). This section discusses the health risks of TCE and how Water Gremlin's TCE emissions resulted in a stipulation agreement with MPCA that included a large penalty.

[11] Minnesota Department of Health, "Air Guidance Values," https://www.health.state.mn.us/communities/environment/risk/guidance/air/table.html, accessed September 16, 2020.

[12] MDH's rules for health risk values for chemicals in ambient air are in *Minnesota Rules* 4717.8000 through 4717.8500.

Health Risks

TCE is a man-made chemical that has been classified by EPA as carcinogenic to humans "by all routes of exposure" (including inhalation, ingestion, and skin exposure).[13] According to EPA, there is "convincing" evidence of TCE causing kidney cancer in humans, "strong" evidence of its link to non-Hodgkin's lymphoma in humans, and more limited evidence of its association with various other types of cancer.[14] According to MDH,

> Animal studies show TCE exposure in early pregnancy may increase the risk of certain heart defects. In most cases, this risk is thought to be extremely low. TCE may also affect the immune system, including changes to the developing immune system in early life. TCE may also harm the central nervous system, kidney, liver, and male reproductive system.[15]

TCE is categorized as a "hazardous air pollutant" by the federal Clean Air Act, a "toxic pollutant" by the federal Clean Water Act, and a "volatile organic compound" by federal regulations.

MDH specified safe levels of acute exposure to TCE nearly 20 years ago, and it has established stricter guidance on TCE exposure since that time. In 2002, MDH adopted state rules that said exposure to TCE levels of 2,000 or fewer micrograms per cubic meter of air for a one-hour period represented little or no risk to people.[16] In 2007, MDH issued guidance (not in state rules) that said the safe level of lifelong (or "chronic") exposure to TCE is three or fewer micrograms per cubic meter of air.[17] In 2013, MDH issued stricter guidance (not in state rules) which said that exposure to two or fewer micrograms per cubic meter for all durations is generally safe.[18] In 2018, MDH updated its guidance on TCE (again, not in state rules); the department reiterated that exposure

Over time, the Department of Health has issued more stringent guidance regarding safe levels of exposure to TCE:

- **2002: 2,000 micrograms for acute (one-hour) exposure**
- **2013: 2 micrograms for exposure at levels more frequent than acute**

These thresholds were meant to show amounts of TCE per cubic meter of air that posed little or no risk.

[13] U.S. Environmental Protection Agency, *Trichloroethylene; CASRN 79-01-6, Integrated Risk Information System (IRIS), Chemical Health Summary* (2011), 23.

[14] *Ibid*.

[15] Minnesota Department of Health, *Guidance for Trichloroethylene (TCE) in Air* (St. Paul, November 2, 2018), 1.

[16] This acute "health risk value" remains today in state rules. (*Minnesota Rules*, 4717.8200, DD, accessed September 28, 2020.)

[17] The 2007 guidance was classified by MDH as a "health-based value." An MDH manager told us this guidance was probably posted on the department's website when it was issued.

[18] The 2013 guidance was classified by MDH as "risk assessment advice," and MDH said it was published on the MDH website.

should generally not exceed two micrograms of TCE per cubic meter of air for durations ranging from short-term (1 to 30 days) to multi-year periods.[19] According to MDH,

> [Health-based values] are much lower than the regulatory limits set for workplaces where the chemical is used. Breathing an amount of TCE that is above the [health-based value] does not mean health effects will occur; however, the risk for health effects increases as the level of exposure increases. When [health-based values] are exceeded, MDH recommends taking steps to reduce or avoid exposures.[20]

2019 Stipulation Agreement

Water Gremlin's air emissions have been subject to federal and state requirements. As we discuss in Chapter 2, Water Gremlin has had an air quality permit from MPCA since 2000.[21]

In July 2018, Water Gremlin voluntarily submitted to MPCA an "environmental audit" report.[22] According to state law, an environmental audit is "a systematic, documented, and objective review by a regulated entity of one or more facility operations and practices related to compliance with one or more environmental requirements and, if deficiencies are found, a plan for corrective action."[23] Organizations that undertake environmental audits may—in certain circumstances specified in law—not be subject to state enforcement actions for violations identified.[24] Water Gremlin's audit self-identified 11 violations of environmental regulations. For example, the audit said:

> [T]he [volatile organic compound] and [hazardous air pollutant] emission calculations included in the [company's] emissions inventories completed pursuant to air permit provisions did not include the recovered solvent from the air pollution control equipment.
>
> As the air emissions inventory report for [the company's main pollution control equipment] relies on 95% emissions control, which is not

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[19] A current Water Gremlin official and a former one expressed concern to us that companies in Minnesota using TCE did not receive notification when the Department of Health adopted stricter guidance on safe levels of TCE.

[20] Minnesota Department of Health, *Guidance for Trichloroethylene (TCE) in Air* (St. Paul, November 2, 2018), 1.

[21] Water Gremlin has not discharged pollutants from a "point source" into surface waters, so it has not been required to obtain a water pollution discharge permit from MPCA.

[22] Such audits are authorized by *Minnesota Statutes* 2020, 114C.20-114C.40. *Minnesota Statutes* 2020, 114C.22, outlines the qualifications of facilities to participate in environmental audits.

[23] *Minnesota Statutes* 2020, 114C.21, subd. 4.

[24] *Minnesota Statutes* 2020, 114C.24. The law requires MPCA to waive penalties against the reporting facility in certain instances, but it specifies exceptions to such waivers. For example, MPCA may pursue enforcement actions if "a violation caused serious harm to, or presents an imminent and substantial endangerment to, human health or the environment" (subd. 3(2)(iii)) or "a violation has resulted in a substantial economic benefit which gives the violator a clear advantage over its business competitors" (subd. 3(2)(v)).

> currently met and may not have been met historically, air emissions of [volatile organic compounds] appear to have been under reported….
>
> The [company's] air permit requires that the bead activated carbon adsorb/desorb/condenser emission control system be operated at all times during which the associated emission units are in operation. [This equipment] was not in operation at the time of the audit….[25]

In the audit, Water Gremlin stated an objective of reducing its TCE use by 63.5 tons (presumably per year).

Following Water Gremlin's submission of the audit, MPCA made additional requests for information from Water Gremlin to help it better assess the nature of the violations. In November 2018, MPCA sent Water Gremlin an "alleged violations letter," which said MPCA might initiate an enforcement action against the company because of the economic benefit the company gained from the violations listed in the environmental audit.[26]

On January 11, 2019, MPCA received information from Water Gremlin that helped the agency better understand the extent and duration of the company's excess emissions. MPCA held a teleconference meeting with company representatives on January 14, 2019, to discuss its concerns resulting from the new information, and the company agreed to voluntarily stop its coating operations that day.[27]

In February 2019, Water Gremlin notified MPCA of its voluntary commitment to permanently discontinue use of TCE in its battery terminal coating operations. The company said it would only use solvents that did not contain materials classified by EPA as hazardous air pollutants, and that it had removed all TCE solvent from the facility.

In March 2019, MPCA entered into a stipulation agreement with Water Gremlin for alleged violations of the company's air quality permit. The agreement included a significant financial penalty.

The agreement was intended to address Water Gremlin's purported violations by setting forth actions that Water Gremlin would agree to undertake. In signing the agreement, Water Gremlin did not admit that the violations alleged by MPCA in the agreement had occurred, but it agreed to waive its rights to contest the alleged violations if such violations continued in the future.

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[25] Wenck [Environmental Consulting and Engineering], "Exhibit A, Public Version, Water Gremlin Environmental Audit Program Report Inventory, Violations and Corrective Actions," prepared for Water Gremlin (June 28, 2018), 2-3.

[26] MPCA told us that it did not "accept" the environmental audit. Consequently, MPCA said, the company was not entitled to the penalty waiver authorized by law, and MPCA notified the company in November 2018 that it might be subject to penalties.

[27] *Minnesota Statutes* 2020, 116.11, gives MPCA authority to issue an "emergency order" resulting in pollution discontinuation or abatement, but such an order was not necessary in this case because Water Gremlin agreed to stop its coating operations.

The agreement said Water Gremlin had been emitting more than 10 tons of TCE annually since at least 2002, according to MPCA calculations. In fact, MPCA said, Water Gremlin had emitted more than 100 tons of TCE in the first 11 months of 2018, which was more than 10 times the company's authorized maximum annual TCE emissions (10 tons). With emission levels above the authorized limit, Water Gremlin should have been operating under the more stringent requirements of a federal permit, rather than a state permit.

What is a Stipulation Agreement?

"Stipulation agreements are negotiated settlements used for more significant environmental violations or when violations are serious enough to warrant a civil penalty greater than $20,000 and/or a longer period of time is needed to complete corrective actions. Stipulation agreements are a negotiated settlement between the MPCA and the regulated party. These agreements also contain penalties which are triggered if the requirements of the agreement are not met."

— Minnesota Pollution Control Agency

In the stipulation agreement, Water Gremlin agreed to pay $4.5 million to MPCA "as a civil penalty for the violations alleged" in the agreement.[28] MPCA's manager of air quality compliance told us that this penalty amount is the largest penalty MPCA has ever imposed on its own upon a regulated party (that is, without EPA's participation in an enforcement action).[29] In addition, Water Gremlin proposed—and MPCA accepted the proposal—to perform at least $1.5 million in "supplemental environmental projects," such as planting trees in the community and providing technical assistance to help other companies reduce their use of TCE.[30]

The stipulation agreement also required Water Gremlin to:

- Submit revised emission inventory reports for 2002 to 2017.
- Submit a plan for replacing the key piece of equipment the company had been using to control volatile organic compound emissions.
- Implement an "alternative operating scenario" before resuming coating operations, following (1) submission to MPCA of an application for a new air quality permit that would limit coating operations to solvents not classified as hazardous air pollutants and (2) MPCA approval of an air quality monitoring plan and company installation of new equipment to monitor outdoor air quality.
- Limit its use of a TCE replacement solvent and limit emissions from that solvent, as specified in the agreement.
- Apply to enter into an MPCA remediation program as a "voluntary responsible party."

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[28] Minnesota Pollution Control Agency, "Stipulation Agreement: In the Matter of Water Gremlin Company" (March 1, 2019), 16.

[29] There had previously been a larger financial penalty against Koch Petroleum Group, but MPCA said that was an agreement jointly administered by MPCA and EPA.

[30] As noted in the next section, Water Gremlin had identified a replacement solvent for its facility by the time the stipulation agreement was signed.

MPCA told us that, in the wake of the 2019 Water Gremlin stipulation agreement, the agency identified all TCE-using companies in Minnesota with air quality permits, and it developed a schedule to transition them to alternative chemicals. MPCA said it is currently evaluating the potential for transitioning permittees away from certain other toxic chemicals. In 2020, the Legislature passed—and the Governor signed—a bill that will ban TCE in MPCA-permitted facilities, with certain exceptions.[31]

Replacement Solvent for TCE

The March 2019 stipulation agreement indicated that Water Gremlin had identified a replacement solvent for TCE in its production process. As a result, the agreement said, Water Gremlin "has voluntarily committed to eliminating the use of TCE in its facility."[32] Water Gremlin replaced TCE with a solvent called FluoSolv WS. The main component of FluoSolv WS is trans-1,2-dichloroethylene, a volatile organic compound also known as tDCE.[33] According to MPCA, all releases of tDCE from the company's coating processes were to occur through the facility's air emissions "control stack," which was subject to controls established in the company's air quality permit.

But, in June 2019, Water Gremlin was notified by its environmental testing consultant that the company was releasing tDCE to the soil vapor beneath the facility and, as MPCA said later, "possibly into adjacent areas rather than through Water Gremlin's control stack as required."[34] MPCA said that Water Gremlin did not immediately notify the agency of this under-facility release.[35] On August 14, 2019, MPCA requested Water Gremlin to immediately cease coating operations using tDCE until a corrective measure was implemented to prevent its release into the soil. But Water Gremlin continued its operations using tDCE, according to MPCA. As a result, MPCA issued an order—on August 22, 2019—for Water Gremlin to cease all solvent-based coating operations until the company implemented corrective measures to prevent below-facility emissions. In January 2020, MPCA issued an order that set forth the conditions under which Water Gremlin could resume its coating operations.

Lead and Hazardous Waste Issues

Our report focused primarily on MPCA's regulation and oversight of Water Gremlin's air emissions, but we also considered the division of regulatory responsibilities between MPCA and counties for hazardous waste (including lead); we discuss that issue in Chapter 3. Waste products are considered hazardous in Minnesota if they are ignitable,

[31] *Laws of Minnesota* 2020, Chapter 84. The ban takes effect June 1, 2022.

[32] Minnesota Pollution Control Agency, "Stipulation Agreement: In the Matter of Water Gremlin Company" (March 1, 2019), 16.

[33] tDCE is a highly flammable liquid with a harsh odor. In late 2019, EPA designated tDCE as a high priority for risk evaluation, and it drafted a plan for such an evaluation in April 2020.

[34] Minnesota Pollution Control Agency, "Administrative Order: In the Matter of Water Gremlin Company" (August 22, 2019), Item 12.

[35] Water Gremlin was supposed to notify MPCA of the release within two working days. MPCA said the notification did not occur until 40 days after the company learned of the contamination.

corrosive, reactive, toxic, or lethal, or if they are classified as oxidizers.[36] Because our report examines the division of authority for hazardous waste regulation, we discuss here—for background purposes—a brief history of issues related to lead (in dust or other forms) and hazardous wastes at Water Gremlin.

In 1984, a Water Gremlin consultant produced a report on the impact of the company's use of lead. The consultant reported no significant problems:

> The results of monitoring conducted by this technical survey were found to be within acceptable levels in all categories. 152 soil samples were checked for total lead content with no samples having a lead content above acceptable levels. 152 vegetation samples indicated no lead contamination and five (5) water samples collected around the plant were below acceptable levels of lead in storm water run-off samples. Air quality samples from 24-hour [high volume] sampling devices indicated data well below the levels of federal standards….[37]

In 1994, Water Gremlin hired a company to assess soils at its site, related to a planned building addition. The consultant identified eight areas of "lead-impacted soils warranting corrective action" and—in accordance with a plan approved by MPCA—oversaw the excavation of more than 1,000 cubic yards of such soils.[38] The consultant said a small amount of lead-impacted soil remained after the excavation, but it said this did not pose a significant threat to human health or the environment.

From 2000 to 2004, Water Gremlin arranged for groundwater monitoring at its facility, pursuant to an approach approved by MPCA and as part of the company's participation in the state's Voluntary Investigation and Cleanup Program. The monitoring indicated decreasing levels over time of volatile organic compounds in the water. Once the contamination was below the MDH health risk levels, MPCA said there was no need for further monitoring and that it would take no action against the company related to the contamination.

In recent years, there is evidence that Water Gremlin mismanaged lead dust and hazardous chemicals, leading to worker and family member exposures as well as soil and groundwater contamination.

In 2017 and 2018, Ramsey County Public Health received a series of reports of elevated levels of lead in the blood of children. Upon investigation, the county determined that these were children of Water Gremlin employees. Testing and analysis indicated that the children's homes were not the source of the lead. Rather, the county determined that "take home" lead dust from Water Gremlin was the

[36] For additional discussion of hazardous waste characteristics, see Minnesota Pollution Control Agency, *Characteristic Hazardous Wastes* (May 2011), https://www.pca.state.mn.us/sites/default/files/w-hw2-04.pdf, accessed October 1, 2020; *Minnesota Statutes* 2020, 116.06, subd. 11; and *Minnesota Rules*, 7045.0131, subp. 1, accessed September 1, 2020.

[37] Lee Norman, Industrial Health Laboratory, *Evaluation of Environmental and Biological Conditions, Water Gremlin Company* (November 11, 1984).

[38] Braun Intertec, "Response Action Plan Implementation" (April 8, 1997), 1.

source. The following statement from a Ramsey County public health supervisor illustrated the reason for concern:

> One example of the contamination is a measurement we took from the driver-side floor mat of a parent who worked at Water Gremlin. We took dust-wipe samples that tested positive for lead dust at a level of 9,400 [micrograms per square foot]…. The readings from the floor of the car were more than 200 times the residential floor standard, and nearly 40 times the residential window sill standard.[39]

In late 2018, Ramsey County found a similar level of lead in the Water Gremlin employee locker room, which had been cleaned not long before the county's testing.[40]

In early 2019, Ramsey County received a new report, involving a child whose blood lead level exceeded the threshold (15 micrograms per deciliter) that triggers a mandatory county investigation. The child's parent worked at Water Gremlin. The county found lead dust levels in the family car and home entryway that the county said exceeded standards for residences.[41] Following this incident, the county required Water Gremlin to implement recommendations it had made to the company earlier and to have the plant evaluated by a professional industrial hygienist.

In October 2019, testing showed that another child of a Water Gremlin employee had a blood lead level high enough to trigger a mandatory county investigation. Again, tests from the family's vehicle and home entryway floor exceeded the residential lead threshold, and the county identified no sources of lead within the home.

Around this same time, MPCA identified a variety of hazardous waste issues at Water Gremlin. An MPCA order in November 2019 said: "Water Gremlin failed to maintain and operate its Facility in compliance with Minnesota law."[42] Among other things, the order cited "leaks and releases of lead-contaminated hazardous waste and used-oil waste to the floor and leak catchment pans throughout the Facility."[43] MPCA said:

> The hazardous waste was not rapidly and thoroughly recovered and had the potential to release to the land and water and threaten the human health and environment. Employees were freely allowed to walk from inside to outside of the Facility potentially tracking hazardous waste lead and lead-contaminated wastes outside. Garage doors at the Facility were left open during operations near hazardous waste lead and

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[39] Declaration of James Yannarelly [Ramsey County Environmental Health], Support of Motion for Temporary Injunction, Second Judicial District, 62-CV-19-7606 (October 28, 2019).

[40] According to the county, the locker room is where employees changed clothes and left the worksite to go to their cars and homes.

[41] The maximum threshold for lead dust on the floor of a home is 40 micrograms per square foot. The county found 7,000 micrograms of lead per square foot on the driver's side floor of the vehicle; 700 micrograms per square foot on the driver's seat; and 50 micrograms per square foot on the home entryway floor.

[42] Minnesota Pollution Control Agency, "Administrative Order: In the Matter of Water Gremlin Company" (November 5, 2019), 3.

[43] *Ibid*.

> lead-contaminated materials, allowing for hazardous waste to migrate out of the Facility.[44]

MPCA's November 2019 order also said that Water Gremlin had failed to obtain a permit for the evaporation of certain hazardous waste generated at the facility and for the treatment of solid hazardous waste on-site.

Evidence of soil and water contamination at Water Gremlin made the violations cited in the November 2019 order more tangible. Samples collected in 2019 from beneath the Water Gremlin production facility showed TCE, tDCE, and lead in the soil and groundwater.

In the meantime, the concerns about lead dust at Water Gremlin led to interventions at the facility by two additional state agencies and the courts. On October 28, 2019, the Minnesota Department of Labor and Industry issued an order for Water Gremlin to temporarily cease operations related to lead products. That department and the Minnesota Department of Health also asked a Ramsey County district court judge to issue an injunction extending this order until the court was satisfied that the company had taken the necessary steps to prevent lead poisoning in employees' children. The district court issued an order on October 31, 2019, granting a temporary injunction; this order continued to keep the plant shut down and required the parties to meet and confer on a remediation plan. The court subsequently lifted the injunction against manufacturing operations effective November 5, 2019, and it directed the company to comply with various safety requirements. While some of these requirements pertained to plant operations, Water Gremlin was also directed to clean employee vehicles and conduct lead testing and clean-up at employee residences. Water Gremlin appealed the requirements for residential testing and clean-up, but the Minnesota Court of Appeals affirmed the district court's decision in June 2020. In its decision, the court said:

> In sum, the record supports the district court's determination that Water Gremlin's failure to take steps to prevent the migration of lead from its manufacturing plant to the homes of past and present employees is a public health nuisance.[45]

[44] Minnesota Pollution Control Agency, "Administrative Order: In the Matter of Water Gremlin Company" (November 5, 2019), 4.

[45] Leppink v. Water Gremlin Co., A19-1975 (Minn. Ct. App. Jun. 1, 2020).


THE GREAT SEAL OF THE STATE OF MINNESOTA
L'ETOILE DU NORD
1858

Chapter 2: Permitting Issues

One of the key ways the Minnesota Pollution Control Agency (MPCA) regulates facilities with air emissions is by issuing permits to those facilities. The permits set limits on a facility's emissions and specify requirements for how the facility must control its emissions.

MPCA issued its first air quality permit to Water Gremlin Company in 2000. The 2000 permit (and its amendments in 2002 and 2006) established requirements for Water Gremlin that did not expire. This chapter discusses several ways in which MPCA permit staff did not take effective actions related to Water Gremlin over the years. The chapter also discusses some broader permit-related issues that might have hindered MPCA's regulatory capabilities. In Chapter 3, we discuss MPCA's enforcement of Water Gremlin's air quality permit.

KEY FINDINGS IN THIS CHAPTER

- **MPCA did not issue an initial air quality permit to Water Gremlin until several years after the company applied for one.**
- **MPCA's 2002 amendment to Water Gremlin's air quality permit did not place adequate controls on the company's use of trichloroethylene.**
- **MPCA did not require performance tests after April 2002 to verify that Water Gremlin's pollution control equipment worked properly.**
- **MPCA's absence of air toxics rules and its air quality permit backlogs are longstanding issues that could have contributed to weaknesses in the agency's oversight of Water Gremlin.**

Absence of an Air Quality Permit Before 2000

The 2019 stipulation agreement between MPCA and Water Gremlin—discussed in Chapter 1—focused on a history of alleged violations by the company dating back to at least 2002. That was the period of time when, according to MPCA, the company had emissions that exceeded those allowed by its permit. However, when examining MPCA's performance in regulating Water Gremlin and protecting the public from the company's hazardous emissions, we also considered the period before Water Gremlin received its first air quality permit from MPCA (in 2000).

The U.S. Congress's 1990 amendments to the federal Clean Air Act significantly modified air emission regulations. For example, the new law established a requirement for states to implement programs (called "Part 70" programs) for issuing operating permits to stationary sources of air pollution, and it specified strategies for controlling

about 190 hazardous air pollutants listed in the law.[1] Some key provisions of this law took years to fully implement. For example, Minnesota received interim federal approval for its Part 70 air quality permitting program in 1995, and it received final approval in 2001.[2]

Water Gremlin was a major source of hazardous emissions in the 1990s.

In June 1995, Water Gremlin applied to MPCA for a Part 70 air quality operating permit for its facility. The application indicated that Water Gremlin "has previously been required to have a state air emissions permit to operate based on potential [volatile organic compound] emissions," but the company had not been required to submit a Part 70 permit application under state and federal regulations until 1995.[3] The application said that MPCA had not previously issued any type of air quality permit to Water Gremlin.[4]

Water Gremlin's 1995 application requested authorization for the company to operate as a "major source" of hazardous air pollutants and volatile organic compounds.[5] Federal regulations classify a facility that annually emits—or has potential to emit—ten tons or more per year of any single hazardous air pollutant as a "major source."[6] The 1995 permit application estimated that the company's potential annual trichloroethylene (TCE) emissions were 238.3 tons—or more than 23 times the federal threshold for a single major source of hazardous air pollutants.[7] The company said that it hoped to

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[1] "Part 70" permits are sometimes also called "Title V" permits. Part 70 is the portion of federal regulations that discusses implementation of Title V of the 1990 Clean Air Act amendments.

[2] "Clean Air Act Final Interim Approval of Operating Permits Program; Minnesota Pollution Control Agency," 60 *Federal Register*, Page 31,657 (1995); and "Clean Air Act Final Full Approval of the Operating Permits Program; Minnesota," 66 *Federal Register*, Page 62,967 (2001). Prior to the Clean Air Act amendments of 1990, MPCA operated a state-based air quality permit program, authorized by state law. MPCA started issuing "total" permits (covering the installation and operation of all pollution control equipment in a facility) in 1985, and these state permits needed to be renewed every five years.

[3] Braun Intertec Corporation, *Air Emission Permit Application, Prepared for Water Gremlin Company*, June 15, 1995.

[4] We could not determine from MPCA records why Water Gremlin did not previously have a state air quality permit. We saw correspondence from 1985 in which MPCA said it would advise Water Gremlin about whether the company needed an air quality permit for its lead emissions, but we never saw evidence that MPCA provided such advice. In addition, we saw no evidence in MPCA records that Water Gremlin submitted (prior to 1995) an application for a state air quality permit related to its emissions of volatile organic compounds.

[5] Water Gremlin emitted trichloroethylene, which was regulated as both a volatile organic compound and a hazardous air pollutant.

[6] 42 *U.S. Code*, sec. 7412(a)(1) (2012). The regulations also state that a facility that annually emits or has potential to emit at least 25 tons (in total) of all types of hazardous air pollutants is a major source. In addition, there are federal thresholds for all types of air pollutants (not just federally defined hazardous pollutants) in new or expanding facilities that define what constitute "major sources."

[7] U.S. Environmental Protection Agency, *Potential to Emit: A Guide for Small Businesses* (Washington, DC, October 1998), 1, explained: "Potential to emit refers to the highest amounts of certain pollutants that your business could release into the air (even if you have never actually emitted the highest amount). Potential to emit considers the design of your equipment. It can also consider certain controls and limitations on the operation of your business...."

install new pollution control technology—perhaps in 1996—that would bring the company's TCE emissions to a level below the major-source threshold.

Water Gremlin Had Significant TCE Emissions Before MPCA Ever Issued the Company an Air Quality Permit

Calendar Year	Company-Reported Tons of TCE Emissions
1993	76
1994	100
1995	49
1996	100
1997	65
1998	55
1999	67
2000	59

SOURCE: U.S. Environmental Protection Agency, Toxics Release Inventory.

The 1995 permit application was not the only public disclosure in the 1990s that Water Gremlin was a major emitter of TCE. Water Gremlin regularly reported its actual TCE emissions to a federal, publicly available database. As shown in the box at right, that database indicated that Water Gremlin's TCE emissions from 1993 through 2000 were consistently above the ten-ton threshold that defined major sources of hazardous air pollutants. When companies or other emission sources report data on toxic emissions to the U.S. Environmental Protection Agency (EPA), the data are made publicly available on the EPA website.

MPCA failed to act on Water Gremlin's 1995 permit application in a timely manner.

Under the federal government's interim approval of MPCA's Part 70 permitting program, MPCA had until July 17, 1998, to act on Water Gremlin's 1995 application. MPCA did not do so. As a result, a company—Water Gremlin—that had disclosed to MPCA in 1995 that it was a major source of hazardous air pollutants continued to operate without a permit for five years after its initial permit application.

In the aftermath of Water Gremlin's 1995 application to MPCA for a major-source air quality permit, we saw no evidence in MPCA records of further correspondence between the company and MPCA regarding air quality permitting for more than four years. In September 1999, Water Gremlin submitted an application for a permit amendment that would limit the company's emissions to less than ten tons per year for TCE once the company installed new pollution control equipment. It is curious that Water Gremlin submitted a proposed permit amendment in 1999, even though MPCA had not previously issued a permit to the company. Apparently the company was proposing a modification of its 1995 permit application, on which MPCA had not acted. MPCA treated the proposed permit amendment as an application for a new permit, and it approved a permit in July 2000.

We heard some possible explanations for MPCA's failure to issue a permit to Water Gremlin prior to 2000. For example, a report suggested that MPCA did not issue a permit to Water Gremlin in response to the 1995 application because of the large number of applications MPCA received following the 1990 Clean Air Act amendments.[8]

[8] Kathleen Winters, *An Evaluation of the Minnesota Pollution Control Agency's Permitting and Enforcement Actions Regarding Water Gremlin Company*, prepared for the Minnesota Pollution Control Agency (St. Paul, January 2020), 12. This report was initially prepared in January 2020 but underwent the author's subsequent revisions to style and content in March, July, and October 2020.

Also, an MPCA supervisor told us that, after the agency received interim approval of its permitting program in 1995, the agency focused initially on issuing operating permits to large or complex emission facilities, such as power plants and refineries, in addition to its high-priority work issuing permits for facilities proposing new construction.[9] This was a factor in the agency's deferral of work on permit applications such as Water Gremlin's, MPCA told us.

A 2002 report by the EPA Inspector General indicated that many states had difficulty issuing permits in a timely manner in response to the 1990 Clean Air Act amendments.[10] As of the end of 2001, only 70 percent of the major sources of air pollution nationally had been issued their required permits, and only 63 percent of Minnesota's major sources had permits. Based on a review of six states (not including Minnesota), the Inspector General said key factors for the slower-than-expected permitting included (1) insufficient resources, (2) complex federal regulations and limited federal guidance, and (3) conflicting priorities within states for issuing different types of permits.

We cannot say with certainty why MPCA did not act more quickly on Water Gremlin's 1995 application.[11] We reviewed MPCA's archive of documents related to Water Gremlin, and we saw no documents that discussed why MPCA did not respond to this application. In fact, we saw no letter from MPCA to Water Gremlin that even acknowledged that the agency had received the company's 1995 application.[12]

In our view, MPCA must be accountable for its failure to respond to Water Gremlin's 1995 permit application. While Water Gremlin's operations may not have been as complex as those of some other facilities that were seeking permits, the company was classified by federal regulations as a major source of pollution (emitting more than ten tons annually) for a chemical that is federally classified as hazardous. Furthermore, by not acting on the company's permit application within three years of getting interim approval to operate a Part 70 permit program, MPCA violated federal regulations. Without a permit, the company continued to emit large amounts of TCE from its facility in White Bear Township. From the time of Water Gremlin's June 1995 application for a permit to the time the company received its first MPCA permit in July 2000, the

[9] State rules require MPCA to give priority when issuing permits to "applications for construction or modification of a stationary source." (*Minnesota Rules*, 7007.0750, subp. 1, accessed August 31, 2020.) Because this rule has been approved by EPA and incorporated into the state's air quality implementation plan, MPCA said it is enforceable by EPA and citizens under the federal Clean Air Act.

[10] U.S. Environmental Protection Agency, Office of Inspector General, *EPA and State Progress in Issuing Title V Permits* (March 28, 2002).

[11] There are few current MPCA staff who can speak from direct experience about MPCA's air quality permitting practices in 1995. We requested interviews with several former MPCA air quality officials who might have been able to comment on permitting, monitoring, or enforcement during the years after the 1990 Clean Air Act amendments passed, but they declined or did not respond to our requests.

[12] State rules require (and required in 1995) that MPCA notify the permit applicant within 60 days to indicate whether the application is complete, but we learned that MPCA dispensed with permit completeness reviews—as a time-saving measure—in the period immediately following the federal government's approval of the Part 70 permitting program. The rules said that, without a completeness review within 60 days, an application would be considered complete as submitted.

company emitted more than 300 tons of TCE. Until 2000, MPCA simply did not regulate Water Gremlin's emissions.[13]

Issues with the 2002 Permit Amendment

In 2000, MPCA issued its first air quality permit to Water Gremlin. In 2002, MPCA approved a permit amendment to authorize the company to change its pollution control equipment. In 2006, MPCA approved another permit amendment to give the company flexibility to add coaters to its manufacturing operations in future years.

The 2002 permit amendment was especially important. The main pollution control equipment authorized by the 2002 amendment remained in place until after the 2019 stipulation agreement between MPCA and Water Gremlin. In addition, the 2002-amended permit established key provisions regarding hazardous air pollutants that remained in place during the period when the violations cited in that agreement occurred.

MPCA's 2002 permit amendment did not place adequate controls on Water Gremlin's use of trichloroethylene and the resulting emissions.

Water Gremlin proposed a permit amendment in 2001 because its existing pollution control equipment—a catalytic oxidation system (or "oxidizer")—was not working properly. The company proposed to replace the existing equipment with a fluidized bed organics recovery system. An oxidizer controls emissions by combusting large portions of them into carbon dioxide, water, and inorganic acids. In contrast, a fluidized bed organics recovery system uses a bed of carbon beads to adsorb waste emissions, allowing them to be recovered as a liquid for re-use or waste disposal. (The box at right discusses the meaning of "adsorption.")

What is "Adsorption?"

In a 1999 publication, EPA said: "We are referring to adsorbers, not absorbers, because the pollutant is adsorbed on the surface (mostly the internal surface) of a granule, bead, or crystal of adsorbent material. It is not absorbed by a chemical reaction. This is an important difference. The adsorbed material is held physically, rather loosely, and can be released (desorbed) rather easily by either heat or vacuum. By contrast, an absorber reacts chemically with the substance being absorbed, and thus holds the absorbed substance much more strongly, requiring much more energy to release the absorbed substance."

— EPA, *Technical Bulletin: Choosing an Adsorption System for VOC* (1999), 1.

[13] Because MPCA did not issue a permit to Water Gremlin until July 2000, we cannot be certain whether a permit—had one been issued before 2000—would have limited the company's annual TCE emissions to less than ten tons, or would have authorized emissions of ten tons or more while subjecting the company to stricter federal requirements. MPCA told us that the "maximum achievable control technology" (MACT) standards that would have pertained to Water Gremlin if it had continued to be a major source of air pollution were not promulgated by EPA until 2004.

Water Gremlin proposed to re-use portions of its recovered trichloroethylene. In a June 2001 letter to MPCA, Water Gremlin described the new pollution control equipment it intended to install, and it said, "Trichloroethylene emissions will be recovered and condensed for re-use at the facility…."[14] A letter accompanying the company's July 2001 permit amendment application said the new process would "adsorb the TCE from the facility process exhaust, desorb the TCE in a desorber unit, then condense and recover the TCE for use at the facility."[15] The actual permit application said, "The desorbed trichloroethylene will be condensed and recovered for re-use at the facility. The use of this new system should reduce the overall amount of trichloroethylene used at the Water Gremlin facility."[16]

However, MPCA did not adequately take Water Gremlin's statements into account when drafting the 2002 permit amendment. Despite Water Gremlin's stated intent to re-use TCE at the facility and to decrease its overall TCE use, the permit approved by MPCA in 2000 and the amended permit approved in 2002 had identical language regarding Water Gremlin's use of TCE. For any single hazardous air pollutant (such as TCE), the permits established the following limit:

> [L]ess than or equal to 31,666 [pounds]/month using 12-month Rolling Average…. Single [hazardous air pollutant, or HAP] Usage shall be calculated based on purchase records of all HAP-containing materials and corresponding material composition.[17]

Elsewhere, the 2000 and 2002 permits both required that the company's equipment control at least 95 percent of emissions—which equated to an annual limit of 9.5 tons of emissions from the purchased TCE.[18] This was just below the Clear Air Act's threshold of ten tons of any single hazardous air pollutant per year that, if surpassed, would have subjected the facility to more restrictive requirements.

The problems with the 2002 permit amendment included the following:

- The permit continued limits on TCE purchases but did not articulate limits on TCE use (including re-use). Given the company's stated intent to re-use TCE in

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[14] David Zinschlag, Water Gremlin Environmental, Health, and Safety Manager, letter to Rhonda Land, MPCA, "Re: Water Gremlin [Company]—Proposed VOC/Trichloroethylene Control Technology," June 22, 2001.

[15] David Zinschlag, Water Gremlin Environmental, Health, and Safety Manager, letter to MPCA Air Emissions Permit Processing Coordinator, "Re: Submittal of Application for a Major Permit Amendment for Water Gremlin [Company], White Bear Lake, Minnesota, MPCA Facility ID No. 12300341," July 17, 2001.

[16] HDR Engineering, Inc., "Application for Major Permit Amendment to Air Emissions Permit No. 12300341-001, Water Gremlin [Company], White Bear Lake, Minnesota," July 17, 2001, Form MOD-1.

[17] MPCA, Air Emission Permit No. 12300341-001, July 20, 2000, A-3; and Air Emission Permit No. 12300341-002, March 18, 2002, A-5.

[18] Water Gremlin's permits limited the company's hazardous air pollutant (in this case, TCE) purchases to a rolling average of 31,666 pounds per month—or 379,992 pounds per year. Dividing 379,992 by 2,000 (the number of pounds in a ton) means that the permits limited Water Gremlin to 190 tons of TCE purchased per year. The permits required Water Gremlin to have equipment that controlled 95 percent of the TCE emissions; 190 tons x 0.05 = 9.5 tons of emissions per year.

its production processes, the permit did not contain language that effectively limited total TCE emissions.

- Although the company was moving to an approach that would rely on a combination of purchased and re-used TCE (rather than relying solely on purchased TCE), the 2002 permit amendment did not reduce the company's authorized amount of annual TCE purchases from what the 2000 permit allowed.[19]

- With the permit's implicit limit of 9.5 tons of emissions per year from purchased TCE, any significant re-use of TCE would put the company over the ten-ton-per-year threshold of emissions of a single hazardous pollutant that constitutes a "major source" under federal regulations.

  The purpose of this permit was to subject Water Gremlin to emission limits so that it would not be a major source of air pollution. However, as noted above, the permit only limited TCE purchases; it did not contain language that explicitly limited TCE re-use or overall TCE use.

A 2020 report prepared for MPCA said Water Gremlin's 2001 permit application "entirely omitted emissions attributable to the re-use of TCE from its new" pollution control system.[20] That report also said the 2001 permit application failed to identify a new emission source—a distillation unit—the company planned to install to treat the recovered TCE.[21] MPCA maintains that Water Gremlin submitted an inaccurate or unclear permit application, contrary to the requirements of state regulations.

However, MPCA—the state's primary regulatory agency for pollution—should be accountable for the permits it issues. As MPCA's air quality permits manager told us, it is MPCA's responsibility to ensure that the language adopted in its permits is appropriate for the facilities it regulates. MPCA acknowledges that it did not identify—at the time of the 2002 permit amendment—the impact that TCE re-use would have on Water Gremlin's emissions. Furthermore, as MPCA stated in the permit amendment,

> Based on the information provided by Water Gremlin Company, the MPCA has reasonable assurance that the proposed operation of the

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[19] One MPCA supervisor told us the failure of the 2002 permit to reduce the amount of TCE the company would be allowed to purchase may have reflected that the permit drafter "wasn't paying attention or wasn't very well trained."

[20] Kathleen Winters, *An Evaluation of the Minnesota Pollution Control Agency's Permitting and Enforcement Actions Regarding Water Gremlin Company*, prepared for the Minnesota Pollution Control Agency (St. Paul, January 2020), 26. A chief author of MPCA's 2002 Water Gremlin permit told us that he assumed the company would rely primarily on purchased TCE, and that he did not fully understand the quantity of recovered TCE that would be re-used in the company's operations.

[21] *Ibid.*, 14. The report also said Water Gremlin did not provide a process flow diagram or updated emissions calculations with its 2001 application (p. 14). In addition, the report said, "Water Gremlin fundamentally misrepresented its synthetic minor source status to the MPCA [in its 2001 application], which is inexplicable" (p. 26). As we describe in Chapter 3, a "synthetic minor" has actual or potential emissions of a single hazardous air pollutant (such as TCE) that do not exceed ten tons per year, and it is subject to less stringent requirements than a facility with higher levels.

> emission facility, as described in the Air Emission Permit No. 12300341-002, and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota rules.[22]

According to MPCA, improvements over the years in its air quality permitting process make it less likely that problems that occurred in the 2002 permitting process would occur today.[23] For example, the 2020 report prepared for MPCA on its actions in the Water Gremlin case said that—contrary to current practices—MPCA did not have a process in place in 2002 to ensure that MPCA's review was "complete," nor a process for having MPCA staff review permits drafted by their peers prior to issuance.[24] However, an absence of such processes in 2002 should not absolve MPCA of responsibility for the permits it issued. Furthermore, we observed that another MPCA engineer did conduct a peer review of the 2002 Water Gremlin permit amendment, which included a checklist of items related to the content of the amendment.[25]

Insufficient Verification of Pollution Control Equipment Efficiency

Water Gremlin's air quality permits—both originally and as amended—have required the company's pollution control equipment to operate at no less than 95 percent efficiency. This meant that the amount of the facility's hazardous air pollutant—TCE—emitted to outside air had to be no more than 5 percent of the TCE subject to the facility's pollution control equipment.[26]

According to MPCA's 2019 stipulation agreement with Water Gremlin, MPCA determined—in late 2018 or early 2019—that Water Gremlin had not been maintaining a 95 percent rate of pollution control since at least 2009. MPCA said Water Gremlin experienced multiple problems with the fluidized bed recovery system during that time but never told MPCA that the equipment was not achieving 95 percent efficiency.

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[22] MPCA, Air Emission Permit No. 12300341-002, Technical Support Document, 3.

[23] MPCA told us these improvements have included the development of permitting checklists and permitting templates, better training and mentoring of new staff, more formal peer reviews, and additional staff meetings intended to improve consistency.

[24] Such processes are intended to help ensure the completeness and adequacy of MPCA's permits.

[25] For example, the peer reviewer in 2002 said that he examined the adequacy of the technical support document for the permit amendment, as well as reviewing the permit application and the contents of the permit. There may be differences in the nature or thoroughness of MPCA's peer review and completeness review practices today compared with 2002, but we did not assess this.

[26] The 2000 permit and 2002 permit amendment said: "Operation of the emission control system must achieve a minimum 95 percent reduction in [hazardous air pollutant] and [volatile organic compound] emissions relative to the inlet concentrations." The 2006 permit amendment used the term "95 percent control efficiency" when discussing the ability of the equipment to reduce hazardous emissions.

MPCA did not require performance tests after April 2002 to verify that Water Gremlin's pollution control equipment worked properly.

Water Gremlin's initial permit—issued in July 2000—did not produce the intended results. The permit required the company to operate a catalytic oxidizer to reduce hazardous air pollution emissions by at least 95 percent from what they would be otherwise. In addition, the permit required that a "performance test" of the equipment be conducted within 90 days of the equipment's initial start-up. After the equipment started operating in August 2000, Water Gremlin requested and received a 120-day extension to conduct the performance test, but the company conducted no test in that extended time frame. In a June 2001 letter to MPCA, a Water Gremlin official said, "The catalytic oxidation system experienced operational difficulties from start-up, and it has since been concluded that this system was not appropriately designed for use at the Water Gremlin facility."[27] Consequently, and as noted previously, Water Gremlin submitted an application for a permit amendment in July 2001, proposing to replace the catalytic oxidizer with a different type of equipment for controlling TCE (a fluidized bed organics recovery system). In September 2001, MPCA entered into a "schedule of compliance" with Water Gremlin, which required installation and testing of the new system. If Water Gremlin failed to comply with the terms of this compliance agreement, the agreement mandated that the company pay financial penalties for each day of noncompliance.

MPCA approved an amendment to Water Gremlin's permit in March 2002, authorizing the implementation of the new pollution control system. Water Gremlin conducted a test of the new equipment on April 10, 2002. The test indicated that the equipment was removing 98.9 percent of volatile organic compounds from the company's emissions, and this exceeded the 95 percent minimum specified in the MPCA permit.

Water Gremlin experienced subsequent problems with the new equipment. As a result, the equipment had to be repaired and rebuilt. After the initial problems, the refurbished equipment was re-started in February 2003. There were subsequent problems in July 2005, when the equipment continuously overheated and had to be shut down. The equipment was then sent out of state to be rebuilt.

Despite Water Gremlin's history of equipment problems during the first two years of the 2000 permit, MPCA did not require the company to conduct performance tests of its pollution control equipment subsequent to the April 2002 test. Such repeat tests were not required by MPCA's August 2001 schedule of compliance, nor by its March 2002 air quality permit amendment. Furthermore, when the company's permit was again amended in 2006, the amendment included no requirements for periodic performance tests—despite the fact that the pollution control equipment tested in April 2002 had subsequently been rebuilt on two occasions. An MPCA inspector told us that performance tests (and continuous emissions monitoring) are the "gold standards" for evaluating permittee compliance, and she said to us: "…[I]t's very surprising [there was

[27] David Zinschlag, Water Gremlin Environmental, Health, and Safety Manager, letter to Rhonda Land, Minnesota Pollution Control Agency, June 22, 2001.

not a requirement for subsequent testing after 2002], especially given the rebuild [of equipment] that occurred." Another MPCA staff person—who specializes in performance testing and was assigned to assist with the 2006 Water Gremlin permit amendment—told us that a performance test could have indicated in 2006 whether the company's pollution control equipment was operating properly.

Since 2019, MPCA has taken a more direct role in specifying when performance testing must occur than the agency did previously. Prior to 2019, MPCA's air quality permits required the permittees to submit "test frequency plans" for MPCA to review. Starting in 2019, MPCA no longer required permittees to submit such plans—rather, the permits now state that MPCA (in subsequent correspondence) will specify the required frequency of performance tests. According to MPCA, "The test frequency becomes effective upon issuance of the [permit] review letter and is incorporated into the facility's permit with the next permit amendment."[28] An MPCA internal document indicates that most permits should require recurring performance testing on a set schedule—typically at least every 60 months.

MPCA told us that other agency practices related to performance testing have improved since the early 2000s. For example, MPCA said that the technical support document it develops for each permit is now more detailed than it used to be, requiring staff to justify why the proposed level of facility monitoring (including performance testing) is adequate.

Our office raised the issue of MPCA's limited performance testing requirements in a report 30 years ago. At that time, we noted that over a 3.5-year period, only one-third of the state's largest pollution sources with air quality permits had conducted at least one such "stack test."[29] We recommended that MPCA determine which types of facilities could best be monitored through more frequent stack tests and incorporate these testing requirements into state rules. However, the state rules governing performance testing today still provide wide discretion to MPCA about when such tests should be required.[30]

Other Issues

During our communications with MPCA staff and our review of documents, we heard some suggestions that MPCA's regulatory oversight of Water Gremlin may have been affected by broader permit-related issues that go beyond MPCA's regulation of this one company. We discuss two of those issues below.

Lack of State Air Toxics Rules

Under the federal Clean Air Act, federal and state governments have been required to regulate several "criteria pollutants": carbon monoxide, lead, ground-level ozone,

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[28] Minnesota Pollution Control Agency, "Test Frequency," https://www.pca.state.mn.us/air/test-frequency, accessed September 1, 2020.

[29] Office of the Legislative Auditor, Program Evaluation Division, *Pollution Control Agency* (St. Paul, January 1991), 50-51.

[30] According to the rules, a facility must conduct a performance test "at the times required by an applicable requirement or compliance document and at additional times if the commissioner requests a performance test…." *Minnesota Rules*, 7017.2020, subp. 1, accessed September 2, 2020.

particulate matter, nitrogen dioxide, and sulfur dioxide. Aside from criteria pollutants, other potentially hazardous emissions are commonly referred to as "hazardous air pollutants" or "air toxics."[31] Federal regulations identify nearly 190 hazardous air pollutants, and hazardous air pollutants are federally regulated in a different manner than criteria pollutants.[32] MPCA uses the term "air toxics" to refer to about 400 chemicals for which there are health benchmarks.

In 1985, MPCA started to include air toxics provisions in some of the air quality permits it issued—such as requirements for the permittees to conduct studies of air toxics emissions. There were no state rules governing air toxics at that time, so permit provisions related to air toxics were negotiated between MPCA and permittees on a case-by-case basis. MPCA developed air toxics guidelines for permittees in 1990, and it intended to promulgate air toxics rules soon after this.[33] But, in a 1991 evaluation, we said, "It has taken [MPCA] longer than necessary to develop air toxics rules."[34]

Today, 30 years later, there are still no Minnesota rules governing air toxics. MPCA staff have some of the same concerns today that led to the agency's earlier efforts to develop air toxics rules. MPCA's manager of air quality permits told us, "I do believe that in a situation like Water Gremlin, [an air toxics program] would have made a difference." He said MPCA relies largely on the provisions of rules to determine what to include in air quality permits, but current rules do not require facilities to report information on their air toxics emissions.[35] He also said air toxics rules might result in more consistency in the way facilities with air toxics emissions are regulated in the permitting process. An MPCA permit writer told us that development of air toxics-related permit provisions on a case-by-case basis is a "recipe for disaster," and that air toxics rules could help air quality permit staff—who are not trained toxicologists—set better priorities when issuing permits. We offer no recommendation on whether MPCA should adopt air toxics rules, or what the nature of those rules should be; those are issues that are broader than the

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[31] There is some overlap between criteria pollutants and air toxics/hazardous air pollutants. Specifically, lead is classified as both a criteria pollutant and an air toxic (but not a hazardous air pollutant). Particulate matter (a criteria pollutant) may contain air toxics and hazardous air pollutants.

[32] For example, federal regulations establish ambient air quality standards for criteria pollutants; states that do not meet these standards must develop plans to do so. In contrast, federal regulations do not specify ambient standards for hazardous air pollutants; they instead specify the types of technology that certain facilities must use to control these pollutants.

[33] In the early 1990s, MPCA included the following language in some air quality permits: "The Permittee is hereby notified that MPCA is in the process of developing rules relating to non-criteria pollutant (air toxics) emissions and the permit may be modified to be consistent with the new rules."

[34] Office of the Legislative Auditor, *Pollution Control Agency*, 59. Our evaluation—noting MPCA's expressed intent to develop air toxics rules and the 1990 federal law's provisions about hazardous air pollutants—said: "An unresolved issue is how PCA can ensure continuing compliance with [air] toxics rules. Presently, PCA does little ongoing toxics monitoring for enforcement purposes. It is difficult to monitor actual air toxics emissions during inspections or with [continuous emission monitoring] equipment, and the new state rules may not include emission standards. It would be prudent for staff to begin developing strategies now for adequate enforcement of the new federal and state toxics regulations" (p. 59).

[35] As we discuss in Chapter 3, the rules require facilities to report their aggregate emissions of volatile organic compounds (which is one category of pollutants that may include hazardous air pollutants or air toxics), but not the amounts of individual chemicals within this broad category. The rules also require facilities to report on lead emissions, another type of air toxic.

Water Gremlin case. However, the Water Gremlin case suggests that it may be time for MPCA to again consider the need for air toxics rules. MPCA officials told us the agency has recently been considering how to better regulate air toxics, including the possibility of amending state rules to require emissions reporting on air toxics.

Permit Backlog

Some current or former MPCA staff have suggested that the agency's backlog of permit applications might have affected its ability to issue Water Gremlin's permits in a timely or effective manner. They said, for example, that the backlog may have been a reason MPCA did not issue an air quality permit to the company before 2000, and that time pressures to issue permits could have affected the adequacy of the company's subsequent permit amendments.

MPCA has had a backlog of air quality permits for decades. In a 1991 evaluation, we said MPCA's air quality permit backlog at that time represented "at least 18 months of work" for the agency's air quality permit staff.[36] We said that "updating air quality rules would avoid many case-by-case negotiations that now occur, and better permit application forms and instructions would help avoid the need for repeated requests for information from PCA staff to applicants."[37] At the time, we also said MPCA probably needed more permit staff.[38]

It appears that MPCA has struggled in its efforts to eliminate its air quality permit backlog. One long-time MPCA employee told us there has been a backlog "from the beginning" of the air quality permit program, reflecting what the employee described as underfunding and unrealistic expectations about the time it takes to write air quality permits. In a statement by MPCA and EPA that addressed the "joint priority" they assigned to Minnesota's permitting problems for federal fiscal years 2017 through 2019, the agencies said:

> MPCA and EPA agree that there is a large backlog of [Part 70] renewal applications. EPA and MPCA seek to work jointly to significantly increase issuance of [Part 70] operating permit renewals, thereby reducing MPCA's renewal backlog.[39]

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[36] Office of the Legislative Auditor, *Pollution Control Agency*, 34. The evaluation found that MPCA had a backlog of 250 permit applications, most in the earliest stage of review, as compared with an annual average of about 150 permits issued, reissued, or modified.

[37] *Ibid*., xiii.

[38] Our report noted that the 1990 Clean Air Act amendments' federally mandated permit fees might significantly increase MPCA's air quality fee revenues.

[39] U.S. Environmental Protection Agency and Minnesota Pollution Control Agency, "Air Quality Permitting Joint Priority, October 1, 2016 – September 30, 2019 (FFY 2017-2019)," undated.

State laws and rules governing air quality permitting have established timelines and priorities for issuing permits.[40] As required by law, MPCA issues annual reports on the extent to which the agency is meeting the statutory permit timeliness goals.[41]

State rules require MPCA to give priority when issuing permits to "applications for construction or modification of a stationary source."[42] The higher priority for construction permits is apparently intended to help ensure that MPCA delays do not have adverse economic impacts on facilities that will be undergoing some type of construction.

MPCA officials told us that inadequate staffing has been one cause of the agency's backlog of air quality permit applications. However, they also said the number of MPCA air quality permit staff (including supervisors) has more than doubled since 2012, which they said might help the agency reduce the permit backlog going forward.[43]

We offer no recommendations on how to address the air quality permit backlog; that is an issue beyond the scope of this review. However, we raise the issue here because some people suggested it may have affected the timeliness and adequacy of Water Gremlin's permits, and because the issue remains a challenge for MPCA today.

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[40] For example, *Minnesota Statutes* 2020, 116.03, subd. 2b(a), says: "It is the goal of the state that environmental and resource management permits be issued or denied within 90 days for tier 1 permits or 150 days for tier 2 permits following submission of a permit application. The commissioner of the Pollution Control Agency shall establish management systems designed to achieve the goal." The Legislature enacted this language in 2011. The statute cited here defines "tier 1 permits" as those that do not require individualized actions or public comment periods, and "tier 2 permits" as permits that require individualized actions or public comment periods.

[41] The most recent report showed that, among Tier 1 non-construction air quality permits, MPCA took longer than 90 days to issue 2 of 59 permits; for pending permits of this sort, 2 of 6 had been pending more than 90 days. Among Tier 2 construction air quality permits, MPCA took longer than 150 days to issue 2 of 3 permits; for pending permits of this sort, 12 of 22 had been pending for more than 150 days. Among Tier 2 non-construction air quality permits, none of the 10 permits issued had taken longer than 150 days; for pending permits of this sort, 32 of 68 had been pending for more than 150 days. Minnesota Pollution Control Agency, *Annual Permitting Efficiency Report* (St. Paul, August 1, 2020).

[42] *Minnesota Rules*, 7007.0750, subp. 1, accessed August 31, 2020.

[43] MPCA also said the increasing complexity of federal and state regulations has made it more challenging to reduce the permit backlog.


THE GREAT SEAL OF THE STATE OF MINNESOTA
L'ETOILE DU NORD
1858

Chapter 3: Enforcement Issues

Based on our review of documents, the Minnesota Pollution Control Agency (MPCA) took a reasonable enforcement action in 2019 when it entered into a stipulation agreement with the Water Gremlin Company, including the imposition of a substantial financial penalty. In public reports, the company has acknowledged that it violated state and federal regulations, and that it emitted levels of a hazardous air pollutant—trichloroethylene (TCE)—that surpassed what its air quality permit allowed. In fact, the reported emission levels far exceeded the threshold that would have categorized the company as a "major source" of air pollution, by federal definitions; these levels would have subjected the company to stricter regulatory requirements. By MPCA's reckoning, the company had been noncompliant with the requirements of its air quality permit since at least 2002.

Residents living near the Water Gremlin facility and public officials have questioned why it took so long for MPCA to detect the company's noncompliance, and whether MPCA exercised appropriate regulatory oversight of Water Gremlin over the years. This chapter discusses areas in which MPCA's monitoring of Water Gremlin should have been more effective.

KEY FINDINGS IN THIS CHAPTER

- **MPCA did not meet federal inspection requirements, allowing eight years between two of its inspections during a period when Water Gremlin was noncompliant with its air quality permit.**
- **MPCA compliance and enforcement staff did not sufficiently review Water Gremlin's emission inventory reports. Some of these reports could have alerted MPCA that the company was (1) not reporting all of its emission sources and (2) re-using a hazardous chemical.**
- **MPCA did not penalize Water Gremlin when public data showed that the company's emissions in 2000 through 2002 far exceeded the company's permit limits. Water Gremlin's subsequent extended period of noncompliance (through 2018) raises questions about whether MPCA's initial enforcement was adequate.**
- **An insufficiently clear division of responsibilities for hazardous waste enforcement between MPCA and Ramsey County may have enabled hazardous waste enforcement problems to persist.**

Number of Inspections

When a facility receives an air quality operating permit, MPCA monitors and promotes the permittee's compliance with applicable regulations. According to MPCA, it does this

by (1) providing training, information, and guidance; (2) conducting inspections and reviewing the facilities' required reports and tests; and (3) responding to complaints.[1]

The frequency of MPCA's inspections of Water Gremlin over the years did not always meet federal requirements or MPCA's commitments.

The federal Clean Air Act does not specify how often inspections of permitted facilities must occur or the nature of those inspections. Over time, however, the Environmental Protection Agency (EPA) has issued guidance and requirements to state and local agencies on inspection frequencies. Before 1980, EPA recommended at least annual inspections for all stationary emission sources. Beginning in 1980, EPA guidance specified different inspection frequencies, depending on the nature of the facility. We reviewed each version of EPA's "stationary source compliance monitoring strategy" published since 2001, which have specified "federally enforceable requirements" regarding the frequency of "full compliance evaluations" of facilities. These EPA documents said states should conduct full compliance evaluations of "major sources" of air pollution at least once every two years. For facilities called "synthetic minors" that emitted or had the potential to emit at least 80 percent of the emission threshold that defined major sources, EPA said such facilities should receive a full compliance evaluation at least once every five years.[2]

Federally Required Minimum Frequency of Air Quality Inspections

Type of Emission Facility	Minimum Inspection Frequency
Major source	2 Years
Synthetic minor source with high potential or actual emissions	5 Years
Other synthetic minor source	Unspecified

SOURCE: EPA Stationary Source Compliance Monitoring Strategy.

In response to questions we posed to MPCA about its Water Gremlin inspection frequency, MPCA said:

> Water Gremlin has a synthetic minor air emissions permit; pursuant to the environmental performance partnership agreement with the EPA, the MPCA is required to inspect synthetic minor sources that are at or above 80% of their allowed emissions once every 5 years. For synthetic minor sources that are below 80% of their allowed emissions, there is not a required inspection frequency. Permittees are required to report their emissions to the MPCA, and the MPCA uses this information to inform the inspection schedule. In 2013, Water Gremlin's emissions exceeded

[1] Minnesota Pollution Control Agency, "Enforcement," https://www.pca.state.mn.us/regulations/enforcement, accessed August 25, 2020.

[2] As we note later in this chapter, EPA has authorized MPCA to conduct less frequent inspections of major sources than specified in its national guidance, but MPCA has committed to EPA that it will inspect at least every five years the "synthetic minors" with potential or actual emissions equal to at least 80 percent of the major-source threshold.

> 80% of their allowed emissions, so starting that year the facility was required to be inspected once every five years.[3]

However, this MPCA e-mail did not correctly convey the definitions that underlie EPA's inspection standards. As we noted earlier, the facilities for which EPA has "federally enforceable requirements" of once-every-five-year inspections are those that have actual emissions or potential emissions at or above 80 percent of the emission threshold used by the federal government to define "major sources" of pollution under the Clean Air Act. Likewise, when MPCA makes its annual inspection commitments to EPA, it classifies facilities based on their actual or potential emissions, contrary to MPCA's statement above.[4]

As shown in the box at right, Water Gremlin has consistently exceeded the threshold by which EPA has defined facilities that should be inspected at least every five years. Since 2002, Water Gremlin's purchases of a single hazardous air pollutant (TCE) were limited in its air quality permits to an average of 31,666 pounds per month. The permits said: "Total [hazardous air pollutant] Usage shall be calculated based on purchase records of all HAP-containing materials and corresponding material composition." As shown in the box, this means that the permits authorized Water Gremlin to emit up to 9.5 tons per year of purchased TCE, compared with the ten-ton-per-year threshold that defines major sources of pollution. In other words, Water Gremlin's permits have consistently authorized potential emissions of more than 80 percent of the major-source threshold, meaning that the company should have been inspected at least once every five years.

Water Gremlin's Authorized Emissions from Purchased TCE were 9.5 Tons per Year, which was above the 8.0-Ton Threshold Requiring Inspections Every Five Years

- Since 2002, Water Gremlin's permits limited the company's TCE purchases to a rolling average of 31,666 pounds per month—or 379,992 pounds per year.
- 379,992 pounds/2,000 = a limit of 190 tons of TCE purchased per year.
- The permits required Water Gremlin to have equipment that controlled 95 percent of the TCE emissions. This translated to a limit of 9.5 tons of emissions annually from purchased TCE. (190 tons x 0.05 = 9.5 tons of emissions)

After Water Gremlin received its initial air quality permit in 2000, MPCA air quality staff inspected the facility in 2004, 2012, and 2017.[5] The eight-year gap between the

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[3] Craig McDonnell, Assistant Commissioner, Minnesota Pollution Control Agency, attachment to e-mail to Joel Alter, Office of the Legislative Auditor, "MPCA Follow-up," January 17, 2020. McDonnell said the MPCA responses to Alter's questions were prepared by staff from the agency's permitting, compliance and enforcement, and legal services units.

[4] Several years ago, in response to an MPCA proposal, EPA gave MPCA more flexibility regarding which facilities it selected for inspections. Specifically, MPCA proposed to inspect major-source facilities less often than EPA's every-two-years requirement. This allowed MPCA to schedule more inspections of synthetic minor facilities. MPCA assured the EPA that it would inspect at least once every five years each synthetic minor facility with actual or potential emissions of at least 80 percent of the major-source threshold.

[5] The MPCA inspections identified no significant noncompliance, although the 2012 inspection said that Water Gremlin's operations and maintenance plan needed improvement.

2004 and 2012 inspections did not comply with EPA's requirements for inspection frequency.

In addition, MPCA told us that, from 2011 to 2016, the agency's records incorrectly classified Water Gremlin as a facility with the potential to emit less than 80 percent of the major-source emission threshold. Although MPCA failed to meet federal requirements by conducting a second inspection of Water Gremlin in 2009 or earlier, the misclassification that occurred in 2011 had the potential to cause additional problems with Water Gremlin's inspection frequency. With this incorrect classification, the facility would not have been subject to mandatory inspection at least every five years. MPCA implemented a new information system (called TEMPO) in 2016 that identified the previous classification error, and agency officials believe this system now generates more accurate lists of facilities requiring inspection.

It is possible that staffing or funding constraints have affected MPCA's inspection frequencies for facilities, including Water Gremlin. As one air quality inspector told us, "We are always short on resources. It's not just the number of staff, it's the experience [levels of those staff]." In 2019, MPCA's manager of land and air compliance in the agency's Industrial Division wrote the following to the MPCA commissioner:

> Compliance and enforcement staff numbers have slowly but steadily declined over the past 20 years. 15-20 years ago most programs [had] time and staff to formulate and execute special initiatives relating to industry sectors or emerging pollutants of concern, or conduct additional compliance inspections or outreach above and beyond federally required commitments. Currently programs that have federal commitments struggle to meet the minimum requirements and do not typically have the time/staff to engage in more preventative strategies.[6]

We requested and obtained MPCA historical staffing data for employees who work on air quality compliance and enforcement. MPCA cautioned that the data had to be pieced together, and there may be inconsistencies. According to the data, the number of full-time-equivalent staff assigned to conducting air quality facility inspections fluctuated over time, ranging from 11 to 14 per year from 2008 through 2020.[7] MPCA told us that it requested in 2020 and will request again in 2021 funding for additional air quality permitting, compliance, and enforcement staff.

RECOMMENDATION

MPCA should ensure that it complies with federal requirements for inspection frequency.

At a minimum, MPCA should meet federal standards for inspection of emission facilities. There should not have been an eight-year gap between MPCA's Water Gremlin inspections; the federal standard called for inspection of this type of facility no

[6] Sarah Kilgriff, MPCA, document presented to MPCA Commissioner Laura Bishop, September 19, 2019.

[7] According to the MPCA data, the staffing levels were at their highest (14 FTE) in 2010 and 2020; they were at their lowest levels (11 FTE) in 2012, 2013, 2014, and 2017.

less than once every five years. Furthermore, as an MPCA manager suggested to us, a facility that emits TCE should perhaps receive an elevated priority in the inspection schedule, due to the potential health risks posed by this chemical.

We do not know if Water Gremlin's noncompliance would have come to light sooner if MPCA had conducted at least one additional inspection of the facility after 2000. If, as MPCA's air quality compliance manager told us, it was difficult for inspectors to know from mere observation that the company was diverting condensed TCE into a barrel for later re-use, Water Gremlin's violations might not have been detected with more on-site inspections. However, MPCA's stipulation agreement asserts that the company was not complying with its permit during the full eight-year period between the 2004 and 2012 inspections, so the absence of an additional (or earlier) inspection represented a missed opportunity by MPCA to identify problems—either from on-site observation or a review of the company's records. As we discuss later in this chapter, MPCA inspectors during the 2004-2012 period would not have needed to do an on-site inspection to learn that Water Gremlin was re-using TCE; a review by MPCA of emission reports the company submitted to MPCA during that period would have indicated this critical fact.

Review of Emission Inventories

Water Gremlin is subject to federal and state requirements for annually reporting its emissions. Below, we discuss those requirements, the company's reported emissions, and use of emission reports by MPCA compliance staff.

Federal Requirement

In 1986, the U.S. Congress passed legislation that required companies that produce or use toxic chemicals to file reports with the Environmental Protection Agency (EPA).[8] Certain manufacturing companies had to submit their first reports in 1988, and this reporting continues today. These reports are compiled into an annual, publicly available "Toxics Release Inventory" (TRI). According to one federal source,

> Legislators and other supporters believed that the inventory would enable government regulators to better gauge the efficacy of existing environmental programs and more effectively set future regulatory priorities by providing a more comprehensive picture of the quantity of toxic pollutants entering the air, ground, and water from year to year.[9]

State Requirement

In 1992, MPCA adopted rules that required individual facilities to submit "annual emission inventory reports" to MPCA. Under current rules, companies that are required to have air quality permits must report annually to MPCA on their emissions of

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[8] The Emergency Planning and Community Right-to-Know Act of 1986, Public Law 99-499, October 17, 1986. This law was passed in the wake of the 1984 release of toxic emissions at a Bhopal, India, Union Carbide plant, which killed at least 3,800 people.

[9] U.S. General Accounting Office, *Toxic Chemicals: EPA's Toxic Release Inventory Is Useful but Can Be Improved* (Washington, DC, June 1991), 12.

specified pollutants, including volatile organic compounds (one of which is TCE).[10] One reason for this "emission inventory" is that MPCA calculates facilities' state-required emission fees on the basis of the amounts of emissions reported in the inventory.

Volatile Organic Compounds (VOCs)

VOCs consist of a variety of chemical gases emitted from liquids or solids. Exposure to VOCs can cause health effects; some are suspected or proven carcinogens. VOCs also contribute to the development of ground-level ozone, which can have adverse impacts on human health and causes smog.

— MPCA, "Volatile Organic Compounds"

While state rules require facilities to annually report their aggregate emissions of volatile organic compounds, facilities are not required to separately report on each individual type of volatile organic compound they emit. In addition, there is no state-required reporting of "air toxics" other than volatile organic compounds and lead. Rather, since the late 1990s, MPCA has asked facilities to voluntarily report on their emissions of individual air toxics once every three years.

Water Gremlin's Reported Emissions

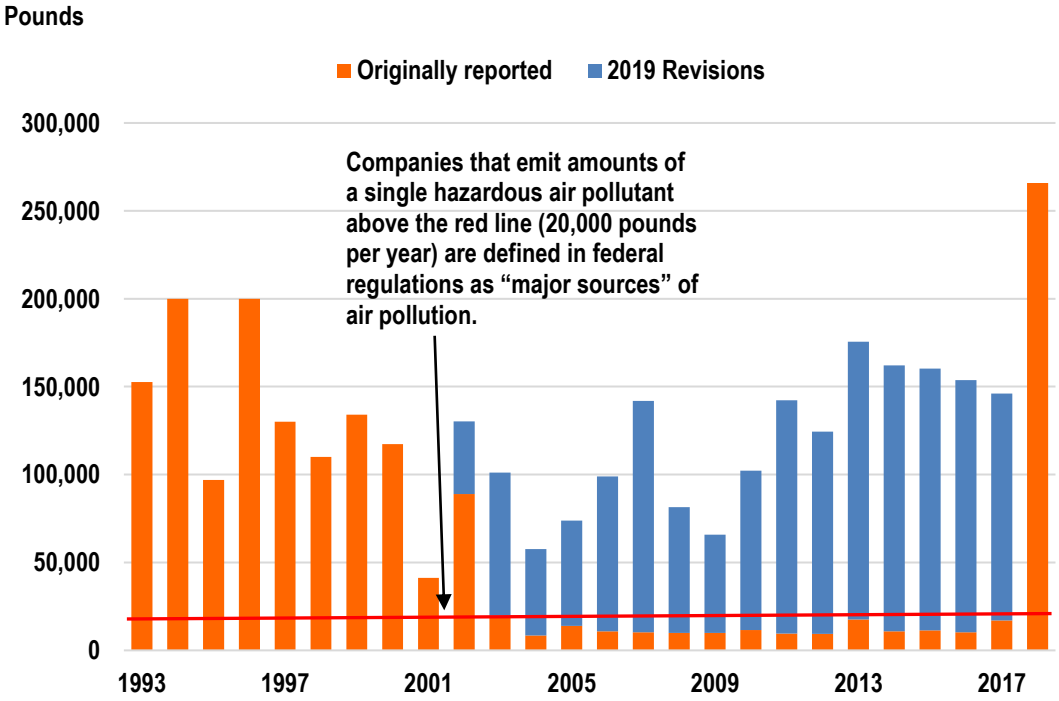
Exhibit 3.1 shows the emissions of trichloroethylene reported by Water Gremlin to federal or state agencies for calendar years 1993 through 2018. That exhibit shows that Water Gremlin's originally reported trichloroethylene emissions exceeded the "major source" threshold in every year between 1993 and 2002. (Under the 1990 amendments to the federal Clean Air Act and subsequent regulations, a facility that emitted (or had the potential to emit) more than ten tons of a single hazardous air pollutant in a given year was among the facilities classified as a major source.) Water Gremlin originally reported TCE emissions to the federal government that were below the ten-ton major-source threshold from 2003 through 2017.

For 2014 through 2018, the combined orange and blue lines in Exhibit 3.1 show that Water Gremlin's federally reported TCE emissions were far above the threshold that should have required a major-source permit. It is important to note, however, that Water Gremlin did not initially report to the federal government that its 2014-2017 emissions were nearly as high as they were. In 2019, after the company's excessive emissions had come to light, Water Gremlin submitted to EPA an amendment of its reported emissions for 2014-2017. For these four years, Water Gremlin's revised reported TCE emissions totaled 622,000 pounds, compared with a total of about 50,000 pounds originally reported.

In 2019, Water Gremlin submitted to MPCA revised estimates of its state-reported emissions for 2002 through 2017. Those estimates showed that—contrary to the amounts in the orange bars in Exhibit 3.1 for 2003 through 2013, which were below the ten-ton limit implicit in the company's permit—the company's annual TCE emissions

[10] *Minnesota Rules*, 7019.3000, subp. 1A, accessed September 16, 2020.

Exhibit 3.1: Pounds of Trichloroethylene Emissions Water Gremlin Reported (and Subsequently Revised), 1993-2018



NOTES: The amounts shown in this chart are reported emissions through the company's stack; they do not include unintended (or "fugitive") emissions. The amounts originally reported (in orange) are from the company's Toxics Release Inventory reports to the federal government. In 2019, Water Gremlin submitted revised emissions to MPCA, and those additional amounts are shown in blue for 2002-2013. In 2019, Water Gremlin submitted revisions to its previously reported federal Toxics Release Inventory amounts for 2014-2017, and those added amounts are shown in blue for those years.

SOURCE: Office of the Legislative Auditor, download of data from federal Toxics Release Inventory, https://www.epa.gov/toxics-release-inventory-tri-program/tri-basic-data-files-calendar-years-1987-2018, accessed February 13, 2020; revised amounts provided by Minnesota Pollution Control Agency and Environmental Protection Agency.

consistently exceeded the ten-ton annual threshold.[11] Water Gremlin's 2019 revisions indicated that the company's median annual level of TCE emissions during 2002 through 2017 was 63.7 tons.[12]

Use of Emission Inventory Data by MPCA Compliance Staff

Among the alleged violations cited by MPCA in its 2019 stipulation agreement with Water Gremlin were: (1) emissions that exceeded what the company's permit allowed

[11] Water Gremlin emitted only one hazardous air pollutant and volatile organic compound (TCE) during this period, so the company's reports on its aggregate volatile organic compound emissions were equivalent to its TCE emissions.

[12] MPCA estimated that the previously underreported emissions had resulted in Water Gremlin underpaying its emission fees from 2002 through 2016 by more than $53,000.

and (2) several emission sources that MPCA said had not been previously reported in the company's annual emission reports to MPCA.

MPCA compliance and enforcement staff told us they do not necessarily examine information reported in federal or state emission inventories as part of the inspection process.

MPCA's 2019 stipulation agreement said: "[Water Gremlin] estimates that [four lead melt pots] were constructed in 1991 and have never been reported in any Emissions Inventory Report."[13] This violation was not detected in MPCA's prior inspections (2004, 2012, and 2017). While MPCA listed these four melt pots in each of Water Gremlin permits and permit amendments, MPCA inspections never cited the company for failing to report emissions from these sources in its annual emission inventories. An MPCA inspector told us the inspection process verified that Water Gremlin had submitted its required emission inventories to MPCA, but did not determine whether the emission sources identified in these inventories were fully consistent with on-site observations about the company's emission sources.[14] The inspector said:

> That's not typically something that an inspector would verify, I guess. That sounds silly, doesn't it? We really should. We make sure they submit the emissions inventory, …but we don't take it with us and verify [that] what's on site matches. That's not part of our practice.

Similarly, an MPCA manager told us that inspectors traditionally do not review the emission inventories as part of preparation for an inspection. The manager acknowledged that this "sounds odd." However, the manager said inspectors focus mainly on a company's compliance with what is required in the permit, as well as information reported by the company's "deviation reports" and whatever inspectors learn from company officials during the on-site inspection.[15] The manager said that MPCA would have cited Water Gremlin for failure to report on all emission sources in its emission inventories if this had been detected during the MPCA inspections—but it was not.

Review of the emission inventory reports by the MPCA inspectors could also have shed light at an earlier date on Water Gremlin's practice of re-using TCE. The individuals who conducted MPCA's inspections of Water Gremlin in 2012 and 2017 told us they were unaware that Water Gremlin was re-using its TCE, but we found that the company regularly reported information to MPCA on its re-use of TCE. Specifically, Water Gremlin's emission inventory reports to MPCA provided information on the amounts of

[13] Minnesota Pollution Control Agency, "Stipulation Agreement: In the Matter of Water Gremlin Company," March 1, 2019.

[14] The inspector said the Water Gremlin inspection focused primarily on the main emission control equipment (the fluidized bed organics recovery system) and not on the lead melt pots.

[15] Permits may require companies to immediately report to MPCA "deviations endangering human health or the environment." In addition, permits may require companies to periodically submit "deviation reports" regarding (1) excess emissions recorded by continuous emission monitoring systems or (2) "deviations recorded by periodic monitoring systems, deviations of permitted operating conditions and surrogate parameters whether recorded periodically or continuously, or potential excess emissions identified through recordkeeping" (Minnesota Pollution Control Agency, Deviation Reporting Form, 1).

TCE the company re-used for the years 2004 through 2012.[16] Thus, if MPCA inspectors had reviewed any of Water Gremlin's emission inventories for this nine-year span, they could have seen that the company was both purchasing and re-using TCE.

Also, by not examining emission inventories, MPCA compliance and enforcement staff would not see if a company's self-reported emissions have exceeded its authorized levels. An MPCA manager told us that data from the federally required Toxics Release Inventory does not get submitted to the compliance unit, and an inspector we talked with reported being unfamiliar with this inventory prior to working on the Water Gremlin case. As indicated above, inspectors examine whether facilities have submitted their required annual reports to the state emission inventory, but they do not necessarily use the contents of these reports to assess compliance with other permit requirements.

RECOMMENDATION

MPCA should ensure that its compliance and enforcement staff make full use of information in federal and state emission inventories when assessing facility compliance with permit requirements.

MPCA told us that permittees have a duty to report excess emissions, and we agree. It is apparent that Water Gremlin inaccurately reported its emissions for many years. However, we also think it is reasonable for MPCA to implement steps for the agency to make full use of permittee self-reports when assessing compliance.

MPCA staff could have detected well before 2019 that Water Gremlin's state-required emission inventory reports were incomplete. This should have been apparent by comparing the emission sources disclosed in the air quality permit and those for which Water Gremlin reported emissions in state emission inventories. Although the company's failure to report on emissions from several lead melt pots may have been a small issue compared with its longstanding, excessive TCE emissions, MPCA told us it would have cited the company for these violations if the agency had detected this sooner.

MPCA would not have known from Water Gremlin's initial reports to the state emission inventory that the company's reported emission levels from 2003 through 2016 exceeded what the permit allowed. Water Gremlin's initial reports to both the federal and state inventories gave an inaccurately low picture of the company's emissions; it revised many of these reports years later. However, it is conceivable that other companies' emission inventory reports could sometimes disclose to MPCA exceedances that it would not otherwise detect. Thus, MPCA compliance and enforcement staff should routinely check records of facilities' self-reported emissions to help ensure that MPCA is not overlooking violations that have been disclosed elsewhere. MPCA told us it is now working to create reports—which will be shared with the agency's compliance and enforcement staff—that would compare the emission limits in facility permits with the yearly emissions reported by each facility.

[16] We reviewed all of MPCA's emission inventory records for Water Gremlin. The reports for calendar years 2004 through 2012 and for 2017 all explicitly showed the amount of TCE the company reported re-using. The company used different reporting formats in 2013 through 2016 that did not separately show re-used TCE.

Finally, MPCA's emission inventories indicated—for nine consecutive years—that Water Gremlin was re-using TCE, in addition to using newly purchased TCE. If MPCA had conducted an inspection during this period, and if its inspectors during or after this period had reviewed the emission inventories for 2004-2012, it would have been clear to MPCA that the facility was re-using TCE. Water Gremlin disclosed its re-use of TCE both in its 2001 permit application and in subsequent years' emission inventories it submitted to MPCA.

Enforcement Approach for 2000-2002

As discussed in Chapter 2, Water Gremlin installed a catalytic oxidizer in August 2000 to control its TCE emissions, shortly after it obtained its first air quality permit. However, the pollution control equipment did not work as planned. Water Gremlin was supposed to conduct an initial performance test of this equipment by November 24, 2000, but the company requested an extension of the test deadline when the equipment did not work properly. An e-mail from an MPCA staff person said:

> I believe that the company improperly avoided doing a [performance test] because they knew they were going to fail. I believe that they had an ongoing problem with their facility (noncompliance) that they didn't realize until the test. They should have completed the test. Unless they had a breakdown during the test, the results should count.[17]

MPCA granted a 120-day performance test extension, but the company continued to experience problems with the equipment. In March 2001, company officials met with MPCA to discuss delaying the performance test until new equipment could be installed. In July 2001, Water Gremlin entered into a contract with a company to install a different type of equipment—a fluidized bed organics recovery system.

In September 2001, MPCA entered into a "schedule of compliance" with Water Gremlin.[18] That document—a binding agreement signed by representatives of MPCA and Water Gremlin—alleged that Water Gremlin had violated its air quality permit by (1) not operating equipment that controlled its hazardous air pollutant and volatile organic compound emissions and (2) not conducting a performance test of that equipment following initial start-up. The agreement required Water Gremlin to install and test new equipment, and it directed the company to pay financial penalties if it failed to meet specified deadlines.[19]

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[17] Steve Sommer, Minnesota Pollution Control Agency, e-mail to Rhonda Land, Minnesota Pollution Control Agency, "Water Gremlin," November 28, 2000.

[18] Minnesota Pollution Control Agency, "Schedule of Compliance: In the Matter of Water Gremlin Company" (September 25, 2001).

[19] The schedule of compliance specified penalties that would range from $250 to $1,000 per day for violating various deadlines in the agreement. The new equipment was to be installed within 21 days of (1) November 30, 2001, or (2) the company's receipt of MPCA's "permit authorization," whichever was later. Water Gremlin was required to conduct a test of the new equipment within 45 days of installation. On February 4, 2002, MPCA issued a public notice on the proposed air quality permit amendment related to the new equipment, and this document said that the new equipment would be installed over a period of 16 days. Thus, the equipment was installed sometime between that date and the equipment's test date (April 10, 2002).

Water Gremlin reported TCE emissions for 2000 through 2002 that far exceeded what the company's 2000 permit allowed, but MPCA did not levy a financial penalty for violating the emission limits of its permit.

As one report described MPCA's enforcement actions in 2001-2002,

> MPCA [compliance and enforcement] staff regarded this as a situation where Water Gremlin tried to comply with its permit, but had a bad experience with its chosen [air pollution control]. This has happened with other permittees and the MPCA has tried to resolve the situations as cooperatively as possible, recognizing that it is, nonetheless, a violation of a permittee's permit. The MPCA typically uses a Schedule of Compliance (SOC), which does not carry a civil penalty to resolve such situations. MPCA [compliance and enforcement] staff entered into a SOC with Water Gremlin to resolve the noncompliance and put Water Gremlin on an enforceable schedule to come into compliance.[20]

While MPCA used the schedule of compliance to get Water Gremlin to install new pollution control equipment, we did not see any evidence that MPCA levied any financial penalties against Water Gremlin for emission levels that violated the 2000 permit. The nature of these violations emerged when Water Gremlin reported to the federal Toxics Release Inventory on its actual TCE emissions.[21] Although MPCA issued a "synthetic minor" permit to the company starting in 2000—meaning that the company's TCE emissions (or potential emissions) must not exceed ten tons per year—Water Gremlin's federally reported TCE emissions in 2000, 2001, and 2002 were 58, 21, and 44 tons in those years, respectively.

We think it is reasonable that MPCA has latitude to make judgments about how best to bring a company into compliance. In this case, MPCA thought that a 2001 schedule of compliance could get Water Gremlin to comply with its permit going forward. But, looking back, it is worth noting that Water Gremlin started its long history of permit noncompliance as soon as its initial (2000) air quality permit was issued, and it received no financial penalties for noncompliance until the 2019 stipulation agreement.[22] If MPCA had issued penalties for permit violations—based on publicly available data for

[20] Kathleen Winters, *An Evaluation of the Minnesota Pollution Control Agency's Permitting and Enforcement Actions Regarding Water Gremlin Company*, prepared for the Minnesota Pollution Control Agency (St. Paul, January 2020), 13. This report was initially prepared in January 2020 but underwent the author's subsequent revisions to style and content in March, July, and October 2020.

[21] EPA publicly releases "preliminary data" on companies' Toxics Release Inventory reports about seven months after the end of the year on which the reporting was based. Thus, data on Water Gremlin's excessive emissions in 2000 would have been publicly available in mid-2001, and information on its 2001 emissions would have been available in mid-2002.

[22] MPCA officials told us they cannot say with certainty today why the agency did not take different actions nearly 20 years ago. They said the agency's enforcement actions consider a violation's magnitude and potential for harm, as well as the regulated party's willfulness, enforcement history, and economic benefit, among other factors.

2000 to 2002—perhaps this would have sent a stronger message to Water Gremlin, possibly affecting the company's compliance in subsequent years.[23]

Clarity of Responsibilities for Hazardous Waste Enforcement in Twin Cities Metropolitan Area

State law provides MPCA with broad responsibilities for regulating air, water, and land pollution in Minnesota. For example, state law gives MPCA authority to "adopt, issue, reissue, modify, deny, revoke, enter into or enforce reasonable orders, schedules of compliance and stipulation agreements" related to "air contamination or waste."[24] Likewise, the law authorizes MPCA to require regulated facilities to keep records, make reports, install equipment, and conduct tests, and it authorizes MPCA to issue permits, issue notices, and conduct investigations.[25]

MPCA and county agencies both play roles in hazardous waste regulation in the Twin Cities metropolitan area.

Responsibility for enforcing hazardous waste regulations varies around the state. MPCA is fully responsible for regulating hazardous waste in counties outside the Twin Cities metropolitan area. In contrast, state law requires the seven counties in the Twin Cities metropolitan area to establish ordinances, regulations, and standards related to hazardous waste.[26] The law says: "County hazardous waste ordinances may not be inconsistent with, and must be at least as stringent as, the [MPCA] hazardous waste rules."[27] The law also authorizes the metropolitan counties to enforce local and state regulations:

> Each metropolitan county shall be responsible for insuring that waste facilities, solid waste collection operations licensed or regulated by the county and hazardous waste generation and collection operations are brought into conformance with, or terminated and abandoned in accordance with, applicable county ordinances; rules and requirements of the state; and the policy plan.[28]

In practice, the responsibility for enforcement of hazardous waste regulations in the seven-county Twin Cities metropolitan area is shared by MPCA and the counties. As noted above, MPCA has broad statutory enforcement authority related to pollution, including enforcement of hazardous waste regulations. In addition, MPCA makes commitments to EPA regarding the number and type of hazardous waste inspections

[23] In addition, as noted in Chapter 2, MPCA did not require performance tests of Water Gremlin's pollution control equipment after April 2002, which may have allowed Water Gremlin's subsequent noncompliance with its permit to go undetected.

[24] *Minnesota Statutes* 2020, 116.07, subd. 9.

[25] *Ibid.*

[26] *Minnesota Statutes* 2020, 473.811, subd. 5b.

[27] *Ibid.*

[28] *Minnesota Statutes* 2020, 473.811, subd. 5c.

that it will oversee in a given year throughout Minnesota on EPA's behalf. When MPCA conducts a hazardous waste inspection in the Twin Cities area, it invites county staff to participate, but with the understanding that MPCA will be the lead agency. As an MPCA hazardous waste compliance manager told us, "We work with the metro counties to help with compliance and enforcement when they ask for help, or if we feel the need to step in."

Over the years, hazardous waste inspections at the Water Gremlin facility were conducted solely by Ramsey County until September 2019.[29] MPCA did not participate in these inspections, and the inspections did not count toward MPCA's inspection commitments to EPA.

On September 4, 2019, an MPCA air quality inspection identified possible hazardous waste issues at Water Gremlin that were then referred to MPCA's hazardous waste staff.[30] MPCA told us it then conducted about ten hazardous waste inspections of Water Gremlin between September 2019 and September 2020—some with Ramsey County, and some on its own. Hazardous waste inspections by MPCA and Ramsey County staff in late 2019 identified long-standing problems with hazardous waste contamination inside the Water Gremlin facility. According to MPCA,

> …Water Gremlin submitted a report to the MPCA that outlined the amount of waste that had accumulated under 10 coaters that used TCE and tDCE [trans-1,2-Dichloroethene] for coating lead parts. Water Gremlin reported that approximately 332 lbs. of hazardous waste had spilled onto the floor underneath the 10 coaters over the past approximately 15½ years. Approximately 300 of those lbs. were also contaminated with TCE.[31]

MPCA staff told us that Water Gremlin underreported the volume of hazardous wastes it generated for an extended period of time.[32] And, as MPCA indicated in the statement above, the contamination of some floors and walls at Water Gremlin had accumulated over a long period. Because these problems were longstanding, it is reasonable to ask whether regulators should have detected the problems sooner. Some current and former MPCA staff we spoke with questioned whether state and county regulators exercised adequate oversight of hazardous waste at Water Gremlin, in addition to suggesting that the company should have handled its hazardous wastes better over time.

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[29] The Water Gremlin facility is located in Ramsey County.

[30] An air quality inspector noticed stains and crusty material beneath a Water Gremlin coating machine on which the company had removed the front panel while converting the coater to a water-based solvent.

[31] Minnesota Pollution Control Agency, "Administrative Order: In the Matter of Water Gremlin Company" (November 5, 2019), 2. MPCA's statements in the order included the following: "Water Gremlin failed to maintain and operate its facility in compliance with Minnesota law" (p. 3). "Water Gremlin failed to stop releases of used oil to the environment" (p. 4). "Water Gremlin failed to use proper procedures for containing used oil, waste containing used oil, and other hazardous waste" (p. 4). "Water Gremlin discharged waste and pollutants that polluted underground water" (p. 5).

[32] MPCA said Water Gremlin was regulated as a "small quantity generator" of hazardous waste for many years, although it was, in fact, a "large quantity generator." In addition, MPCA determined that some of Water Gremlin's pollutants contaminated stormwater at the facility site, which violated the company's attestations over many years.

An unclear division of hazardous waste enforcement responsibilities between MPCA and Ramsey County may have contributed to Water Gremlin's lack of compliance.

The dual state and county responsibilities in statute for Twin Cities area hazardous waste regulation create potential for unclear boundaries. In one county (Hennepin), MPCA has taken a very tangible step to clarify those boundaries. Years ago, MPCA entered into a joint powers agreement with Hennepin County that specifies the respective obligations of MPCA and that county to regulate hazardous waste generators.

On the other hand, there is no joint powers agreement between MPCA and Ramsey County (or any of the other metropolitan area counties), and there is no requirement for such agreements in statute. An MPCA official told us that MPCA would welcome joint powers hazardous waste agreements with each county in the Twin Cities area, but the counties have not been interested. As a result, the official said, there can be inconsistencies in the protocols and practices used by MPCA and the counties.

For example, MPCA cited Water Gremlin in late 2019 for violations of certain hazardous waste regulations, but MPCA staff told us that Ramsey County (which had done the hazardous waste inspections of Water Gremlin prior to 2019) had been operating with different interpretations of those regulations than had MPCA. First, in a November 2019 administrative order, MCPA said that Water Gremlin (1) had recycled some hazardous wastes as if they were "feedstock" and therefore exempt from certain state hazardous waste rules but (2) could not demonstrate to MPCA that the use of these wastes qualified for the feedstock exemption. Second, MPCA's order said that Water Gremlin evaporated some hazardous wastes in a boiler at its facility but did not have a permit to do so. An MPCA inspector told us that the MPCA and Ramsey County policies and practices on these issues were not "aligned"—that is, MPCA does not allow certain practices for managing hazardous wastes as feedstock and evaporating hazardous waste that Ramsey County was allowing. A former Water Gremlin official expressed concern to us that MPCA cited the company for hazardous waste management practices that the official said had been acceptable to the county's inspectors in the years prior to 2019.

RECOMMENDATIONS

- **MPCA should take additional steps to ensure that there is common understanding and application among Twin Cities area counties of state hazardous waste regulatory requirements.**

- **The Legislature should consider amending state law to require MPCA to enter into joint powers agreements with all Twin Cities metropolitan area counties so that the division of hazardous waste regulatory responsibilities is clearer.**

Perhaps state or county inspectors should have detected Water Gremlin's hazardous waste violations sooner. If so, however, it is hard to determine which entity—MPCA or Ramsey County—should be held accountable for this failure because their respective roles in hazardous waste compliance and enforcement had not been adequately specified.

Without greater clarity, there is room for inconsistent interpretations by state and county regulators—as was the case at Water Gremlin. MPCA has tried to ensure consistency by holding monthly meetings with hazardous waste representatives from counties in the Twin Cities metropolitan area. During these meetings, MPCA has discussed hazardous waste policies and their interpretation, recent enforcement actions, and upcoming inspection plans, among other topics. But some inconsistencies have persisted—and, again, MPCA has a formal agreement with only one of the seven metropolitan counties that explicitly outlines the division of state and county responsibilities.

Because the Twin Cities metropolitan counties are helping to fulfill a role that MPCA fulfills entirely on its own in nonmetropolitan counties, it is important for the metropolitan counties to have a clear understanding of how they should accomplish this. Joint powers agreements could spell out the respective state and county responsibilities, and they could also clarify the protocols and procedures that should be used for hazardous waste inspections. In addition, joint powers agreements can establish minimum training requirements for county inspection staff and standards for how inspections should be documented.

In addition, with a clearer division of responsibilities, perhaps some county inspections could be used to comply with the state's inspection commitments to EPA—as they do in Hennepin County, which has a joint powers agreement with MPCA.[33] This might contribute to a more efficient allocation of county and state resources.

MPCA officials told us that joint powers agreements are not a "silver bullet" for ensuring consistent hazardous waste regulatory practices, and we agree. Counties will always exercise some discretion as they enforce hazardous waste regulations, as does MPCA. But, even if MPCA does not enter into joint powers agreements with additional Twin Cities area counties, MPCA should strive to ensure—through its training sessions, monthly meetings with county representatives, and guidance—that MPCA and counties have shared understandings of statewide hazardous waste regulations and appropriate enforcement practices.

[33] Of the seven metropolitan counties that conduct inspections, EPA counts inspections by only one county—Hennepin, with its joint powers agreement with MPCA—toward the inspection commitments MPCA makes annually to the federal government.


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List of Recommendations

- MPCA should ensure that it complies with federal requirements for inspection frequency. (p. 32)

- MPCA should ensure that its compliance and enforcement staff make full use of information in federal and state emission inventories when assessing facility compliance with permit requirements. (p. 37)

- MPCA should take additional steps to ensure that there is common understanding and application among Twin Cities area counties of state hazardous waste regulatory requirements. (p. 42)

- The Legislature should consider amending state law to require MPCA to enter into joint powers agreements with all Twin Cities metropolitan area counties so that the division of hazardous waste regulatory responsibilities is clearer. (p. 42)


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Appendix: Timeline of Key Events through 2019

This report discusses the Minnesota Pollution Control Agency's (MPCA) oversight and regulation of Water Gremlin over the past 25 years. Below, we present a timeline of selected events during that period, through the end of 2019.

June 1995	Water Gremlin applies for its first air quality permit from MPCA; no record of an MPCA response.
September 1999	Water Gremlin submits a new air quality permit application to MPCA and proposes to install a catalytic oxidation pollution control system.
July 2000	MPCA issues air quality permit to Water Gremlin.
July 2001	Water Gremlin applies for an air quality permit amendment—proposing to install different pollution control equipment after experiencing problems with existing equipment.
September 2001	Water Gremlin and MPCA enter into a "schedule of compliance" regarding noncompliance of the company with its 2000 permit.
March 2002	MPCA approves an air quality permit amendment for Water Gremlin, authorizing the company's installation of a fluidized bed organics recovery system.
April 2002	Water Gremlin conducts a performance test that demonstrates that its new pollution control equipment is controlling at least 95 percent of emissions.
February 2003	Following significant repairs to the fluidized bed pollution control equipment at an off-site location, the equipment is reinstalled and restarted.
January 2004	An MPCA air quality inspection determines that Water Gremlin is in "general compliance" with its air quality permit.
July 2005	Following continuous overheating, Water Gremlin determines that part of its pollution control equipment must be shut down and rebuilt.
September 2006	MPCA approves an air quality permit amendment for Water Gremlin, pre-approving future installation of coaters at the facility without subsequent MPCA authorization.
February 2012	An MPCA air quality inspection finds that Water Gremlin needs to update its operation and maintenance plan but cites no other compliance issues.
February 2017	An MPCA air quality inspection of Water Gremlin finds no evidence of noncompliance with the company's air quality permit.
July 2018	Water Gremlin submits an "environmental audit" to MPCA that discloses multiple violations of its air quality permit.
September 2018	First meeting between Water Gremlin and MPCA officials to discuss the environmental audit, more than seven weeks after Water Gremlin submitted the audit.
November 2018	MPCA sends Water Gremlin an "alleged violations letter," outlining violations that may result in enforcement actions and requesting additional information from the company.

January 2019	Additional data provided by Water Gremlin to MPCA leads to heightened concern at MPCA about the nature of the violations. After a meeting with MPCA to discuss these concerns, Water Gremlin agrees to cease its trichloroethylene coating operations.
February 2019	Water Gremlin notifies MPCA that it is permanently discontinuing use of trichloroethylene, and that it has removed this solvent from the facility.
March 2019	MPCA and Water Gremlin enter into a stipulation agreement related to alleged air quality permit violations.
August 2019	MPCA issues an administrative order directing Water Gremlin to immediately cease all solvent-based coating operations in response to evidence that the company has released some of its new solvent (tDCE) into soil vapor beneath the plant.
October 2019	Minnesota Department of Labor and Industry orders Water Gremlin to temporarily cease operations related to lead products. District court orders plant to remain shut down temporarily.
October 2019	MPCA sends an “alleged violations letter” to Water Gremlin regarding issues found during September 2019 hazardous waste inspections.
November 2019	District court lifts its temporary injunction against Water Gremlin but directs the company to comply with safety requirements.
November 2019	MPCA issues an administrative order to Water Gremlin, directing the company to make improvements in its management of hazardous wastes.

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James Nobles, Legislative Auditor
Joel Alter, Director of Special Reviews
Office of the Legislative Auditor
658 Cedar Street
St. Paul, Minnesota 55155

January 29, 2021

Dear Mr. Nobles and Mr. Alter:

Thank you for the opportunity to review and respond to the Office of the Legislative Auditor's (OLA) special review of the Minnesota Pollution Control Agency's (MPCA or Agency) regulation and oversight of Water Gremlin from approximately 1995 through 2019. Water Gremlin's significant non-compliance came to my attention during my first weeks as the new MPCA Commissioner in January 2019. Upon discovering Water Gremlin's egregious violations, the Agency acted swiftly and decisively to hold the company accountable. Water Gremlin's operations and compliance remain a focus of the agency today.

The MPCA is committed to continuous improvement and has built a culture where learning is valued. The Agency welcomes reviews and assessments, like the OLA's special review, and is dedicated to finding and implementing opportunities for improvement. It must be noted that regulated parties are required under federal and state law to submit accurate and timely information to regulatory agencies.

Submitting misleading or false information is a serious violation and subject to enhanced enforcement, such as increased penalties and stringent corrective actions. Regulated parties that violate these fundamental requirements, must be held accountable. That is why the MPCA took legal and enforcement action against Water Gremlin, and continues to hold the company accountable.

COMMITTED TO PROTECTING FAMILIES AND COMMUNITIES FROM POLLUTION

The MPCA concurs with your review that there were inadequacies related to Water Gremlin's air quality permit when issued in 2002. Those inadequacies made it possible for Water Gremlin's emissions exceedances to go undiscovered for too long.

Recognizing the need for more rigorous processes, the Agency started implementing improvements more than a decade ago to strengthen its permitting program, greatly reducing future compliance oversights. Since becoming commissioner in 2019, I have instituted additional improvements in the permitting and compliance and enforcement programs to ensure that the Agency further limits such egregious violations by regulated parties. While the MPCA has made steady progress, we continue to work on necessary improvements that ensure families and communities are protected from pollution.

Improved Air Permitting and Enforcement Programs

The OLA report has focused on the MPCA's actions with Water Gremlin from 1995 to 2019, which spans periods of significant change in the MPCA's air permitting program. Historical and recent improvements made to the MPCA's air quality permitting, and compliance and enforcement programs, have greatly enhanced the Agency's ability to identify permit deficiencies during the development process and identify future compliance problems that might arise. These changes have significantly improved programmatic consistency, helping the MPCA issue better permits and improve compliance with more stringent permit conditions. However, self-reporting obligations of the regulated party, including Water Gremlin, are still a corner-stone of the permitting and compliance programs. It cannot be minimized; Minnesotans expect permitted regulated parties to submit accurate and complete information or face consequences.

The MPCA agrees with the OLA's findings that Water Gremlin's 2002 permit did not contain adequate controls on the use of TCE and did not require the company to verify that its pollution control equipment worked properly after installation.

However, the MPCA has made significant improvements to its permit review processes since Water Gremlin's 2002 air permit amendment was issued. The MPCA has developed comprehensive administrative and technical checklists that clearly identify required information in permit applications, and what an engineer needs to consider when writing an air permit. Over the years, the program has increased consistency by developing a library of permitting templates and requirements that are continuously refined and reviewed by the permitting program. New engineering staff undergo rigorous training and mentoring, and all staff participate in regularly scheduled meetings to discuss and troubleshoot permitting issues and concerns, including meetings specifically focused on permit issuance improvements.

The MPCA has also enhanced its peer review process to strengthen its permitting process. Today, the MPCA has a dedicated corps of peer reviewers who follow established protocols and checklists, improving the consistency and reliability of peer reviews. In addition, compliance and enforcement inspectors review permits to ensure that the permit conditions are clear and enforceable. The MPCA believes that both the review and permitting processes in place today would have helped identify the fact that Water Gremlin planned to reuse trichloroethylene (TCE) in its operations as part of its 2002 permit amendment application.

Since Water Gremlin's 2000 and 2002 air quality permits were issued, the MPCA also has changed the ways in which it requires performance tests for pollution control equipment. Permittees no longer suggest initial performance test schedules; instead, performance testing and other monitoring requirements are established by the MPCA and the requirements are thoroughly documented in the permit so compliance can more easily be examined through the inspection process.

Lastly, the MPCA has been working to develop an emissions inventory database tool since January 2020 that will identify potential discrepancies between reported emissions and permitted limits. The review of emissions inventory reports by inspectors will be a tool that should help identify potential issues, but a review of an emissions report may not be sufficient to uncover all areas of non-compliance, especially if the report is based on incorrect data provided by the facility as in the case of Water Gremlin.

Consistent Hazardous Waste Program Enforcement

One of the hallmarks of any compliance and enforcement program is consistency. Through a consistent inspection approach, regulatory agencies can ensure that human health and the environment is protected, and that regulated parties are held to the same standard. Consistency both within the agency and among federal and local regulatory partners is a focus of the MPCA. The MPCA has taken steps, and is planning more, that ensure consistency in interpretation and enforcement of hazardous waste regulations.

For example, the MPCA'S hazardous waste team meets monthly with the metro counties to talk about current policy, rule interpretation, and other enforcement issues, and to provide training opportunities and support for counties on larger enforcement matters. These meetings are also useful for sharing information about open enforcement actions, providing advance notice about inspection plans, and identifying opportunities to collaborate.

The MPCA has also initiated discussions with metro counties about conducting joint hazardous waste inspections of selected facilities. We believe joint inspections will provide additional opportunities to remove inconsistencies in inspections and provide opportunities for training. The Agency intended to initiate co-inspections in March 2020, but this was put on hold due to the pandemic.

HOLDING WATER GREMLIN ACCOUNTABLE

Under federal and state law, Water Gremlin has a duty to accurately report its emissions, and its failure to accurately report emissions from 2002-2017 prevented the MPCA from taking action sooner. Water Gremlin also had a duty to certify the accuracy of the information it provides to the Agency when applying for a permit or permit amendment. In its 2002 permit amendment, Water Gremlin stated that its emissions would not change. This statement was inaccurate. A pillar of environmental regulation is accurate and truthful reporting by regulated parties; anytime a regulated party fails to accurately report information, it is problematic and hinders the ability of regulators to achieve their missions.

Water Gremlin was the first significant enforcement matter I dealt with in my tenure. In 2019, the MPCA twice shut down Water Gremlin's volatile organic compound (VOC) coating operations. The MPCA also required ambient air monitoring and strict emissions reporting requirements for Water Gremlin, and a thorough remedial site investigation of the soil and groundwater at its property and surrounding area. Water Gremlin will also be required to remediate any potential risk to human health and the environment resulting from that investigation.

I want to be clear; the MPCA wants our regulated parties, including Water Gremlin, to be successful, which means complying with state and federal laws and regulations and that communities are safe from pollution. In demonstration of this commitment, the MPCA is devoting significant resources, and engaging with the local community, to develop a major permit amendment that will address community concerns and incorporate all of the necessary requirements to ensure the facility operates in compliance with applicable regulations and permit conditions.

At the MPCA, our mission is to protect human health and the environment. This mission is embraced by everyone in our agency and in order to continue living up to our mission, we're committed to holding ourselves, and regulated parties, accountable.

Respectfully,

Laura Bishop
Commissioner

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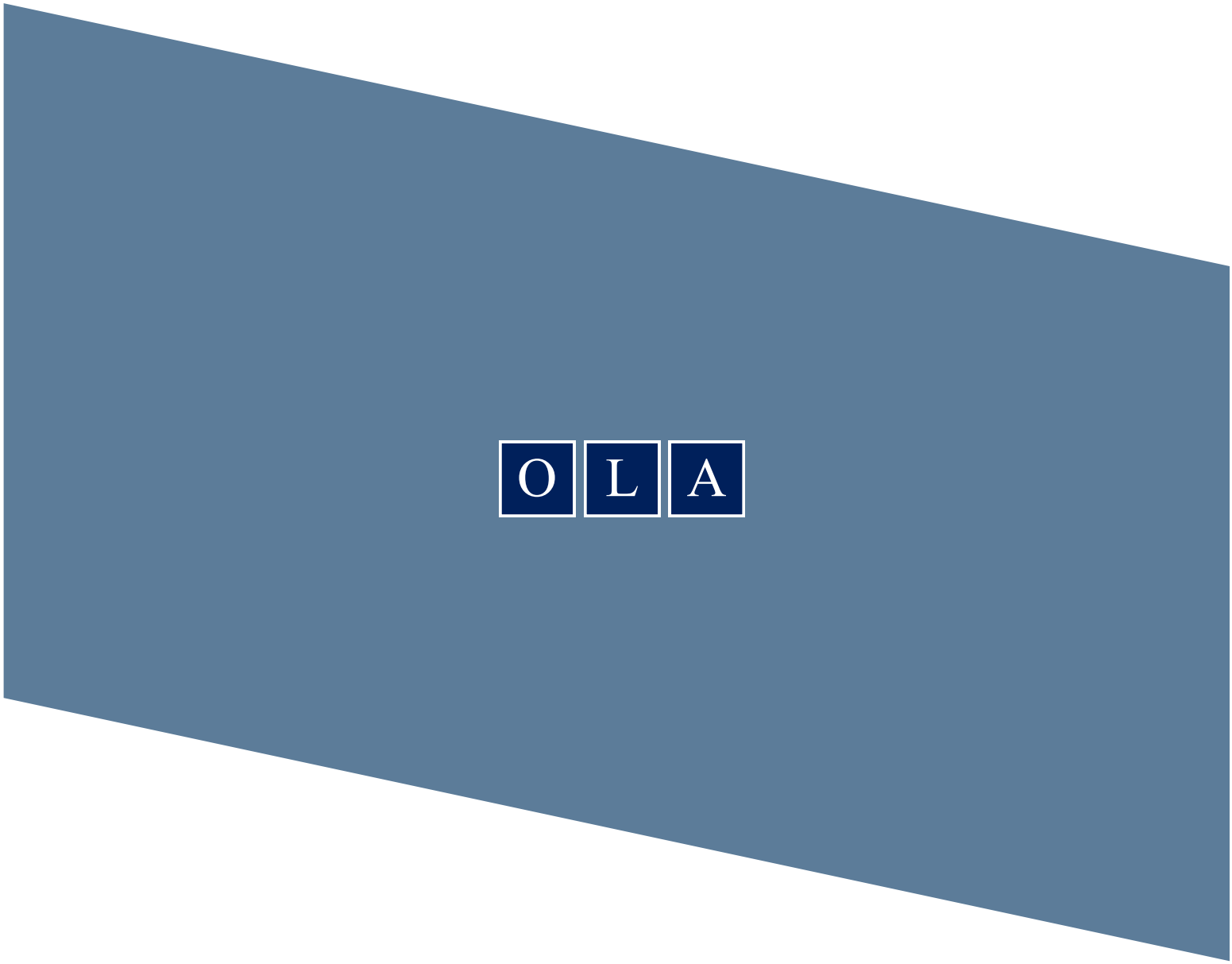

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