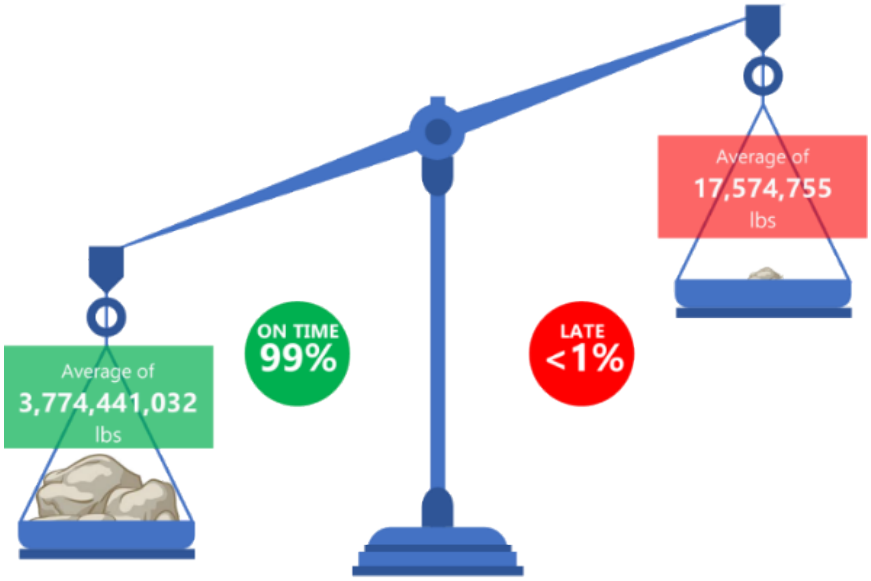
U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

Operating efficiently and effectively

Data Used for Annual Toxics Release Inventory National Analysis Are 99 Percent Complete, but EPA Could Improve Certain Data Controls

Report No. 20-P-0337 **September 30, 2020**



Report Contributors:

Christina Lovingood
Dwayne Crawford
Ben Beeson
Alana Morrell
Steve Hanna

Abbreviations

EPA	U.S. Environmental Protection Agency
POTW	Publicly Owned Treatment Works
TRI	Toxics Release Inventory

Cover Photo: Data used for the annual Toxics Release Inventory Analysis are 99 percent complete. (EPA OIG image)

U.S. Environmental Protection Agency
Office of Inspector General

20-P-0337
September 30, 2020

At a Glance

Why We Did This Project

We conducted this audit to determine the extent to which late reporting of Toxics Release Inventory data impacts the annual TRI National Analysis.

In 1986, Congress passed the Emergency Planning and Community Right-to-Know Act to provide the public with information about toxic chemical releases and support emergency planning. Facility owners or operators report to the U.S. Environmental Protection Agency by July 1 each year on each toxic chemical that they used in quantities exceeding the established toxic chemical threshold for the preceding calendar year. The chemical information collected and reported through the TRI provides citizens with the means to better understand pollution sources in their communities.

This report addresses the following:

- *Operating efficiently and effectively.*

This report addresses a top EPA management challenge:

- *Complying with internal control (data quality).*

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List of OIG reports.

Data Used for Annual Toxics Release Inventory National Analysis Are 99 Percent Complete, but EPA Could Improve Certain Data Controls

What We Found

The EPA's efforts to follow up with late reporters prior to "freezing" the data contributed to more complete data.

TRI release data that were reported late to the EPA accounted for an average of less than one-half of 1 percent, or 70.3 million of the 15.2 billion total pounds reported in the TRI annual reporting analysis from 2013 through 2016. The EPA publishes the annual TRI National Analysis to summarize the submitted TRI data, trends in the data, and findings from the perspective of human health and environmental protection. Although the official deadline for facilities to report data is July 1, the EPA accepts data submissions until it "freezes" the dataset in mid-October. For the purposes of this report, we considered data late if they are reported after the Agency freezes the dataset. The annual reports from 2013 through 2016 are based on a dataset that has more than 99 percent of the data.

Communities located near the facilities that reported late may not have access to current TRI data to make informed decisions. To improve data collection, the EPA prompts the facilities that missed the July 1 deadline to comply with TRI reporting requirements. Since this good practice is not documented as a standard operating procedure, the EPA runs the risk of not replicating this practice yearly.

We also identified control weaknesses concerning the reporting of the final disposition of chemicals that facilities transferred to a publicly owned treatment works, or POTW. Reporting facilities can edit the default "POTW distribution percentages" that the EPA uses to estimate the final disposition of chemical quantities transferred to a POTW. The EPA, however, cannot verify the validity of the data since the reporting facility is not required to provide evidence to the Agency supporting the edit. Current practices do not provide adequate controls to ensure the validity and accuracy of TRI data for chemicals transferred to POTWs, especially since facilities could alter the distribution percentages to report fewer chemicals released into the environment. Facilities' edits of certain TRI transfer data from 2014 through 2017 reduced the net pounds reported released by 3,354,235 pounds, or approximately 19 percent.

Recommendations and Planned Agency Corrective Actions

We recommend that the EPA continue to follow up with facilities that have not reported their data before the freeze date, analyze the impact of late-reported data, and establish controls over POTW distribution percentage edits to validate the accuracy of the data. In its response and subsequent communications, the Agency agreed with the recommendations and provided estimated milestone dates for its planned corrective actions. All recommendations are resolved.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

THE INSPECTOR GENERAL

September 30, 2020

MEMORANDUM

SUBJECT: Data Used for Annual Toxics Release Inventory National Analysis Are 99 Percent Complete, but EPA Could Improve Certain Data Controls
Report No. 20-P-0337

FROM: Sean W. O'Donnell

TO: Alexandra Dapolito Dunn, Assistant Administrator
Office of Chemical Safety and Pollution Prevention

David P. Ross, Assistant Administrator
Office of Water

This is a report on the subject audit conducted by the Office of Inspector General of the U.S. Environmental Protection Agency. The project number for this audit was OA&E-FY18-0002. This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The Office of Chemical Safety and Pollution Prevention and the Office of Water were responsible for the issues discussed in this report.

Your offices provided acceptable corrective actions and estimated milestone dates in response to OIG recommendations. All recommendations are resolved, and no final response to this report is required. However, if you submit a response, it will be posted on the OIG's website, along with our memorandum commenting on your response. Your response should be provided as an Adobe PDF file that complies with the accessibility requirements of Section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that you do not want to be released to the public; if your response contains such data, you should identify the data for redaction or removal along with corresponding justification.

We will post this report to our website at www.epa.gov/oig.

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Chapter 1
Introduction

Purpose

The U.S. Environmental Protection Agency's Office of Inspector General conducted this audit to determine the extent to which late reporting of Toxics Release Inventory data impacts the annual TRI National Analysis.

Top Management Challenge

This audit addresses the following top management challenge for the Agency, as identified in OIG Report No. 20-N-0231, *EPA's FYs 2020–2021 Top Management Challenges*, issued July 21, 2020:

- Complying with internal control (data quality).

This report addresses, in part, the discrepancies we found in Report No. 19-N-0115, *Management Alert: Certain Toxic Release Inventory Data Disclosed to the Public Are Inaccurate*, issued on April 8, 2019, concerning TRI chemical transfers to publicly owned treatment works, or POTWs. POTWs are sewage treatment plants that are typically owned by a state or municipality.

Background

Congress created the TRI program following a series of toxic chemical releases from industrial facilities, which raised public concern about local readiness for chemical emergencies and the availability of information regarding hazardous substances. According to the EPA:

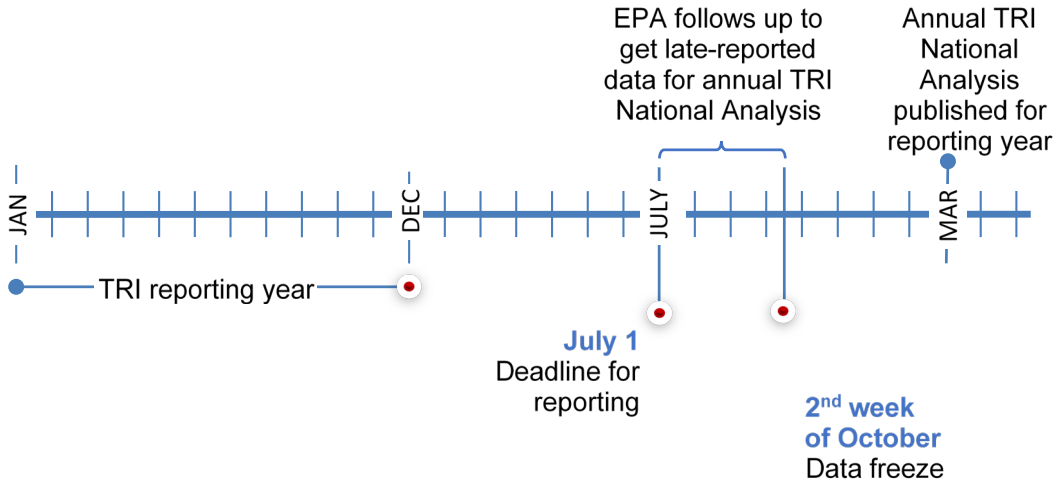
> On December 4, 1984, a cloud of extremely toxic methyl isocyanate gas escaped from a Union Carbide Chemical plant in Bhopal, India. Thousands of people died that night in what is widely considered to be the worst industrial disaster in history. Thousands more died later as a result of their exposure, and survivors continue to suffer with permanent disabilities. In 1985, a serious chemical release occurred at a similar chemical plant in West Virginia.
>
> In 1986, Congress passed the Emergency Planning and Community Right-to-Know Act (EPCRA) to support and promote emergency planning and to provide the public with information about releases of toxic chemicals in their community. Section 313 of EPCRA established the Toxics Release Inventory.

Since 1988, 42 U.S.C. §11023 has required facility owners or operators to report each TRI-listed chemical that was manufactured, processed, or otherwise used in quantities exceeding the established toxic chemical threshold during the preceding

calendar year by July 1 of each year. The TRI National Analysis includes industry data submitted up through mid-October before the EPA freezes the data.[1]

The TRI National Analysis is the Agency's annual publication that summarizes TRI data submitted for the most recent reporting year, identifies and characterizes trends in the data, and presents the Agency's interpretation of the data. The chemical information collected and reported through the TRI allows the public to better understand pollution sources in its communities. For example, lead is of special concern because acute or chronic exposure is particularly dangerous to fetuses, infants, and children, as their central nervous systems are more sensitive to the damaging effects of lead. The EPA typically publishes its TRI National Analysis in the January–March time frame of the second year following the reporting year. For example, the national analysis for the 2017 reporting year was published in March 2019 (Figure 1).[2]

Figure 1: Timeline for TRI data collection, follow-up, and annual TRI National Analysis



Source: OIG analysis. (EPA OIG image)

Subsequent to the annual national analysis, the Agency performs a follow-up data quality review every spring that includes any data reported after the freeze date in mid-October. The EPA then publishes those data in Envirofacts, a data system available to the public to access information on TRI-reported releases.

TRI Reporting for Transfers to POTWs

The TRI includes the quantities of toxic chemicals released into the air, water, and land. One of the specific reporting requirements is that facilities report the quantity of TRI chemical wastes sent to off-site facilities for disposal, treatment, energy recovery, or recycling. These wastes include wastewaters containing TRI

[1] EPA website, "What is the Toxics Release Inventory?," last updated July 28, 2020.
[2] The TRI National Analysis for the 2018 reporting year was published in February 2020.

reportable chemicals that are sent to POTWs.[3] TRI chemical wastes that facilities transfer to POTWs subject to the TRI reporting requirements are reportable by the facilities themselves. The POTWs that receive and treat the wastes are not required to report to the TRI. This reporting of chemical transfers to POTWs is complex and elevates the need for strong controls.

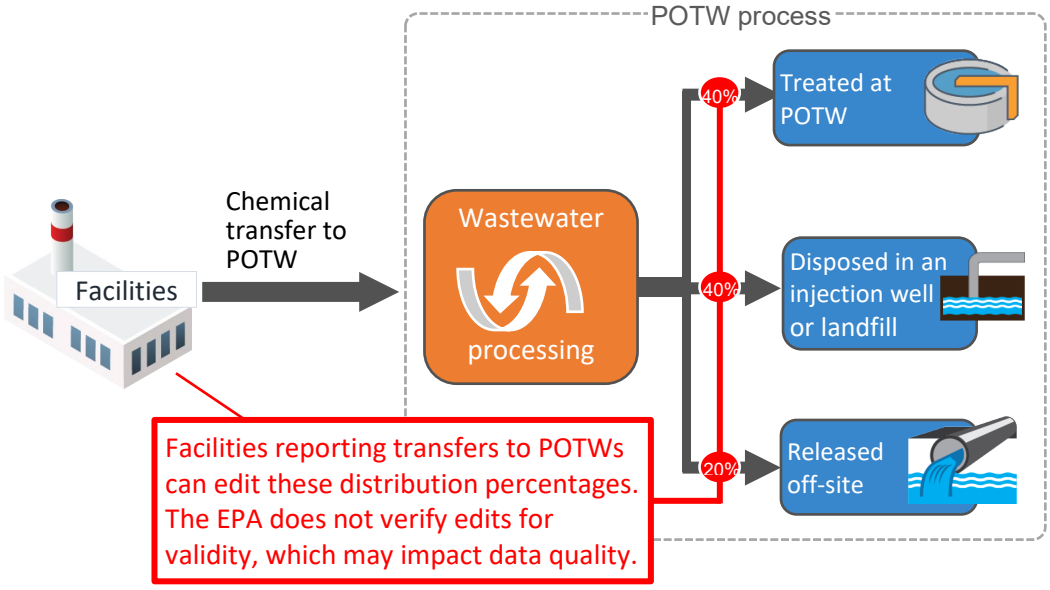
Since the discrepancies that we identified in Report No. 19-N-0115 all concerned TRI chemical transfers to POTWs, we followed up on those issues in this report.

TRI reports that disclose transfers to a POTW should include the quantity of the toxic chemical transferred as well as the final disposition of the toxic chemical. To calculate the final disposition when a facility lacks specific data on the ultimate disposition of chemical quantities transferred to a POTW, the EPA provides suggested or default POTW removal and treatment rates for certain chemicals to assist facilities in completing TRI reports. Facilities can apply the default distribution treatment, removal, and release percentages to chemical quantities transferred to a POTW.

If facilities have more accurate information on the final disposition of chemicals based on factors such as continuous monitoring or random sampling, facilities should use that information instead in their reports. For example, if a facility transfers 1,000 pounds of chemical X to a POTW, the facility can apply the default distribution percentages provided by the EPA to calculate the final disposition of the chemical. If the default distribution percentages for chemical X are that 40 percent of the chemical is treated, 40 percent of the chemical is disposed of in a landfill or an injection well, and 20 percent of the chemical is released, that would mean 400 pounds of the chemical transferred will be treated, 400 pounds of the chemical will be disposed of in a landfill or an injection well, and the remaining 200 pounds will be released (Figure 2).

[3] POTWs are treatment works facilities owned by a state or municipality, as defined by the Clean Water Act. "This definition includes any devices or systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW treatment plant. The term also means the municipality [as defined in [Clean Water Act] section 502(4)] that has jurisdiction over the indirect discharges to and the discharges from such a treatment works," according to *Introduction to the National Pretreatment Program,* dated June 2011.

Figure 2: Example of POTW distribution percentage



Source: EPA OIG image.

Responsible Offices

Multiple offices within the EPA perform TRI-related tasks:

- The Office of Chemical Safety and Pollution Prevention's mission is to protect public health and the environment from risks from pesticides and toxic chemicals. Its Office of Pollution Prevention and Toxics manages the TRI program.
- The Office of Information Management within the Office of Mission Support serves as the Agency lead for collecting information, managing, and reporting on programs, and developing and overseeing related Agency policy and web services. Two such search tool services are the Multisystem Search and the TRI Search, both found in Envirofacts.
- The Office of Enforcement and Compliance Assurance, in partnership with states, is responsible for enforcing environmental laws, including the Emergency Planning and Community Right-to-Know Act and TRI reporting requirements.
- The Office of Water provides guidance; specifies scientific methods and data collection requirements; and performs oversight and facilitates communication, including for POTWs that receive TRI chemical transfers. Its Office of Wastewater Management oversees a range of programs contributing to the well-being of the nation's waters and watersheds. The collection and treatment of domestic sewage and wastewater is vital to

public health and clean water and can include TRI chemical quantities transferred to a POTW.

Scope and Methodology

We conducted our audit from October 2018 through August 2020 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our objective.

To address our audit objective, we obtained and analyzed TRI data and corresponding annual TRI National Analysis reports for the 2013–2017 reporting years to understand the total number of TRI reporting facilities that may have filed their TRI reports too late to include in the TRI National Analysis for a given reporting year.

We interviewed management and staff from the Office of Enforcement and Compliance Assurance, the Office of Information Management within the Office of Mission Support, the Office of Water, and the Office of Chemical Safety and Pollution Prevention to determine the extent that late reporting impacts the respective TRI National Analysis and to assess other issues we identified with TRI data quality. Although the statutory deadline for facilities to report their data is July 1, the EPA includes data submissions up until it freezes the dataset in mid-October. For the purposes of this report, we considered data reported after the Agency freezes the data in mid-October as late.

The scope for our audit did not include determining whether facilities met all reporting requirements. It also did not include determining the effects of unreported data on the TRI National Analysis.

Prior Reports

In OIG Report No. 19-N-0115, the OIG found that two total release calculation queries provided in Envirofacts did not include the correct POTW release amounts. Individuals querying the system, including residents in communities near POTWs or researchers worldwide, did not always have accurate or consistent information regarding releases of toxic chemicals from POTWs. This may have impacted human health and the environment. The EPA stated that the error in the total release calculations in the two Envirofacts queries has been corrected. As part of the EPA's corrective action, the Agency said that it was going to check all its other calculations in the TRI database for similar errors.

In OIG Report No. 20-P-0200, *EPA Needs to Address Internal Control Deficiencies in the Agencywide Quality System*, issued on June 22, 2020, the OIG

found that the Office of Mission Support had not fully implemented internal controls for the mandatory agencywide Quality System or reviewed policies, procedures, and guidance within required time frames. The EPA uses its Quality System to manage the quality of its environmental data generation, collection, and use. The Quality System also determines hazardous or toxic wastes in the environment and establishes health-risk levels, supports enforcement monitoring efforts, and maps human health risk data. The OIG reported that poor data quality negatively impacts the EPA's effectiveness in monitoring programs that directly impact public health and could also subject the EPA to significant financial and legal risks. The report also stated that the EPA and the public rely upon the quality of the Agency's data, which helps the Agency make reliable, cost-effective, and defensible decisions. The Agency concurred with most of the recommendations and provided corrective actions. As of August 2020, two recommendations were not resolved.

Chapter 2
EPA Could Improve Controls Over Certain TRI Data

Late-reported data accounted for a small portion of reported TRI release data, but improved internal controls can improve data accuracy. The EPA requires facilities to report TRI data by July 1 of the following year and freezes the data for reporting in mid-October. The EPA has a robust but nonetheless undocumented approach for encouraging and improving timeliness for data submissions. The EPA allows reporting facilities to modify some factors for calculating chemical releases due to transfers to a POTW but does not verify whether the modifications to those factors are valid. By improving internal controls over reporting and POTW calculations, the EPA can improve TRI data accuracy and provide improved information to the public on toxic releases in its communities.

EPA's Robust but Undocumented Practice Encouraged Reporting and Minimized Late-Reported Data

Data that were reported after the Agency froze the data in mid-October accounted for an average of less than one-half of 1 percent of the releases reported in the TRI analyses in the data we reviewed. One reason for the low percentage is that between the reporting deadline on July 1 and when the EPA froze the data in mid-October, the Agency followed up with prior year reporters who had not yet reported in the current year to minimize the impact of late-reported data for the TRI National Analysis.

However, the EPA's good practice of following up with facilities after the July 1 deadline to obtain data not yet reported is not documented as a standard operating procedure. Therefore, the EPA runs the risk of not replicating this good practice successfully every year. According to the TRI Program management, the Office of Pollution Prevention and Toxics has not developed a standard operating procedure for following up with facilities that have not filed their TRI reports by the statutory July 1 deadline. The TRI Program stated that it has several practices in place that are routinely used to obtain data. These include:

- Sending "reminder" e-mails in late January and early February, as well as approximately 60 days, 30 days, 15 days, and seven days prior to July 1. After the July 1 deadline, emails are sent to facilities that have not certified their reports of releases.

- Contacting facilities that submitted TRI data in the previous reporting year but not in the current reporting year either to prompt them to submit TRI reporting forms or to verify that facilities have valid reasons for not reporting.

- Conducting extensive quality analysis and refreshing the dataset to incorporate any revisions or late submissions.

- Creating a list of facilities that reported relatively large waste management quantities for the prior year and referring them to the EPA regions to follow-up for compliance assistance purposes.

We quantified the effects of the EPA's efforts to follow up with facilities that reported in the prior year but not in the current year. During the time between the July 1 deadline for reporting and when EPA froze the data in mid-October for the reporting years we reviewed, approximately 800–2,000 facilities submitted about 2,500–9,000 TRI reports between the 2013–2017 reporting years.[4] Some facilities submitted more than one report. These reports comprise about 5 percent of the total amount of chemicals reported released to the TRI for years we reviewed, as well as approximately 7 percent of the facilities filing reports and approximately 8 percent of the number of reports filed. These reports further represent 70.3 million total pounds of an approximate 15.2 billion pounds of chemicals reported released during the 2013–2016 reporting years.[5] See Table 1 and Appendix A.

Table 1: Summary of TRI data reported

Reporting year	Total releases reported by all facilities (pounds) by October freeze date	July–October reported releases (pounds)	Percent releases for July–October reported data
2013	4,188,229,223	197,560,786.20	4.72
2014	3,999,521,569	222,995,422.28	5.58
2015	3,467,130,719	254,220,628.44	7.33
2016	3,513,181,638	51,591,030.24	1.47
2017	3,955,859,224	212,951,113.37	5.38
		Average	**4.90**

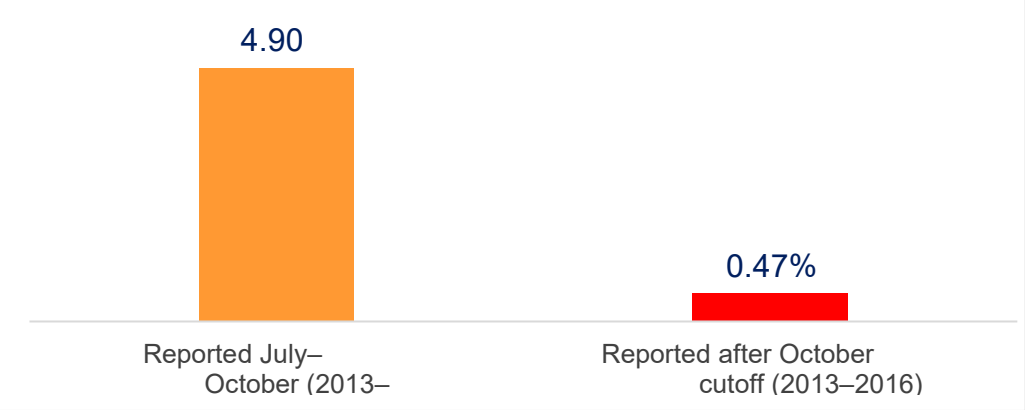
Source: OIG analysis of EPA TRI data. (EPA OIG table)

Late reports represented 0.35 to 0.77 percent of the total TRI reportable chemicals reported released (about 12–27 million pounds) during the period we reviewed. A summary by reporting year showing an analysis of how many facilities reported and the total amounts of chemicals released as reported to the EPA is in Appendix A.

By freezing the dataset in October rather than in July, the EPA improved data completeness for the period we reviewed by approximately 5 percent. Data not included by the mid-October freeze date account for less than one-half of 1 percent of total pounds of chemicals that would be reported to the TRI (Figure 3 and Table 1).

[4] Late-reported data for the 2017 reporting year were not available in Envirofacts when we reviewed the data in April 2019.
[5] See Footnote 4.

Figure 3: Average TRI percent releases by time reported, 2013–2017



Source: OIG analysis of EPA TRI data. (EPA OIG graphic)

EPA Did Not Determine Whether Late-Reported Data Impacted the Annual Analysis

Although we found that the amount of data reported after the EPA annually froze the data in mid-October accounted for an average of less than one-half of 1 percent of releases reported to the TRI National Analysis, the EPA did not track the effect that late-reported data may have had on the TRI National Analysis. When we asked the EPA about that, managers and staff stated that they had not looked at the data from that perspective. The EPA freezes the TRI dataset in mid-October and uses that data for the TRI National Analysis. Any data that arrived after the mid-October freeze date, along with any revisions to previously submitted data, would be included in the next update of the TRI dataset and in the following year's TRI National Analysis.

While the EPA does compare prior year releases with the most current reported releases, the Agency does not revise prior years' analyses to include data that arrived after the mid-October freeze date. The EPA can improve the annual TRI National Analysis by describing the impact of any data that arrived after the mid-October freeze date from prior years that are missing from the current year's annual TRI National Analysis. Disclosing the late-reporting rate would help explain the impact on the dataset and the completeness of the data. Not doing so limits the public's ability to effectively participate in managing human health and environmental risks and places the burden on the public to search for late-reported data to assess any relevant effects.

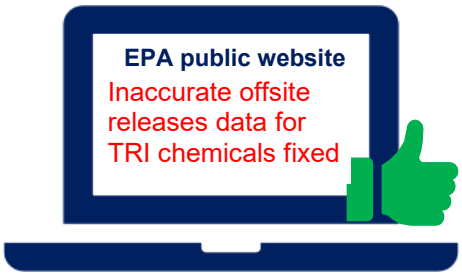
EPA Fixed Errors Identified in OIG Management Alert

We reported two discrepancies in the publicly available TRI data in OIG Report No. 19-N-0115. Specifically, two Envirofacts queries did not correctly calculate the amount of chemicals released from POTWs:

- The total pounds of chemicals released to the environment as reported in the publicly available TRI data for reporting years 2013–2017.

- The information that the EPA provided to us separately on the total pounds of chemicals released.

The EPA stated that the issue has existed since reporting year 2014 but it corrected the errors in March 2019. The OIG verified the correction on a sample of data obtained from Envirofacts.



Insufficient Controls Over Modifications to POTW Distribution Percentages in TRI Reports Can Change the Validity of Reported Chemical Release Quantities

The EPA lacks adequate controls over data elements used to calculate releases into the environment for chemicals transferred to a POTW. According to the EPA, facilities are expected to use the best available information when reporting, are required to keep documentation on certain information used for compliance determinations and submissions,[6] and are expected to present such documentation in the event that the EPA conducts an inspection or requests such information. Reporting facilities can accept the EPA's default POTW distribution percentages, or they can modify those percentages if they have better information. Neither the POTW nor the EPA can easily verify the validity of the data concerning distribution percentages since a reporting facility is not required to provide evidence supporting its modifications of the data.

Facilities can raise or lower the calculated quantities of chemicals reported as released from a POTW into the environment. It could appear in the TRI as if fewer chemical quantities were released than were actually reported released, thereby misleading the public. For the approximately 35 percent of the reports of chemicals transferred to POTWs, facilities' edits to the EPA's distribution percentage values resulted in fewer net pounds of toxic chemicals reported released into the environment from 2014 through 2017. These edits reduced reported releases by 3,354,235 pounds or approximately 19 percent. The EPA, however, does not verify that the edits to the distribution percentage data are correct.

[6] 40 C.F.R. § 372.10.

For the 2014–2017 reporting years, we calculate that approximately 35 percent of reported chemical transfers greater than zero to POTWs differed from the default percentages.[7] Since reporting facilities are not required to provide evidence to support edits to the POTW distribution percentages, the EPA cannot verify the validity of the data.[8]

According to the EPA, reporting facilities may also choose not to disclose to the public the POTW distribution percentages they use. When reporting facilities edit the POTW distribution percentages without providing documentation supporting changes, and the EPA does not provide appropriate oversight or inspect the records supporting the change:

- The EPA and the public have no way to determine whether the amount reported released is correct or to determine the eventual destination of the chemicals after they are transferred or released.

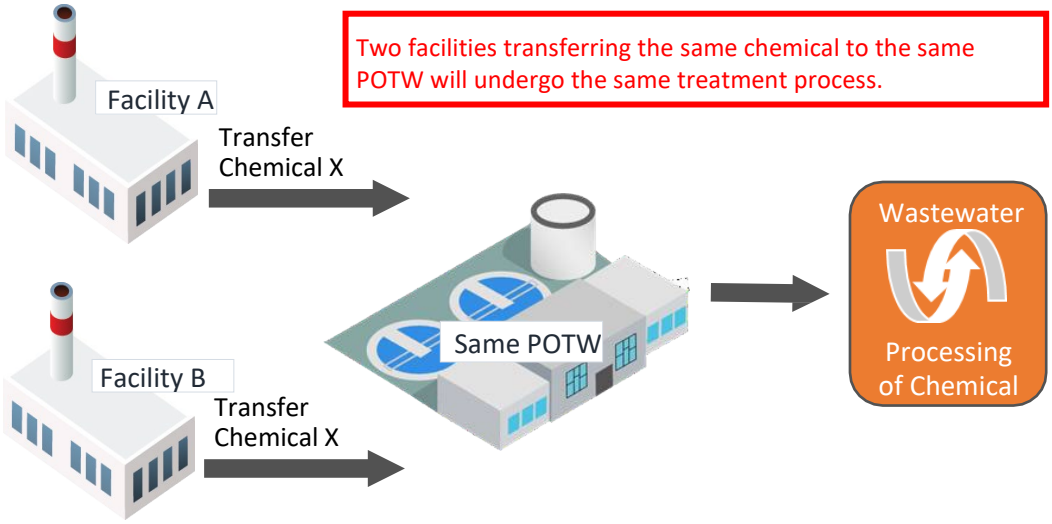
- Facilities could misrepresent the final disposition of chemicals reported as transferred to POTWs in the TRI data.

- The EPA and the public may be deprived of useful information to improve the default values used in the TRI dataset or identify new technologies that could benefit others, if the change in the distribution percentage is valid.

For example, distribution percentages provided by one facility conflicted with distribution percentages provided by other facilities transferring the same chemical to the same POTW (Figure 4). For example, two reporting facilities transferred lead to the same POTW. One reporting facility indicated that the POTW only released 37 percent of the lead into the environment, while the other facility indicated that the same POTW released 100 percent. In other words, one facility reported that the same POTW released fewer pounds of lead into the environment. In the 2017 data, there were over 800 instances where facilities transferred the same chemical to the same POTW but used different POTW distribution percentages.

[7] The average is calculated from the percentage of nondefault value POTW transfers, where the POTW transferred pounds reported was greater than zero pounds for each year from 2014 through 2017. The averages per year are as follows: 46.3 percent in 2014, 34.6 percent in 2015, 31.1 percent in 2016, and 28.7 percent in 2017. The average from 2014 through 2017 is approximately 35.2 percent. The data for 2013 were excluded due to too many blank values.
[8] Facilities filed 2,927 reports that used nondefault values within the 10,461 transfers to POTWs that were reported as greater than zero pounds in the 2017 dataset.

Figure 4: Transferring the same chemical to the same POTW



Source: EPA OIG-generated picture. (EPA OIG image)

According to the Agency, a facility may have more accurate information regarding the final disposition of the TRI chemical transferred to a POTW. But if two facilities report transferring the same chemical to the same POTW, each facility should report the same distribution percentages on that chemical since the POTW conducts the same treatment process no matter the source. The current reporting process does not provide a way to distinguish between which facility had access to more accurate data, used a different set of assumptions, or might have misrepresented the data.

Without specific internal controls on data quality to enforce consistency among facilities reporting the same chemical to the same POTW, reporting facilities could alter the distribution percentages to allow them to report fewer pounds of chemicals released to the environment.

We met with the Agency regarding the insufficient controls over edits and how the Agency can improve the validity of reported chemical release quantities to TRI reports. Managers and staff in the Office of Chemical Safety and Pollution Prevention told us that they are taking action to improve the reporting process and that the following updates to the reporting forms and instructions are underway:

- Updated user interface to align better with real-life reporting practices.
- New waste management codes to help categorize the type of POTW disposal and treatment processes.
- New validation alerts to warn reporters that an entry may be problematic.

Although these efforts represent progress toward improving the reporting process for TRI data, they do not address the data quality problem we identified. Our analysis of the updated form controls as described by the EPA showed that the revised reporting system does not require facilities that report transferring the

same chemical to the same POTW to use consistent distribution percentages in their reports.

Conclusions

The EPA's practice of following up with late-reporting facilities is effective and increases the completeness of the TRI dataset. The data reported after the mid-October freeze date represent an average of less than one-half of 1 percent of the total pounds of chemicals reported in the TRI National Analysis. This practice, however, is not documented as a standard operating procedure. The EPA should set and document standard controls over these efforts to ensure that data are reported on time so that the releases are included in the annual TRI analysis.

The EPA also lacks controls over the validity of POTW distribution percentage edits in the information processing system. While new technologies may justify editing the POTW distribution percentages, this practice does not provide adequate controls to ensure the validity and accuracy of TRI data, especially since facilities could be motivated to alter the distribution percentages to allow them to report fewer chemicals released to the environment. This can lead to misrepresentation in the TRI data for chemicals that were reported transferred to POTWs. The EPA should improve these controls to bolster the credibility of TRI reported data. The public relies on the TRI dataset to obtain important information concerning the presence of toxic chemicals in its communities.

Recommendations

We recommend that the assistant administrator for Chemical Safety and Pollution Prevention:

1. Develop and implement standard operating procedures to:

    a. Follow up on high-value late reporters so that their data is included in the annual Toxics Release Inventory National Analysis.
    b. Minimize the effect any late reporting may have on the Toxics Release Inventory National Analysis.

2. Conduct and publish results of an annual analysis on late-reported Toxics Release Inventory data to determine the overall impact on the accuracy of the annual Toxics Release Inventory National Analysis reports.

We recommend that the assistant administrator for Chemical Safety and Pollution Prevention, in coordination with the assistant administrator for Water:

3. Revise the Toxics Release Inventory reporting instructions by removing the option for reporting facilities to not disclose the publicly owned treatment works distribution percentages used in their reports.

4. Develop and implement procedures to:

    a. Annually review Toxics Release Inventory reports where publicly owned treatment works distribution percentages differ from the default values, especially when publicly owned treatment works distribution percentages do not align with other facilities reporting transfers of the same chemical to the same publicly owned treatment works, and require corrections as appropriate.

    b. Annually review whether default values for the publicly owned treatment works distribution percentages need to be updated.

Agency Response and OIG Assessment

On September 24, 2020, the assistant administrator for Chemical Safety and Pollution Prevention provided a formal response to our draft report (Appendix B). The Agency also provided informal technical comments, and we made changes where appropriate. The Agency provided acceptable corrective actions and estimated milestone dates in response to our recommendations. All recommendations are resolved.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS

Rec. No.	Page No.	Subject	Status[1]	Action Official	Planned Completion Date	Potential Monetary Benefits (in $000s)
1	13	Develop and implement standard operating procedures to: a. Follow up on high-value late reporters so that their data is included in the annual Toxics Release Inventory National Analysis. b. Minimize the effect any late reporting may have on the Toxics Release Inventory National Analysis.	R	Assistant Administrator for Chemical Safety and Pollution Prevention	12/20/20	
2	13	Conduct and publish results of an annual analysis on late-reported Toxics Release Inventory data to determine the overall impact on the accuracy of the annual Toxics Release Inventory National Analysis reports.	R	Assistant Administrator for Chemical Safety and Pollution Prevention	2/28/21	
3	13	In coordination with the assistant administrator for Water, revise the Toxics Release Inventory reporting instructions by removing the option for reporting facilities to not disclose the publicly owned treatment works distribution percentages used in their reports.	R	Assistant Administrator for Chemical Safety and Pollution Prevention	4/30/21	
4	14	In coordination with the assistant administrator for Water, develop and implement procedures to: a. Annually review Toxics Release Inventory reports where publicly owned treatment works distribution percentages differ from the default values, especially when publicly owned treatment works distribution percentages do not align with other facilities reporting transfers of the same chemical to the same publicly owned treatment works, and require corrections as appropriate. b. Annually review whether default values for the publicly owned treatment works distribution percentages need to be updated.	R	Assistant Administrator for Chemical Safety and Pollution Prevention	7/31/21	

[1] C = Corrective action completed.
R = Recommendation resolved with corrective action pending.
U = Recommendation unresolved with resolution efforts in progress.

TRI Reporting Analysis of Late-Reported Data

Reporting year	Total		Facilities filing at least one late report after the October freeze date		Number of chemicals reported late to TRI		July–October reported releases (lbs)	Percent releases for July–October reported data	Total number of pounds of chemical releases reported		
	Facilities reporting	Reports filed	Number	Percent	Number	Percent			Total	Late (received after October freeze date)	Percent late
2013	22,264	83,151	1,192	5.35	2,241	2.70	197,560,786.20	4.72	4,188,229,223	15,708,358	**0.38**
2014	22,305	83,130	988	4.43	1,803	2.17	222,995,422.28	5.58	3,999,521,569	15,509,968	**0.39**
2015	22,220	82,038	674	3.03	1,230	1.50	254,220,628.44	7.33	3,467,130,719	26,805,717	**0.77**
2016	21,881	80,236	443	2.02	817	1.02	51,591,030.24	1.47	3,513,181,638	12,274,979	**0.35**
2017	21,456	79,435	*	*	*	*	212,951,113.37	5.38	3,955,859,224	*	*
						Total		**4.90**	**19,123,922,373**	**70,299,022**	**0.47**

Source: EPA OIG analysis of EPA data. (EPA OIG table)

Note: Data as of April 2, 2019 (within the scope of the report).

* Late-reported data for 2017 were not available when we accessed the data.

Agency Response to Draft Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

September 24, 2020

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

MEMORANDUM

SUBJECT: Response to Draft Report entitled "Data Used for Annual Toxics Release Inventory National Analysis is 99 Percent Complete, but EPA Could Improve Certain TRI Data Controls."

FROM: Alexandra Dapolito Dunn
Assistant Administrator

ALEXANDRA DAPOLITO DUNN
Digitally signed by ALEXANDRA DAPOLITO DUNN
Date: 2020.09.24 16:57:15 -04'00'

TO: Sean W. O'Donnell
Inspector General

This memorandum responds to the OIG's Draft Report entitled "Data Used for Annual Toxics Release Inventory National Analysis is 99 Percent Complete, but EPA Could Improve Certain TRI Data Controls," Project No. OA&E-FY18-0002, dated August 27, 2020.

I. General Comments:

The Office of Chemical Safety and Pollution Prevention (OCSPP) appreciates the OIG's effort in evaluating the following:

- The extent to which late reporting of Toxics Release Inventory data impacts the annual TRI National Analysis;
- Calculation of TRI chemical release quantities from publicly owned treatment works (POTW) facilities following transfers of TRI chemical wastes from TRI reporting facilities to POTWs.

II. OCSPP's Response to the Recommendations:

Recommendation 1: Develop and implement standard operating procedures to:

a) Follow-up on high-value late reporters so that their data is included in the annual Toxics Release Inventory National Analysis, and

b) Minimize the effect any late reporting may have on the Toxics Release Inventory National Analysis.

- **Response and Background:** It is OCSPP/OPPT's annual practice to email reminders to TRI facilities in advance of the July 1 TRI reporting deadline. In addition, it is also OCSPP/OPPT's annual practice to expressly notify via email TRI facilities which had submitted TRI forms for the prior year that disclosed large release quantities but failed to submit TRI forms by the July 1 deadline for the current year. These practices are documented via an internal EPA milestones document, and each year the TRI program reviews these milestones to ensure that they are met.
- **Proposed Corrective Action 1**: To satisfy Recommendation 1, for OCSPP to "develop and implement standard operating procedures," the TRI Program will formalize these reminder and notification practices by establishing an internal Standard Operating Procedure that describes these processes to minimize the effect any late reporting may have on the TRI National Analysis.
- **Target Completion Date**: December 2020.

Recommendation 2: Conduct and publish results of an annual analysis on late-reported Toxics Release Inventory data to determine the overall impact on the accuracy of the annual Toxics Release Inventory National Analysis reports.

- **Response and Background:** To address the OIG's recommendation, and make transparent how late TRI reports affected the quantities reported in the prior year's TRI National Analysis, OCSPP/OPPT will include in the TRI Data Considerations section of the TRI National Analysis a discussion on reports received too late for incorporation in the previous year's National Analysis.
- **Proposed Corrective Action 2**: In the publication of the TRI National Analysis for RY2019, OCSPP will include language that summarizes how late reports and revised reports have changed the dataset that was used to develop the previous year's National Analysis.
- **Target Completion Date**: February 2021.

Recommendation 3: Revise its Toxics Release Inventory reporting instructions by removing the option for reporting facilities to not disclose the publicly owned treatment works distribution percentages used in their reports.

- **Response and Background:** Starting with Reporting Year 2018, it is straightforward to calculate these percentages.

- **Proposed Correction Action 3:** To further clarify this information for TRI data users, OCSPP will provide these percentages in the TRI data presentation tools.

- **Target Completion Date**: April 2021.

Recommendation 4: Develop and implement procedures to:

a) Annually review TRI reports where publicly owned treatment works distribution percentages differ from the default values, especially when publicly owned treatment works distribution percentages do not align with other facilities reporting transfers of the same chemical to the same POTW and require corrections as appropriate.

b) Annually review whether default values for the POTW distribution percentages need to be updated.

- **Recommendation 4a Response and Background**: Each year, OCSPP reviews submitted TRI data to look for outliers and to validate the reported data across a wide range of metrics. For past years, OCSPP has conducted data quality processes in regard to reported transfers to POTWs. Such processes led to the creation of default distribution percentages that vary on a chemical-by-chemical basis.

  Note that facilities contacted by the TRI Program regarding their reporting, whether it pertains to transfers to POTWs or any other TRI data element, need to determine whether they complied with the reporting requirements or should submit a revision. Ultimately, such corrections, if needed, are performed by the facilities who must certify to the completeness and accuracy of their reporting forms and are subject to potential enforcement should they have failed to adhere to the reporting requirements.
- **Proposed Corrective Action 4a:** Going forward, OCSPP will review submitted data to look for situations where a facility reported a transfer to a POTW such that the transfer reported provides a markedly different outcome than the default distribution percentages would have produced as well as review situations where such reporting differs from transfers reported by similarly situated facilities.

- **Target Completion Date**: July 2021.

- **Recommendation 4b Response and Background:** OCSPP agrees to annually review these percentages and will incorporate more accurate default POTW distribution percentages and assumptions when it learns of more accurate data and information.

- **Proposed Corrective Action 4b:** OCSPP's TRI Program will provide updated default POTW percentages for certain chemicals (e.g., nonylphenol ethoxylates) and develop a standard operating procedure to describe how these default distribution percentages are determined.

- **Target Completion Date**: July 2021 (for Reporting Year 2021).

cc: All OCSPP DAAs
OW AA and DAAs
OECA AA and DAAs
OPPT OD, DODs
TRI Program Managers
Kathlene Butler, OIG
Christina Lovingood, OIG
Dwayne Crawford, OIG
Janet L. Weiner, OCSPP Audit Liaison
John Latham, OPPT
Gwendolyn Spriggs, OECA Audit Liaison
Tiffany Crawford, OW Audit Liaison

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