



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

APR 23 2019

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

MEMORANDUM

SUBJECT: Response to Management Alert Report entitled "Certain Toxic Release Inventory Data Disclosed to the Public Are Inaccurate," Report No. 19-N-0115.

FROM: Alexandra Dapolito Dunn
Assistant Administrator

A handwritten signature in black ink, appearing to read "Alexandra D Dunn", is written over the typed name and title.

TO: Charles J. Sheehan
Acting Inspector General

This memorandum responds to the OIG's Management Alert entitled "Certain Toxic Release Inventory Data Disclosed to the Public Are Inaccurate," dated April 8, 2019. The memorandum brought to my attention the OIG's concerns that two specific queries of TRI data related to releases of TRI chemicals were inaccurate. These concerns were brought to the TRI Program's attention during the OIG's *Audit of the Impact of the Toxics Release Inventory (TRI) Late Reporters on the EPA's Annual TRI National Analysis* (Project No. OA&E-FY18-0002).

As you know, the TRI was created by Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA), and is a resource for learning about toxic chemical releases reported by industrial and federal facilities. Because TRI data support informed decision-making by communities, government agencies, companies, and others, providing the public with data and information of optimal quality is a high priority for EPA. Accordingly, upon notification from the OIG, the TRI Program took immediate action and addressed the issue weeks before the OIG's issuance of the Management Alert. The Appendix to this response describes in detail the issue identified by the Management Alert, and as requested by the OIG also describes the Agency's corrective actions, and the minor degree to which the discrepancies affected public reporting of TRI releases.

While EPA has already taken action to address the issues identified by the OIG, the Agency has concerns that the Management Alert may overstate the impact of the query issue on the public receiving "complete and timely information about environmental conditions affecting human health." The two queries underreported the total pounds of chemicals released to the environment for reporting years 2013–2017, because the queries did not include releases of nonmetallic TRI chemicals from Publicly Owned Treatment Works (POTWs). **Nevertheless, as the Appendix will demonstrate, releases of nonmetallic TRI chemicals from POTWs comprise less than 1% of the**

total releases reported for all TRI chemicals for each of the years at issue: 2013, 2014, 2015, 2016 and 2017. In addition, for companies, government agencies, nongovernmental organizations and the public seeking info about a specific facility near them, more detailed information unaffected by the queries was always available. Citizens can easily access the publicly available individual TRI reports submitted by the facilities in their communities, and review the specific data contained in a given TRI report, including data pertaining to releases of TRI chemicals by POTWs.

As further evidence of OCSPP's commitment to ensuring that the TRI program is providing the public with data and information of optimal quality, I have directed the TRI Program to work with EPA's Office of Mission Support (OMS) to examine all other TRI queries which calculate total release quantities. This will ensure that the appropriate calculation rule regarding releases of nonmetallic chemicals from POTWs is being applied consistently across all queries.

I have also directed the TRI program to post information on its website about the issues with data obtained via these two queries prior to EPA's correction of the issue. This should ensure that companies, government agencies, nongovernmental organizations and the public are notified that searches that were done previously may be redone to obtain more accurate results.

Thank you for alerting me to this issue and allowing OCSPP to address it immediately.

Attachment: Appendix

cc: Andrew Wheeler, Administrator
Henry Darwin, Associate Deputy Administrator and Chief of Operations
Ryan Jackson, Chief of Staff
Michael Molina, Deputy Chief of Staff
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Tina Lovingood, Director, Land Cleanup and Waste Management Directive
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Donna J. Vizian, Principal Deputy Assistant Administrator for Mission Support
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Appendix

Background:

The TRI is a publicly-available database that contains information on the quantities of TRI listed chemicals released annually to air, water and land, or otherwise managed as waste by facilities throughout the United States. By July 1st of each year, facilities are required to disclose this and other information regarding these chemicals to EPA. Facilities in the manufacturing and other sectors (e.g., electric utilities, metal mining, hazardous waste management) are subject to the TRI reporting requirements.¹ Federal facilities are also subject to TRI reporting requirements.²

The collection of TRI data is achieved by requiring facilities subject to TRI reporting³ to report to the EPA, and state and tribal governments. For a given chemical for which a reporting threshold was exceeded, facilities are required to report the quantities during the calendar year that were:

1. Released onsite to air, land or water;
2. Recycled onsite;
3. Burned for energy recovery or treated onsite; or
4. Transferred offsite to other facilities or locations for treatment, recycling, storage or disposal

Facilities submit this and other information electronically in the form of a TRI report, using EPA's online TRI-MEweb reporting software.

The data reported to EPA are stored in EPA's Envirofacts database. Envirofacts is the EPA's single point of public access to select EPA data and is maintained by EPA's Office of Mission Support (OMS). Envirofacts enables easy access to several EPA databases to provide users with information about environmental activities that may affect air, water, and land anywhere in the United States. It contains many pre-set queries for accessing and analyzing EPA data, including TRI data. TRI data and information are available and readily accessible to the public through a diverse suite of online tools accessible from Envirofacts or the TRI Program webpage. These tools are designed for different types of users of TRI information.⁴ EPA also makes the TRI reports as certified and submitted by facilities available to the public,⁵ so that citizens can easily access individual TRI reports submitted by the facilities in their communities, and review the specific data contained in a given TRI report.

Publicly Owned Treatment Works (POTW) facilities are municipal treatment facilities where wastes from industrial, commercial, and residential sources are sent for treatment to reduce or eliminate the amounts of pollutants or alter the nature of pollutant properties in the wastes to a

¹ The TRI reporting requirements were originally established in 1986 under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA). Additional reporting requirements were established under Section 6607 of the Pollution Prevention Act of 1990.

² Federal facilities are subject to the TRI reporting requirements by Executive Order 13834.

³ Facilities that have ten or more full-time employees, and that within a calendar year manufacture, process, or otherwise use a TRI-listed chemical in a quantity that exceeds a threshold amount.

⁴ More information on these tools is available at www.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools.

⁵ See www3.epa.gov/enviro/facts/tri/form_r_search.html.

less harmful state prior to discharge into the environment, such as into a river. The reduction, elimination or alteration of pollutants can be achieved by use of physical, chemical, or biological processes within the POTW.

POTWs are not within the scope of facilities that are subject to the TRI reporting requirements, and therefore are not required to file TRI reports for TRI chemicals they release to the environment or otherwise manage as waste from waste treatment activities. However, facilities that are subject to the TRI reporting requirements must disclose the quantities of TRI chemicals transferred offsite to POTW(s), as well as the name and address of the POTW(s) in Section 6.1 of the TRI report(s). When a quantity is entered in Section 6.1 of a TRI report, TRI-MEweb prompts the preparer of the report for information on the quantities of the TRI chemical that the POTW released to the environment or treated for Section 8 reporting purposes.

Description of the Query Issue Identified by the Management Alert:

Prior to 2013, when a facility indicated that it transferred a chemical to a POTW, TRI-MEweb incorporated certain assumptions as default percentages for the ultimate disposition (i.e., released and/or treated) of the chemical transferred to the POTW by the facility, though the facility could provide more accurate information by overriding the default percentages. Prior to 2013, the default assumptions programmed within TRI-MEweb for the disposition of a TRI chemical sent to a POTW were:

- For a TRI chemical that is a metal or metal compound, 100% of it was released by the POTW to the environment. This assumption was based on the fact that a metal or metal compound cannot be destroyed (i.e., metals cannot be treated for destruction);
- For a TRI chemical that is nonmetallic (i.e., is not a metal or a metal compound), 100% of it was destroyed through treatment at the POTW and, therefore, none of it was released to the environment.

These same assumptions were incorporated into all of the TRI queries within Envirofacts that calculated total releases. That is, in calculating total releases of a TRI chemical or chemicals, the entire quantities of metals or metal compounds sent to POTWs for treatment were included in the aggregate as released from the POTWs, and for nonmetallic chemicals none of the quantities sent to POTWs for treatment were included in the aggregate as released from the POTWs, though these quantities were included in the total quantity treated off-site aggregate.

For the 2013 reporting year, as a result of the availability of experimentally-derived POTW removal and destruction rates compiled by EPA for nonmetallic chemicals, including nonmetallic chemicals on the TRI chemical list, the TRI Program updated the default assumptions for nonmetallic chemicals in TRI-MEweb to apply to a quantity transferred to a POTW on a TRI report. A facility can override these preloaded percentage values if it has more accurate information on the final disposition of the chemical. In either case, for a nonmetallic TRI chemical sent offsite to a POTW, TRI-MEweb will use the percentages provided to calculate the quantities of the chemical the POTW released to the environment or treated. These calculated quantities are populated in Section 8 of the TRI report.

The TRI queries within Envirofacts that calculate total releases were adjusted accordingly and, until very recently (February/March, 2019), it was believed that this adjustment had been made in each TRI query within Envirofacts that calculated total releases. While TRI Program staff and staff from the Office of Mission Support (OMS) were assisting the OIG in its ongoing *Audit of*

the Impact of the Toxics Release Inventory (TRI) Late Reporters on the EPA's Annual TRI National Analysis (Project No. OA&E-FY18-0002), the OIG informed the TRI Program and OMS staff and managers that the total release quantities it calculated from TRI data using two of the TRI queries in Envirofacts were different than the total release quantities derived by TRI Program and OMS staff using a different analytical approach.

During discussions between TRI, OMS and OIG staff and managers, it was determined that two selectable data elements in the TRI EZ Search section of Envirofacts, which provide aggregated total release quantities, were not including the quantities of nonmetallic chemicals released by POTWs in the total release calculus. These data elements are accessible via the "Flat (Denormalized) Form R Report" and "Combined Releases" queries within EZ Search. In other words, these two data elements were still applying the assumption that nonmetallic chemicals sent offsite to a POTW to be treated were completely destroyed at the POTW during treatment, and none was released to the environment. A person who selected either of these two specific queries, and then selected either of these two data elements while conducting the query, would receive total release quantities based on the prior assumption that 100% of the quantities of nonmetallic chemicals transferred to a POTW were treated rather than released.

EPA's Corrective Actions to Address the Query Issue Identified in the Management Alert:

EPA has corrected both of the TRI queries in Envirofacts identified by the Management Alert, and is confident that for these queries, the total release quantities will now correctly include the quantities of nonmetallic TRI chemicals released by POTWs. The corrections are described below.

The issue with the "Flat (Denormalized) Form R Report" was discovered on February 18th, 2019 and corrected on February 20th, 2019. This issue involved the Total On/Off Site Release data element. The issue was found after results from a manual query (coded using Structural Query Language) were compared to results from the "Flat (Denormalized) Form R" query. The results were not the same, and more detailed reports were subsequently created and compared to diagnose the cause of the discrepancy. Upon review, it was apparent that the Total Release Amount in Envirofacts was missing the full POTW Release amount (a component of total releases).

To correct the issue, the equation that populates the affected data element was modified to reflect the calculation that was updated in 2013. Validation that the issue was corrected was accomplished through testing and verification, conducted separately and independently by EPA OMS staff and OMS' technical consultants. The verification by EPA staff included rerunning the original report and comparing its results to the original manual results. Both sets of results were identical. Further reports were run for several other reporting years using both methods, and the results from each method matched.

The issue in the "Combined Releases" query was confirmed on March 15th, 2019. Total release quantities calculated using the Total Release Amount query were approximately 1% less of what the known values were. (The known values were derived from manual queries.) Upon further inspection, it was realized that not all of the POTW release amounts for chemicals were included in the Release Estimate Amount Summary data element in this query. Three data elements were being calculated and summed to create this data element. To remedy this issue, the three underlying data elements were removed and a new element called "Total Offsite Releases" was

created to replace the element with the error. The correction was implemented on March 20th, 2019.

Validation of the correction was made through testing done independently and separately by EPA OMS staff and OMS' technical consultants. The testing by EPA staff involved rerunning the report with the original parameters and calculating Total Releases by summing all the categories. The results were compared against manual results. Both methods produced the same results, thus verifying that the correction was successful.

Disclosure of the Degree to Which the Query Issue Identified Affected Public Reporting of TRI Releases:

Releases of nonmetallic TRI chemicals from POTWs comprise less than 1% of the total releases reported for all TRI chemicals for each of the years at issue: 2013, 2014, 2015, 2016 and 2017.

The chart below documents this fact. For each reporting year from 2013-2017, the chart provides the total quantities of nonmetallic TRI chemicals that were released from POTWs and not included in the calculus of total releases in the two Envirofacts queries discussed above. Also shown for each year are the number of TRI reports submitted for nonmetallic TRI chemicals that claimed quantities were sent offsite to POTWs for treatment, and the total quantities of releases of all TRI chemicals for each year.

Year	# of TRI Forms Submitted for Nonmetallic TRI Chemicals sent to POTWs	Total Quantities of Nonmetallic TRI Chemicals Released from POTWs (in lbs)	Total Quantities of all TRI Chemicals Released to the Environment (in lbs)
2017	3,341	30,616,529	3,955,859,224
2016	3,442	30,343,899	3,513,181,638
2015	3,493	28,171,514	3,467,130,719
2014	2,601	24,474,738	3,999,521,569
2013	4,617	25,156,188	4,188,229,224

Since EPA makes the TRI reports as certified and submitted by facilities available to the public, companies, government agencies, nongovernmental organizations and the public can easily access individual TRI reports submitted by the facilities in their communities, and review the specific data contained in a given TRI report, including data pertaining to releases of TRI chemicals by POTWs.