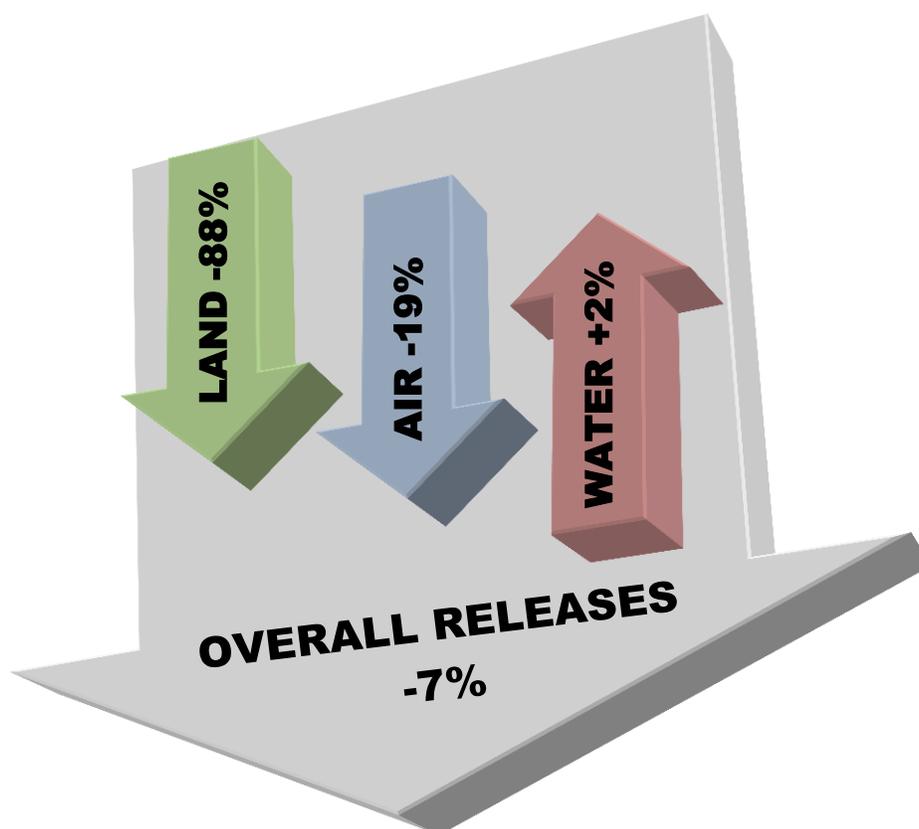




DELAWARE 2014 TOXICS RELEASE INVENTORY REPORT



Prepared by the EPCRA Reporting Program
Department of Natural Resources and Environmental Control

January 2016

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DNREC MISSION STATEMENT

The mission of the Department of Natural Resources and Environmental Control is to ensure the wise management, conservation, and enhancement of the State's natural resources, protect public health and the environment, provide quality outdoor recreation, improve the quality of life, and educate the public on historic, cultural, and natural resource use, requirements and issues.

Front Cover: *The cover is a graphic showing the downward trend of on-site releases compared to 2013. Total on-site releases are down 7% or 278,000 pounds, with releases to land down 88% (134,000 pounds), releases to air down 19% (194,000 pounds), and releases to water up 2% (49,000 pounds) compared to 2013.*



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Executive Summary

The 2014 Toxics Release Inventory data set marks 28 years of data collected from covered facilities being made available to the public. The Toxics Release Inventory continues to strive to provide the public with information about chemical uses, releases, and waste management activities occurring at these facilities.

For 2014, 57 facilities submitted reports for 88 different chemicals. Approximately 3.75 million pounds were reported as being released on-site, a decrease of 278,000 pounds or 7% compared to 2013. Of this amount, approximately 18,000 pounds were released to land, while 800,000 pounds were released to air, and approximately 2.9 million pounds were released to water. Significant changes impacting on-site releases for 2014 were reductions reported by Indian River Generating Station in the release of both hydrochloric acid (HCl) aerosols to air and barium compounds to land. Looking at other chemicals, the Delaware City Refinery (DCR) reported a significant increase in the release of nitrate compounds to water, up 111,000 pounds compared to 2013.

Overall, a summary of the data shows (amounts rounded to the nearest 1,000 pounds):

- The total amount released on-site to water increased by 49,000 pounds (2%) compared to 2013. This was largely due to an increase in releases of nitrate compounds reported by the Delaware City Refinery. Over the last 10 years, total releases to water for all facilities have increased by 138%, mainly due to the release of nitrate compounds to water. (See **Releases to Water** on page 9 for additional information.)
- The total amount of TRI chemicals reported as released on-site to air for 2014 decreased by 194,000 pounds (19%), compared to 2013. The largest reduction in this category was hydrochloric acid (HCl) aerosols released to air from the Indian River Generating Station. Over the last 10 years, total releases to air have trended downward 90%. (See **Releases to Air** on page 8 for additional information.)
- The total amount released on-site to land decreased by 134,000 pounds (88%) compared to 2013. This was primarily the result of Indian River Generating Station reporting a reduction of 86,000 pounds in the release of barium compounds to land. Releases to land have trended downward 98% since 2004. (See **Releases to Land** on page 10 for additional information.)
- The total amount for on-site release of carcinogens decreased by 39,000 pounds (28%) for 2014, and has declined 357,000 pounds, or 78%, since 2004. (See **Carcinogenic TRI Chemicals** on page 27 for additional information.)
- The total amount for on-site release of persistent bioaccumulative toxins (PBTs) decreased by 5,800 pounds (66%) for 2014. This was primarily the result of reductions of releases to land for lead compounds by the Indian River Generating Station. (See **Persistent Bioaccumulative Toxic (PBT) Chemicals** on page 21 for additional information.)
- Total TRI waste, including releases on-site, transfers off-site for treatment and disposal, and waste management on-site, increased by 22%, or 94.2 million pounds from 2013. On-site release amounts, reported above, were down 7%. Transfers off-site decreased 4%, primarily the result of decreases in off-site recycling. Waste managed on-site increased by 24%, primarily due to increases in on-site treatment.



What is the Toxics Release Inventory?

The Toxics Release Inventory, or TRI, is a publicly available data set containing information reported annually for toxic chemicals manufactured, processed, or otherwise used by certain facilities in Delaware and throughout the United States. Each year, these facilities report releases and waste management information for covered chemicals. The reportable list of toxic chemicals for 2014 included 594 individual chemicals and 30 chemical categories. TRI was established in 1986 under Title III, Section 313, of the Federal Superfund Amendments and Reauthorization Act (SARA 313) to provide information to the public about the presence and release of toxic chemicals in their communities. Title III is also known as the Emergency Planning and Community Right-to-Know Act (EPCRA). See **Appendix A** for more information.

Covered facilities report TRI information to the EPA and to the state in which the facility is located. In Delaware, the EPCRA Reporting Program within the Department of Natural Resources and Environmental Control (DNREC) receives and compiles TRI data from facilities located within the State. The DNREC EPCRA Reporting Program maintains a TRI database that is updated as new reports and revisions to old reports are received. The database currently contains 28 years of reported data. Most releases reported under TRI are also regulated through Federal and/or State permits.

This report contains detail from every 2014 TRI report or report revision from Delaware facilities received by DNREC as of October 1, 2015. Facilities must submit these reports to DNREC and the EPA by July 1 of each year. Several types of analyses are presented in this report based on this data and data from prior years. See **Access to TRI Files, under For Further Information**, on page 44 for details.

Reporting Requirements

A facility is required to submit a report for a listed toxic chemical if the facility meets all of the following criteria:

1. Employs the equivalent of 10 or more full-time employees,
2. Is a covered industry, or is a Federal facility (See Table 1 on the next page for a list of reporting industries), and,
3. Manufactures or processes more than 25,000 pounds, or otherwise uses more than 10,000 pounds, of the listed toxic chemical during the course of the calendar year. Threshold limits for specific chemicals known as PBTs (Persistent Bioaccumulative Toxics) are lower (see Table 7 on page 21).

Note that from time to time, the EPA proposes changes in reporting requirements. It gives agencies, reporting facilities, and other interested parties time to comment on these changes prior to making a final decision about the proposed change. See page 5 for more details.

Facilities that meet the criteria for reporting must submit one report for each listed toxic chemical if it was manufactured, processed, or otherwise used above threshold quantities. The reports cover releases and waste management activities during the prior calendar year.

It is important to note that a facility may need to report even if it has no releases of toxic chemicals, because reporting is based on the amount manufactured, processed, or otherwise used, and not the amount released.



Table 1 is a list of covered industries reporting to the Delaware TRI program for 2014, along with the corresponding three primary digits of the North American Industrial Classification System (NAICS) Codes. NAICS 6-digit codes are used to identify the type of activities performed at a facility. Each industry sector represented by facilities reporting in Delaware for 2014 is shown in Table 5 on page 17.

**TABLE 1
NAICS COVERED INDUSTRIES**

NAICS CODES	2014 INDUSTRY
212	Mining
221	Utilities
311	Food Manufacturing
313	Textile Products Mfg.
324	Petroleum and Coal Products Mfg.
325	Chemical Manufacturing
326	Plastics and Rubber Manufacturing
327	Nonmetallic Mineral Product Mfg.
331	Primary Metal Manufacturing
332	Fabricated Metal Product Mfg.
333	Equipment Mfg.
335	Electrical Equipment Mfg.
337	Furniture Manufacturing
339	Misc. Manufacturing
424	Wholesalers, Non-Durable Goods
454	Non-Store Retailers
928	National Security

2014 is shown in Table 5 on page 17. NAICS codes were used in TRI starting in 2006 to provide more discrimination between the various industry sectors reporting to TRI versus the previously used SIC codes.

The standard Form R report (see **Appendix L** for Form R) contains general facility information and complete data about on-site releases, off-site transfers, and on-site waste management activities. Form R can be used for all TRI reports. In lieu of Form R, the optional short Form A report (see **Appendix M** for Form A) may be used provided certain criteria are met. Form A, initiated in the 1997 reporting year, is a two-page report that provides facility information (essentially the same as Form R) and identification of the chemical, but does not provide any release, transfer, or waste management data.

In Delaware, 15% of the TRI reports were filed as Form A for 2014. After a facility determines that it must report on a given chemical, the facility is eligible to use Form A if:

For non-PBT chemicals:

1. The total annual reportable amount (including the sum of on and off-site releases, disposal, treatment, recovery for recycle or energy) is less than 500 pounds; and,
2. The total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds.

For Persistent Bioaccumulative Toxic (PBT) Chemicals including dioxins:

1. PBTs, including dioxins and dioxin-like compounds, may not be reported on Form A.
2. Form R, Schedule 1 is an additional form that is required for dioxins.

Because of the lack of data in the Form A reports, DNREC has been collaborating with the reporting facilities and emphasizing the importance of reporting on Form R.



Limitations of TRI Data

The user of TRI data should be aware of its limitations in order to interpret its significance accurately.

- **NOT ALL FACILITIES ARE REQUIRED TO REPORT.** A relatively small number of facilities in Delaware are required to report under TRI, based on the criteria listed on pages 2-3. TRI facilities are primarily industrial/manufacturing facilities and facilities report releases and other waste management activity to TRI. TRI does not account for amounts of hazardous material stored at facilities. The DNREC program addressing inventories of material stored on site, the Hazardous Chemical Reporting program known as “Tier II” (also administered under EPCRA), includes a much greater number of facilities. Facilities report amounts and the location of chemicals stored on-site to Tier II, but not releases. For further information, see *Hazardous Chemical Reporting in Appendix A*.
- **OTHER SOURCES NOT COVERED UNDER TRI ALSO RELEASE TOXIC CHEMICALS.** Other significant sources of pollution include small businesses, motor vehicles and agricultural operations. For example, on-road motor vehicles released an estimated 7,633 tons to air in Delaware just for the chemicals ammonia (NH₃) and volatile organic compounds (VOCs), for 2008. NH₃ and many VOCs are also TRI chemicals. See page 6, which shows that total TRI on-site releases for 2014 are 3,754,104 pounds, or 1,877 tons.
- **FACILITIES ARE REQUIRED TO BASE TRI DATA ON MEASUREMENTS AND MONITORED DATA ONLY IF THESE ARE AVAILABLE AT THE FACILITY.** If such data is not available, quantities may be estimated based on published emission factors, mass balance calculations, or good engineering judgment. Additional monitoring equipment and measurements are not required. For 2014, 11% of the reports representing 22% of reported on-site release amounts were estimated using monitoring data, with the balance being split between emission factors, mass balance calculations, and other methods.
- **THE DATA ESTIMATION METHODS MAY CHANGE OR VARY.** The methods of estimating or basis of calculating data used by different facilities, or even the same facility over time, may vary, and may result in significant changes in reporting while the actual release may remain relatively unchanged. DNREC performs cross-checks of the data with other information sources to verify its accuracy and contacts facilities concerning apparent discrepancies.
- **FACILITIES MAY REVISE FORM R DATA AT ANY TIME.** These revisions sometimes involve significant changes for data previously reported by the facility.
- **THE DATA DOES NOT INDICATE THE AMOUNT OF HUMAN EXPOSURE.** An important consideration to keep in mind is that TRI does not provide an indication of potential exposure to the reported releases and cannot be used by itself to determine the impact on public health. The chemical's release rate, toxicity, and environmental fate, as well as local weather and wind direction and the proximity of nearby communities to the release must be considered when assessing exposures. Small releases of highly toxic chemicals may pose greater risks than large releases of less toxic chemicals. The potential for exposure increases the longer the chemical remains unchanged in the

environment. Some chemicals may quickly break down into less toxic forms, while others may accumulate in the environment, becoming a potential source of long-term exposure. The chemical exposure of a population depends on the environmental media (air, water, land) into which the chemical is released. The media also affect the type of exposure possible, such as inhalation, dermal exposure, or ingestion.

Despite these limitations, TRI serves as a valuable screening tool to identify areas of concern that may require further investigation.

Recent Developments in TRI Reporting

The TRI reporting requirements change as the EPA seeks to improve the program through changes to the list of reportable chemicals and through program expansions. Because of these changes, considerable caution must be exercised when comparing TRI data from previous years. Notations will be made to indicate which data is presented with adjustments in order to show it on a uniform year-to-year basis.

- **Recently Added Chemicals – O-Nitrotoluene, Hydrogen Sulfide and PACs.** For the 2014 reporting year, o-nitrotoluene was added to the list of reportable TRI chemicals. Per the National Toxicology Program (NTP), o-nitrotoluene has been classified as “reasonably anticipated to be a human carcinogen”. O-nitrotoluene was not reported by any Delaware facilities in the 2014 TRI Report. In the 2012 reporting year, hydrogen sulfide was added to the list of reportable chemicals. Hydrogen Sulfide reports accounted for the majority of TRI waste reported as managed on-site in 2014, accounting for 87%. In 2011, **16 new carcinogens**, four of which are in the polycyclic aromatic compounds (PAC) category, were added to the list of reportable chemicals. None of the 12 individually listed new chemicals were reported in Delaware for 2014. PACs are reported as a category, so it is not possible to determine if any of the 5 facilities reporting PACs reported any of the four new PAC chemicals.
- **Upcoming Changes –** For the 2015 reporting year, a nonylphenol category is being added to the list of reportable TRI chemicals. EPA published the final rule for the addition of this chemical on September 30, 2014. Reports for the chemical will be due July 1, 2016, if TRI chemical use and other thresholds are met.

2014 Data Summary

TABLE 2
2014 TRI DATA SUMMARY
(IN POUNDS)

	2013	2014
No. of Facilities	61	57
No of Form As	33	31
No of Form Rs	195	177
No. of Chemicals	89	88
On-site Releases		
Air	998,934	805,127
Water	2,881,677	2,931,067
Land	151,956	17,910
Total On-Site Releases	4,032,567	3,754,104
Off-Site Transfers		
POTW's	935,842	934,025
Recycle	9,009,366	7,384,097
Energy Recovery	1,874,068	2,005,555
Treatment	251,834	314,129
Disposal	1,506,791	2,356,053
Total Off-Site Transfers	13,577,900	12,993,859
On-Site Waste Mgmt.		
Recycle	11,642,121	11,636,106
Energy Recovery	15,659,902	15,930,970
Treatment	375,430,183	470,213,664
Total On-Site Mgmt.	402,732,206	497,780,740
Total Waste	420,342,673	514,528,704

Delaware 2014 and 2013 TRI totals for on-site releases, off-site transfers, and wastes managed on-site are displayed in Table 2 for direct comparisons. For 2014, 57 facilities submitted 208 reports for 88 different chemicals. Total on-site releases were lower by 7% (278,000 pounds). This decrease was primarily driven by reductions in releases of hydrochloric acid aerosol (HCl) to air and barium compounds to land reported by the Indian River Generating Station, and a reduction in nitrates released to water reported by Perdue Georgetown. Off-site transfers were down 4%, with a significant reduction in off-site recycling. On-site waste management activities increased by 24% compared to 2013. There was a large increase in on-site treatment and a small increase in on-site energy recovery, while on-site recycling showed little change.

Types of Data

Table 2 lists the categories of data reported to Delaware and the EPA under the TRI program. Within the reports received from facilities, the data is broken down into additional sub-categories. For ease of presentation in this report, the data has been grouped into these categories as described below.

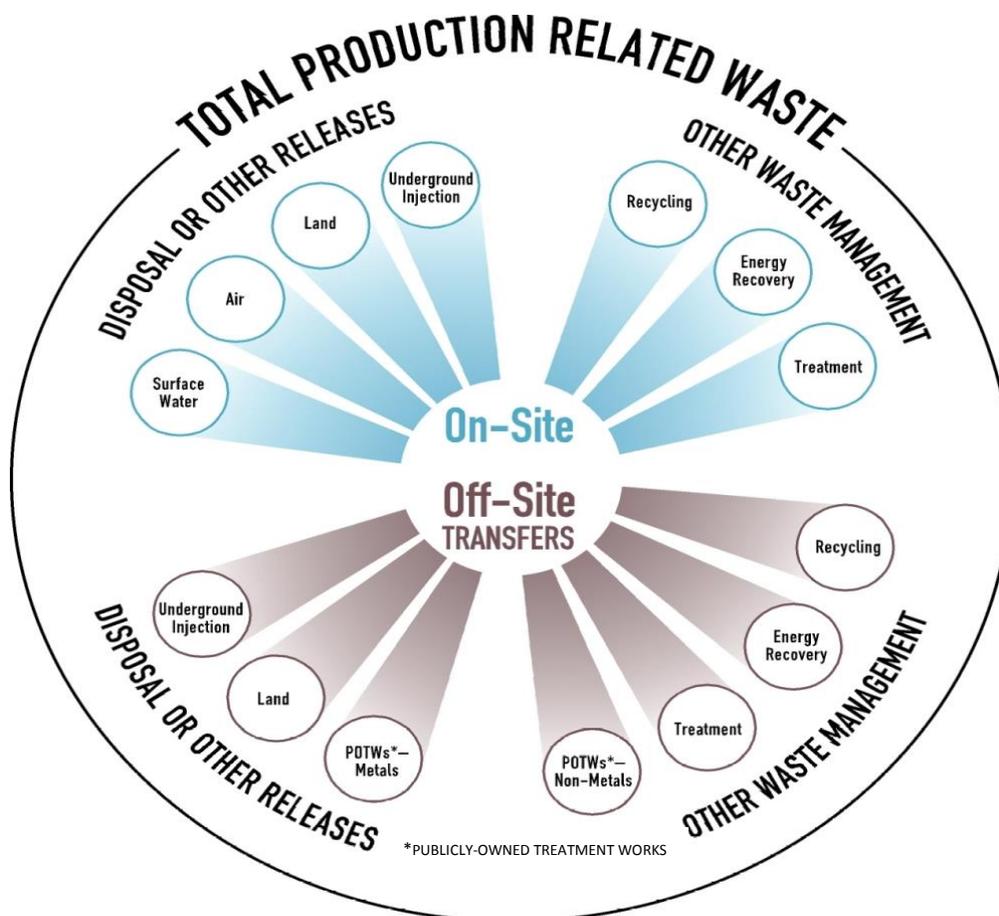
On-Site Releases: On-site releases in Delaware are to **air, water, or land**. There are four TRI categories, but one of these, **underground injection** of TRI chemical waste to wells, is not permitted in Delaware. The **release to air** category includes stack releases collected by mechanical means such as vents, ducts, or pipes, and fugitive releases escaping collection, including equipment leaks and evaporation. **Releases to water** are to water bodies, including streams, rivers, lakes, bays, or oceans. This includes releases from contained sources, such as industrial process outflow or open trenches. Releases to water which result from TRI-reportable chemicals in runoff and storm water runoff are also reportable. **Releases to land** are to (1) RCRA (Resource Conservation and Recovery Act) landfills, in which wastes are buried, (2) surface impoundments, which are uncovered holding areas used to volatilize and/or settle waste materials, (3) other land disposal such as waste piles or releases to land such as spills or leaks, (4) land application/treatment in which waste containing a listed

chemical is applied to or incorporated into soil, and (5) other non-RCRA landfills.

Off-Site Transfers: Off-site transfers include transfer of chemical waste to **POTWs** (publicly owned treatment works, typically waste water treatment plants), **recycle** operations (five types), **energy recovery** operations (two types), **treatment** operations (six types), and **disposal** (fourteen types). The receiving facilities are separate from the facility generating the waste. These five main categories of off-site transfers cover the types of final off-site management undertaken for each chemical.

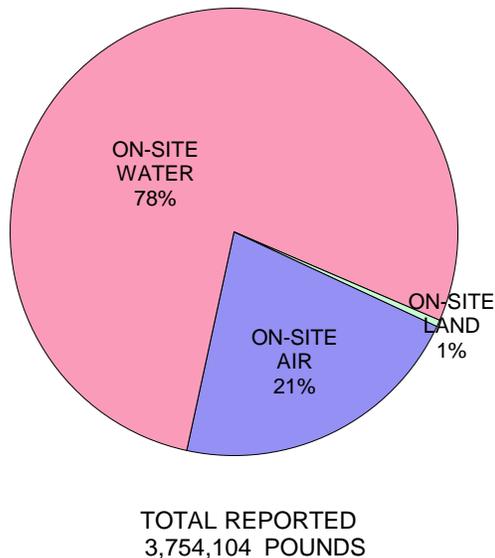
On-Site Waste Management: Waste management operations at the facility generating the waste are categorized to include **recycle**, **energy recovery**, and **treatment**.

The diagram below shows these types of data and how they are related to the four main categories of on- and off-site releases, disposals, and other waste management.



Amounts Reported: The amounts reported are in pounds per year, with a few exceptions, such as dioxins and dioxin like compounds, which are reported in grams. Certain chemical compounds have only the weight of the specific ion or elemental form reported instead of the entire compound, such as nitrate compounds or lead compounds. Also, specific chemicals are only required to be reported in certain states, such as hydrochloric and sulfuric acid, which are only required to be reported as aerosols or gases. For further information on the specific chemical reporting requirements, please refer to the TRI guidance documents at: <http://www2.epa.gov/toxics-release-inventory-tri-program/guidance-documents-tri-reporting>

**FIGURE 1
2014 ON-SITE RELEASES**



On-Site Releases

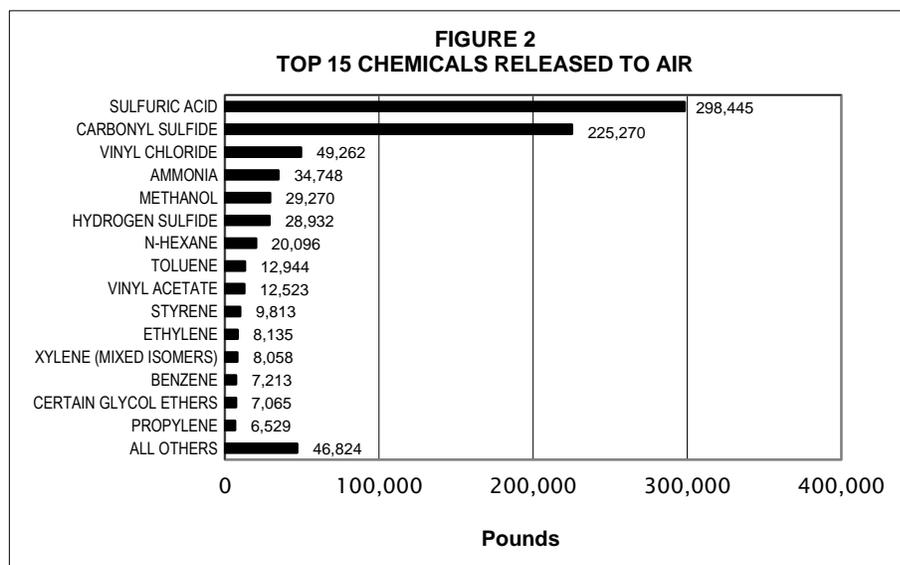
On-site TRI releases are emissions from a facility to the environment, including emissions to the air, discharges to surface water, and disposal onto or into the ground. These on-site releases to air, water, and land reported under TRI for 2014 made up less than 1.0% of all TRI-reported waste amounts. The remaining 99% of waste is managed on or off-site as shown in the diagram on the previous page and as seen in Figure 7 on page 13.

Figure 1 shows the totals of on-site releases reported in Delaware. A large portion, 78% of the total on-site release, is to water. Additional analysis of on-site releases is presented in Figures 2, 3, and 4, which show the top 15 chemicals released to air, water, and land. A trend graph for 2004-2014 for all reported on-site

releases is on page 34, and a trend graph for the top five chemicals is on page 35. Additional detail about on-site releases can be found in Appendices C, E, F, and H.

Releases to Air

Figure 2 depicts the on-site releases to air of the top 15 chemicals compared to the other 56 chemicals that were reported as released to air in 2014. Sulfuric Acid aerosol (gas)



releases, which make up 37% of all on-site releases to air, are released largely in the crude oil refining process by the Delaware City Refinery. Sulfuric acid releases have increased by 7.4% compared to 2013, with the refinery being in full operation. The second largest air-release, carbonyl sulfide (28%), is mostly released by

the DuPont Edge Moor facility as a gas by-product of the titanium dioxide production process. Vinyl chloride, which ranks third in releases to air, is used in the manufacture of polyvinylchloride (PVC). Formosa Plastics reported all of the releases to air of vinyl chloride

and vinyl acetate, which make up 6.1% and 1.6% of releases, respectively. Ammonia, which ranks fourth in releases to air (4.3%), can be used as a refrigerant for petrochemical, food processing, and chemical facilities and is also a by-product of air pollution control activities. Five facilities reported releases of ammonia, with Delaware City Refinery releasing the largest amount to air at 75% of the total or 25,999 pounds. Hydrogen sulfide, which accounted for 3.6% of all on-site releases to air, was predominantly released to air by the Delaware City Refinery (43%), Mountaire Farms of Delaware (31%), and the Perdue Georgetown facility (25%). Methanol releases, 3.6% of all releases to air, were reported by eight facilities with BASF Newport reporting the highest amount, 20,408 pounds, or 70%. N-hexane accounted for 2.5% of all releases to air, with the Delaware City Refinery the largest amount, 20,071 pounds or 99.9%. The remaining chemicals in Figure 2 were each less than 2.0% of total on-site releases to air.

TABLE 3
TRI CHEMICALS RELEASED TO WATER BY WATER BODY IN 2014

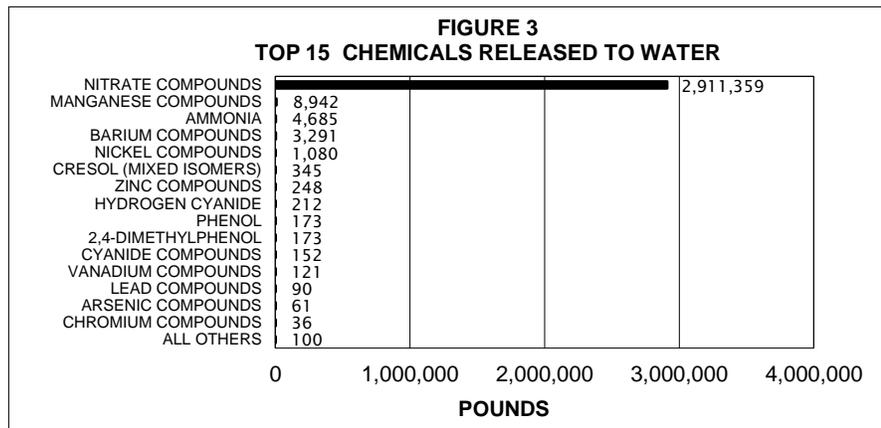
WATER BODY	NO. OF FACILITIES	NO. OF REPORTS	RELEASE (IN POUNDS)
ARMY CREEK	2	2	125
CHRISTINA RIVER	2	7	0
DELAWARE RIVER	5	45	2,762,258
DRAWYER CREEK	1	2	9
ISLAND CREEK	1	3	0
SAVANNAH DITCH	1	1	168,674
UNNAMED WATER BODY	1	1	0
STATE TOTAL		61	2,931,067

Releases to Water

Releases to water made up the largest portion of on-site releases at 78%. Table 3 shows the total amount of TRI chemicals released to each water body that received a TRI chemical. Not every report to a water body in Table 3 shows a release quantity. In Delaware, 14 of the 61 reports listing a water body as a possible destination

for a release to water did not report any quantities actually released to that water body. These facilities reporting zero for the release amount for a specific chemical met the TRI reporting requirements and did not have an actual release to the body of water, but had the potential of a release.

The Delaware River received 94.2% of all releases to water, the Savannah Ditch 5.8%, and all the others combined were less than 0.1%. Figure 3 shows the relative relationship of the top 15 TRI chemicals to all other chemicals (30) reported as released to water. This clearly shows the influence that nitrate compounds have on the total. The nitrate compounds category was the top chemical released, (99.3% of the total release to water), followed by manganese compounds (0.31%), ammonia (0.16%), and barium compounds (0.11%). The



remaining chemicals released to water were each less than 0.10% of the total releases to water. The Delaware City Refinery reported a release of 2,742,685 pounds of nitrate compounds to water for 2014, and Perdue Georgetown reported 168,674 pounds. The biological treatment of nitrogen-containing substances such as ammonia and animal waste is responsible for the formation of nitrate compounds, which are released to water. Metallic compounds (barium, cobalt, chromium, copper, cyanide, lead, manganese, nickel, vanadium, and zinc) are generally products of fuel combustion, and petroleum, ore and metal refining. The Delaware City Refinery, DuPont Edge Moor, Johnson Controls Battery Plant, and V&S Delaware Galvanizing are the facilities reporting releasing of these metal compounds to water. DuPont Edge Moor reported 100% of the manganese compounds and barium compounds released to water.

TABLE 4
TRI CHEMICALS
RELEASED TO WATER BY BASIN IN 2014

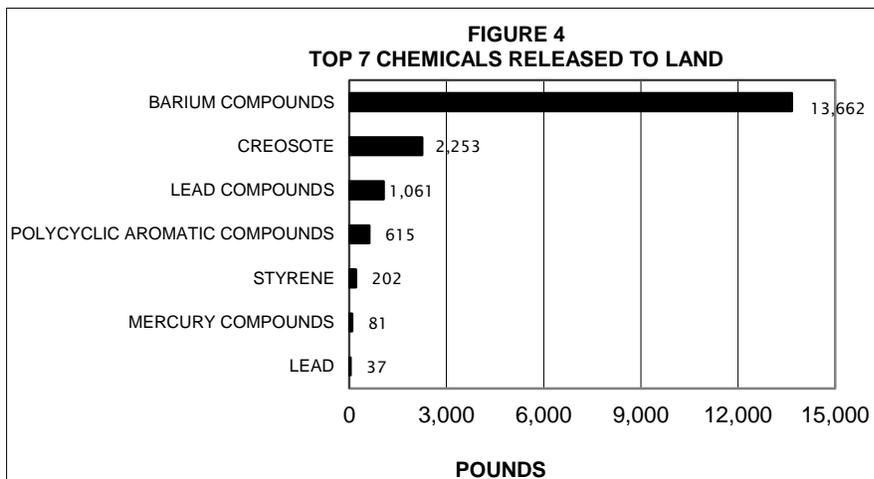
BASIN	RELEASE (IN POUNDS)	PERCENT
CHESAPEAKE	0	0.0%
DELAWARE BAY	2,917,312	99.5%
INLAND BAYS	0	0.0%
PIEDMONT	13,755	0.5%
STATE TOTAL	2,931,067	100.0%

Table 4 shows the total amount of TRI chemicals for 2014 released to each basin in the State of Delaware. The Inland Bays include lands that drain into the Indian River Bay/Rehoboth Bay area, then to the Atlantic Ocean. The Piedmont Basin contains lands that drain to the portion of the Delaware River above the City of New Castle. All the receiving streams, except the Island Creek, eventually feed into the Delaware Bay. Island Creek feeds into the Inland Bays and then into the Atlantic Ocean. The total amount released to

water increased by 49,000 pounds in 2014, largely the result of increase in the reported release of nitrate compounds by the Delaware City Refinery. Additional discussion about these releases can be found in the **Trend Analysis** section starting on page 31.

Releases to Land

Releases to land are shown in Table 2 on page 6. These releases are relatively small, amounting to 0.5% of total on-site releases. Figure 4 shows the contribution for the 7 chemicals reported as being released to land. Nearly all the releases to land are metals and metal compounds except for creosote, polycyclic aromatic compounds (PACs), and styrene. Most of the metals and metal compounds reported are formed during combustion from metal



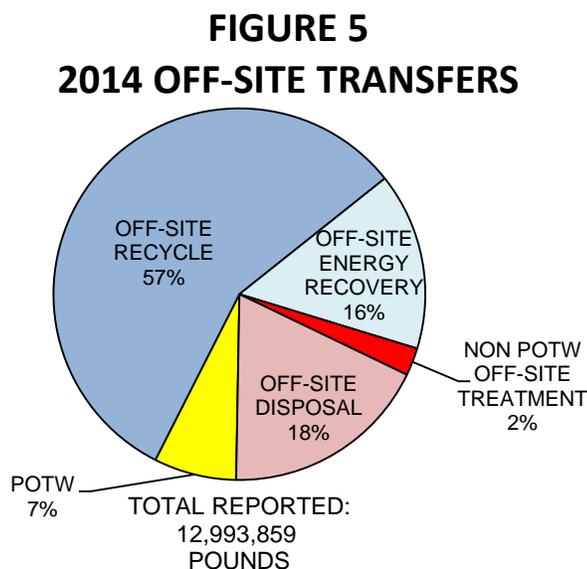
impurities that exist in coal or oil, or in the base metal from metal working processes. Barium compounds, lead compounds, mercury compounds, and lead are the top 4 metals and metal compounds reported, accounted for 83% of all on-site releases to land

and were primarily released by the Indian River Generating Station. Creosote accounts for 12.6% of all on-site releases to land and was released by Delaware City Refinery. All other chemicals accounted for approximately 4.5% of the on-site releases to land. Additional discussion about releases to land and their trends can be found in the **Trend Analysis** section starting on page 31.

Descriptions of some of the hazards that these chemicals, which were released to air, water, or land, may cause to humans, can be found in the **Chemical Data Fact Sheets** section under **For Further Information** on page 46. Facility specific information is available via the **2013 TRI Facility Profiles**, see **Access to TRI Files** under the **Further Information Section** on page 44.

Off-Site Transfers

Off-site transfers are material transfers to off-site locations for the purpose of disposal, recycling, energy recovery, or treatment. Treatment could be at a private waste treatment facility or at a POTW, typically a city or county wastewater treatment plant. The total amounts of chemical wastes transferred off-site decreased by 4.3% (584,041 pounds) since 2013. Off-site transfers account for 2.5% of total TRI waste and are more than 3 times the amount released on-site. Overall increases occurred in disposal, treatment, and energy recovery; and reductions occurred in recycling and in transfers to POTWs. The largest reductions include Evraz Claymont Steel with a decrease of 1,489,444 pounds of zinc compounds being transferred off-site for recycling due to the closure of the facility, and the 328,145 pound decrease in n,n-dimethylformamide transferred off-site for recycling by the Rohm & Haas (B2, B3, B8) facility. The largest increase reported was an increase of 882,381 pounds in off-site disposal of manganese compounds reported by DuPont Edge Moor. Figure 5 shows the relative portions of the five off-site transfer categories. Table 2 on page 6 shows these amounts in tabular form, and **Appendices D and G** provide additional detail about transfers from each facility.



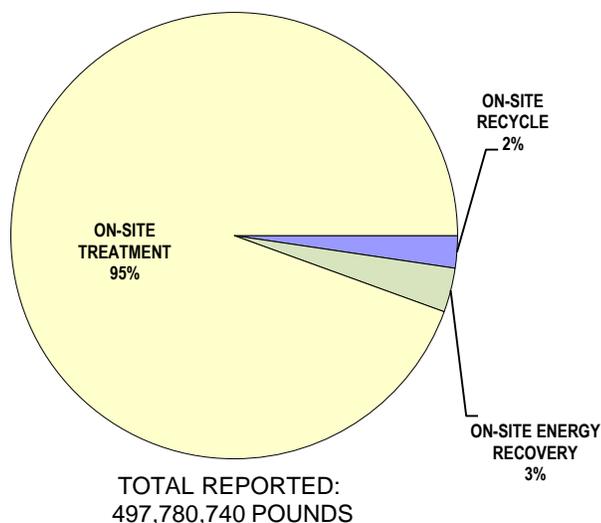
TRI chemicals in wastes are transported by various means from Delaware to their final destinations, most of which are out-of-state. For 2014, TRI chemicals were sent from Delaware TRI reporting facilities to 20 states, some as far away as California and Texas, in addition to locations in Delaware. Over 99% of TRI chemicals in all wastes transferred off-site were sent to out-of-state locations for further processing and/or disposal. However, approximately 99% of transfers to

POTWs generated by Delaware facilities are treated in Delaware. Off-site transfer to recycle operations accounted for 57% of the amounts within the five categories in off-site transfers, while energy recovery accounted for 16%, disposals accounted for 18% of the transfers, transfers to POTWs accounted for 7%, and non-POTW treatment was 2%. Ninety-three percent of the transfers to POTWs were to the City of Wilmington POTW, and all but 6,324 pounds of the 934,025 pounds treated at all POTWs were treated at Delaware POTW facilities. BASF Newport makes 52% of the total TRI chemical transfers to the Wilmington POTW.

On-Site Waste Management

On-site waste management is the amount of waste that never leaves the facility and is managed by the facility on-site. These activities generally represent a lower risk to the environment, as the materials are typically destroyed on site, although a small fraction may escape treatment and these amounts are reported as on-site releases.

**FIGURE 6
2014 ON-SITE WASTE MANAGEMENT**



The categories of **Treatment, Recycle, and Energy Recovery** are used to define on-site management activities related to TRI chemical wastes. The total amount of TRI chemicals managed on-site is 96.7% of the total TRI chemical waste. Figure 6 shows the portions of these wastes processed on-site. **Appendices D and G** provide additional detail on-site waste management. Facility specific information is available via the **2013 TRI Facility Profiles**, see **Access to TRI Files** under the **Further Information Section**

on page 44.

Waste Treatment (470,213,664 pounds) includes the amount of toxic material that was destroyed in on-site waste treatment operations. The Delaware City Refinery had the highest total amount of on-site waste treatment, combining for 454,744,320 pounds (96.7%) of the TRI waste treated on-site. Treatment of hydrogen sulfide at the Delaware City Refinery in the amount of 433,409,006 pounds was the highest single on-site treatment amount.

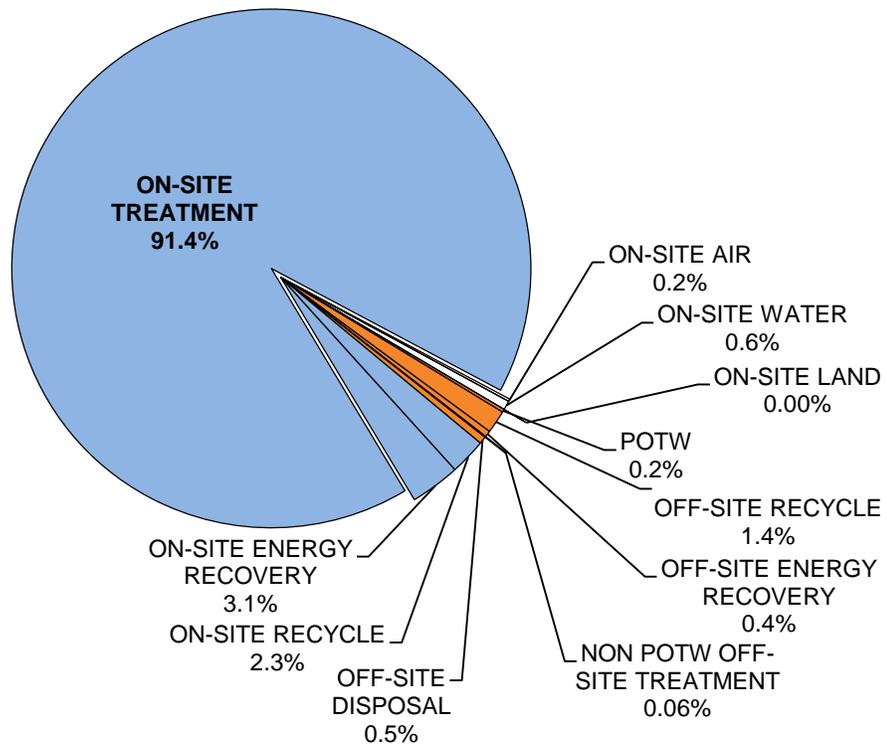
Recycled waste (11,636,106 pounds) is the quantity of toxic material recovered at the facility and made available for further use. Rohm & Haas (B2, B3, B8) recycled n,n-dimethylformamide, Air Liquide-Medal recycled methanol and n-hexane, and Orient recycled aniline, with these facilities combining to report 95% of the total amount recycled on-site.

Energy Recovery includes the quantity of toxic material that had heat value and was combusted in some form of energy recovery device such as a heat boiler. The Delaware City Refinery was the only facility in the State to report on-site energy recovery. For 2014, the refinery reported 15,930,970 pounds of TRI chemicals processed on-site for energy recovery, with ammonia accounting for 96.6% or 15.4 million pounds.

Total TRI Waste

Total TRI waste is the combined total of the on-site release, off-site transfer, and on-site waste management amounts in the TRI chemical reports. Figure 7 provides a perspective of the total TRI chemical waste picture in Delaware. Less than 1% of the total reported TRI waste is released on-site, 2.5% is transferred off-site for treatment or disposal, and almost 97% is managed on-site through treatment, energy recovery, and recycle operations by the facilities generating the waste. Figure 7 shows the relative portions of the various sub-categories of TRI release and waste management.

FIGURE 7
TOTAL 2014 TRI CHEMICAL MANAGEMENT
TOTAL REPORTED: 514,528,704 POUNDS

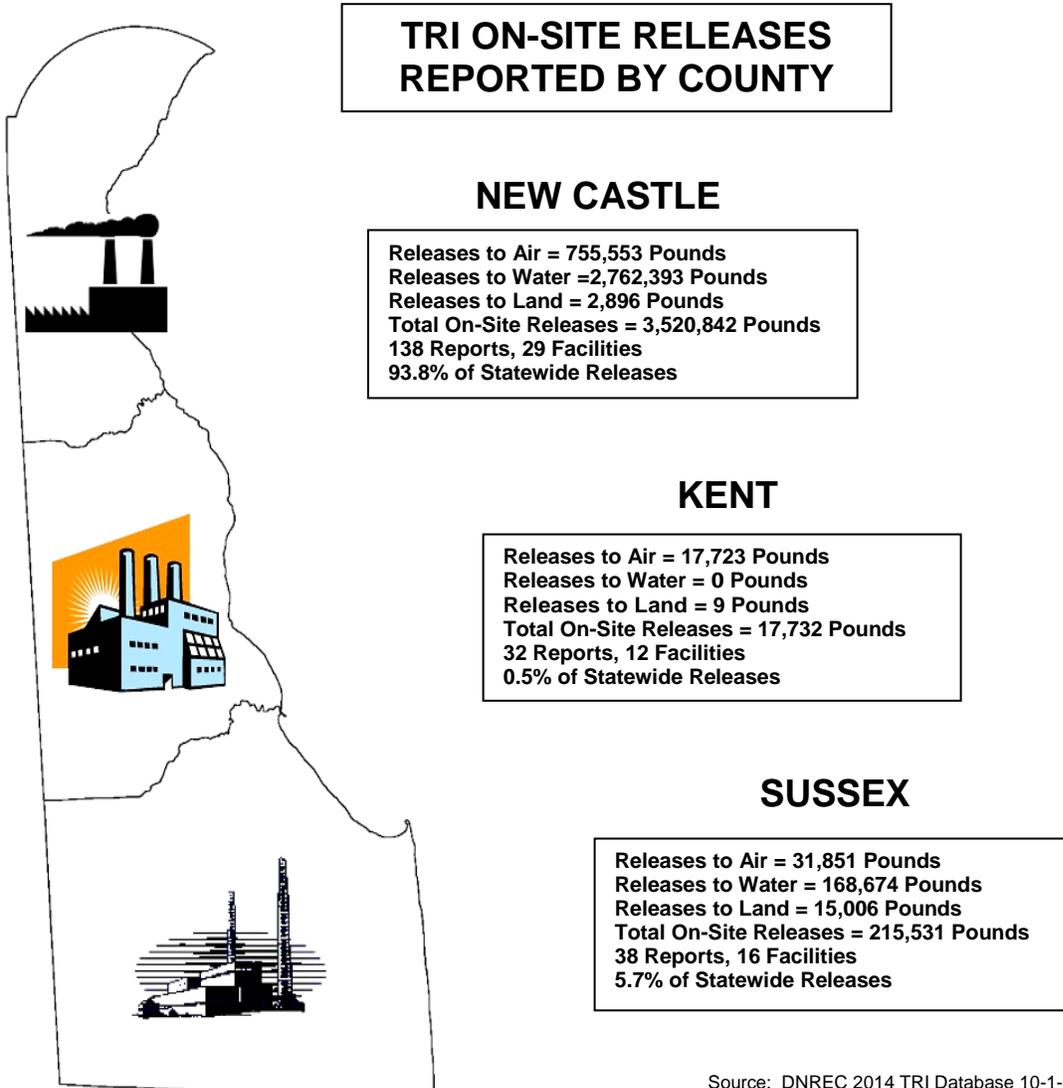


2014 Data Detail

On-Site Releases by County

Figure 8 below provides basic on-site release information for each county in the State.

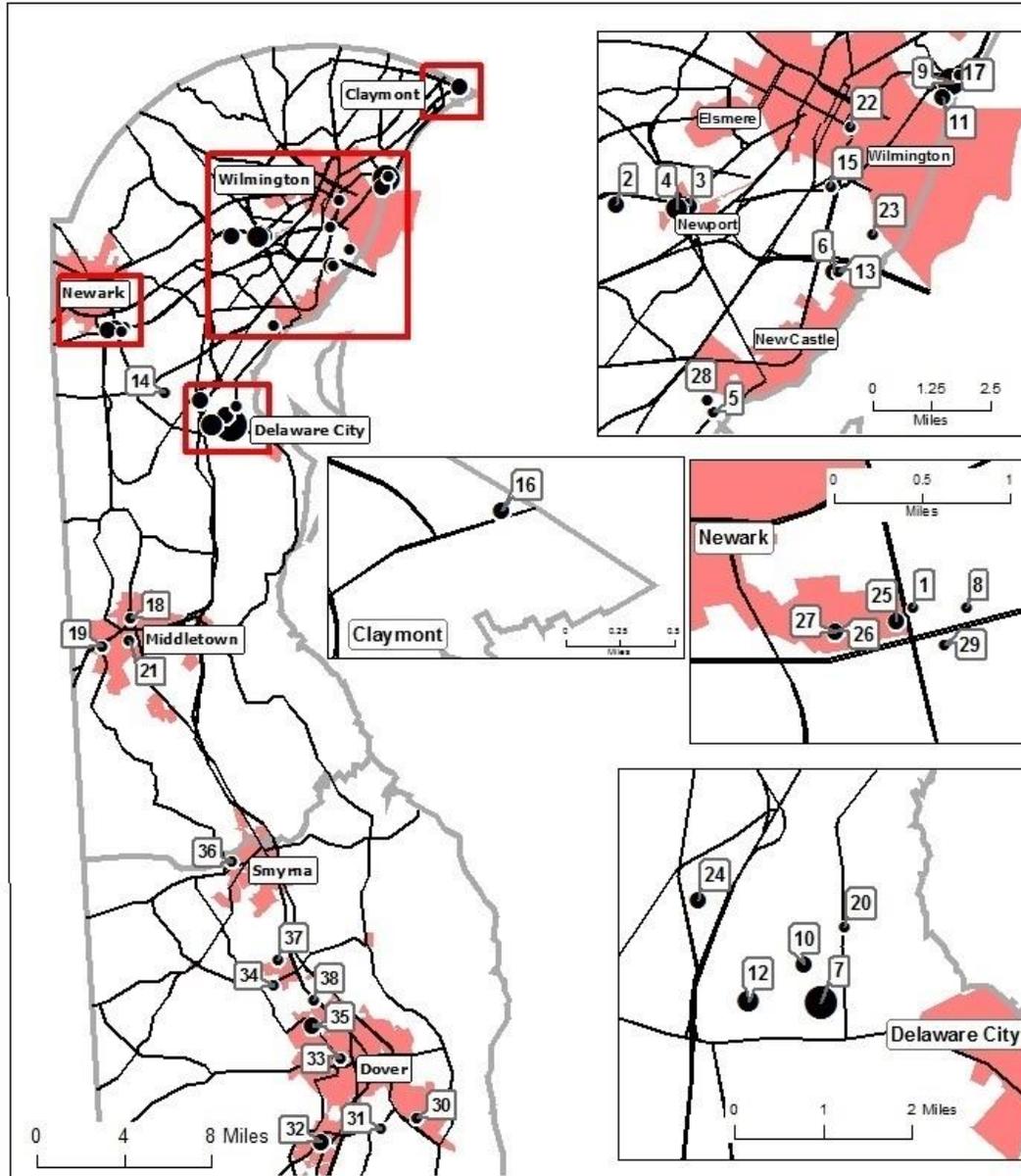
FIGURE 8



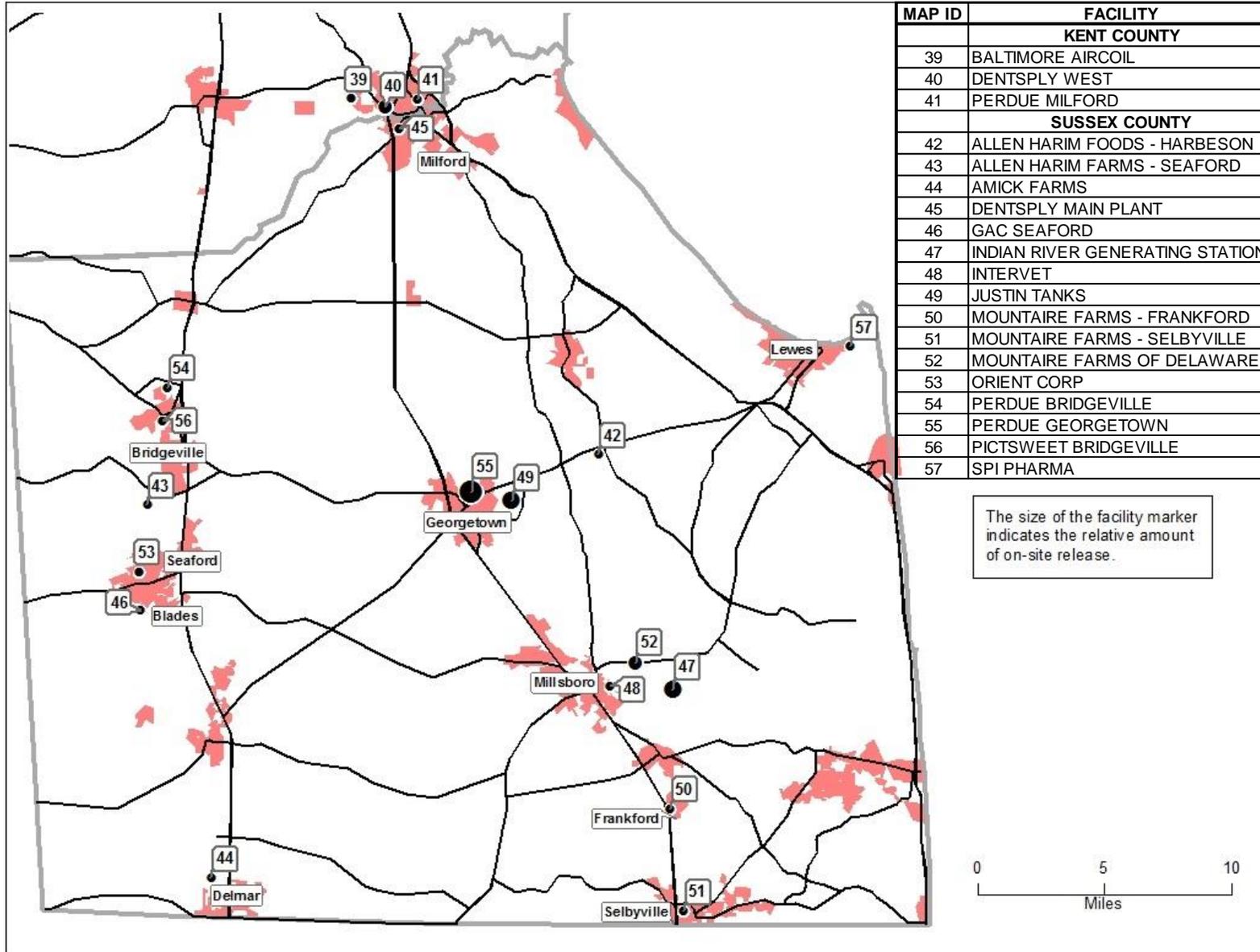
Source: DNREC 2014 TRI Database 10-1-15

Facility Locations and Information

Figure 9 on the following two pages shows the location of each reporting facility in the State, with the facility location marker size depicting the size of its on-site release relative to other facilities in Delaware. Facility contact information is in Appendix B. The **2013 Facility Profiles** provide a facility overview (see **Access to TRI Files** under the **Further Information section** on page 44). These facility profiles were not updated for 2014.



MAP ID	FACILITY
NEW CASTLE COUNTY	
1	AEARO TECHNOLOGIES
2	AGILENT TECHNOLOGIES NEWPORT
3	AIR LIQUIDE - MEDAL
4	BASF NEWPORT
5	COLOR WORKS
6	CRODA
7	DELAWARE CITY REFINERY
8	DUHADAWAY TOOL AND DIE
9	DUPONT EDGE MOOR
10	DUPONT RED LION PLANT
11	EDGE MOOR/HAY ROAD ENERGY CENTERS
12	FORMOSA PLASTICS
13	FUJIFILM
14	HMA-HERITAGE CONCRETE-BEAR
15	HMA-HERITAGE CONCRETE-HEALD STREET
16	HONEYWELL
17	IKO
18	JOHNSON CONTROLS BATTERY PLANT
19	JOHNSON CONTROLS DIST. CENTER
20	KUEHNE
21	MACDERMID
22	NORAMCO
23	PRINCE MINERALS
24	ROGERS CORP. (formerly ARLON)
25	ROHM & HAAS B2,B3,B8
26	ROHM & HAAS B5, B6
27	ROHM & HAAS B7,B15
28	V&S DELAWARE GALVANIZING
29	VP RACING FUELS
KENT COUNTY	
30	DOVER AFB
31	GRIFFITH ENERGY-CARL KING
32	HANDY TUBE
33	HANESBRANDS
34	HMA-HERITAGE CONCRETE-CHESWOLD
35	HIRSH INDUSTRIES
36	METAL MASTERS
37	PPG DOVER
38	SERVICE ENERGY DOVER



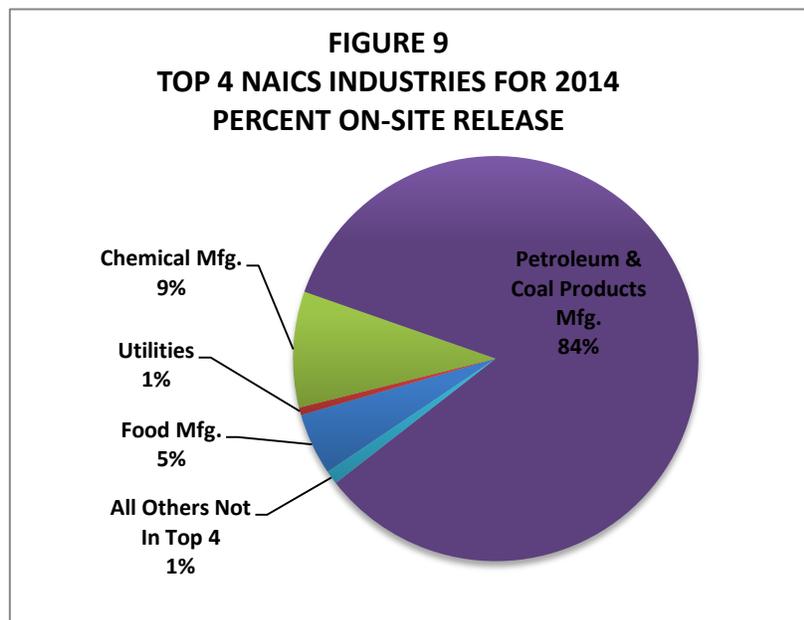
NAICS Industry Groups

Table 5 provides a description of each North American Industrial Classification System (NAICS) industry group and the number of facilities in each group that reported in Delaware, along with the total reported amounts for each NAICS code. This table also provides on-site releases, off-site transfers, and wastes managed on-site for each group.

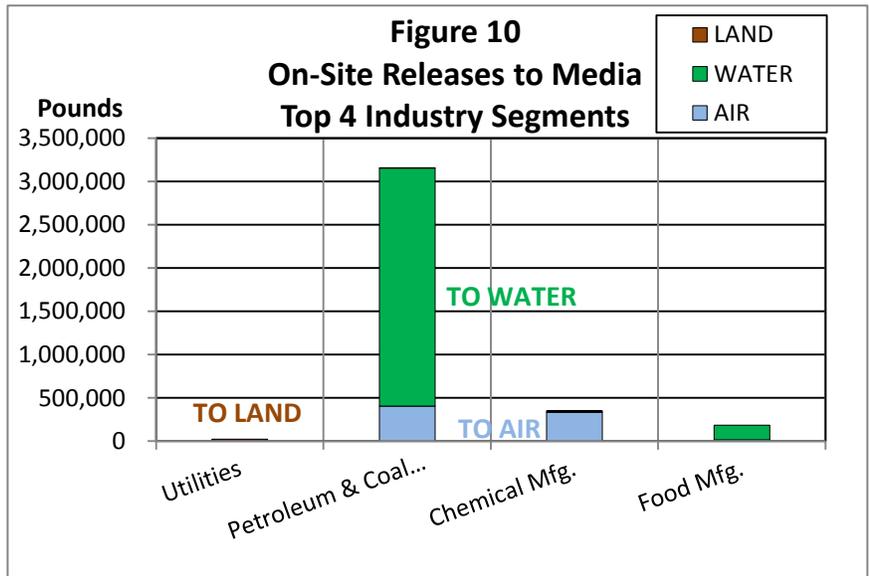
TABLE 5
2014 TRI DATA BY PRIMARY NAICS GROUP
(in pounds)

NAICS CODE	INDUSTRY GROUP	REPORTS	FACILITIES	FORM A	FORM R	ON-SITE RELEASE	OFF-SITE TRANSFERS	ON-SITE WASTE MGMT.
212	Mining	3	1	2	1	243	0	0
221	Utilities	11	2	0	11	22,709	126	1,836,419
311	Food Mfg.	22	10	15	7	185,712	13	350,139
313	Textile Products Mfg.	9	4	0	9	7,051	1,418,266	4,175,261
324	Petroleum & Coal Products Mfg.	43	4	4	39	3,157,778	193,666	470,675,835
325	Chemical Mfg.	72	15	5	67	347,351	4,885,140	15,061,962
326	Plastics & Rubber Mfg.	11	4	0	11	14,792	301,481	5,441,546
327	Non-metallic Mineral Product Mfg.	3	3	0	3	37	0	0
331	Primary Metal Mfg.	4	1	0	4	6,331	72,719	0
332	Fabricated Metal Product Mfg.	7	4	0	7	615	448,083	239,578
333	Equipment Mfg.	5	1	0	5	15	624,942	0
335	Electrical Equipment Mfg.	3	2	0	3	129	5,025,177	0
337	Furniture Manufacturing	1	1	0	1	7,062	0	0
339	Misc. Manufacturing	4	2	0	4	4,077	24,246	0
424	Wholesalers, Non-Durable Goods	2	1	2	0	0	0	0
454	Non-Store Retailers	3	1	3	0	0	0	0
928	National Security	5	1	0	5	202	0	0
	TOTAL	208	57	31	177	3,754,104	12,993,859	497,780,740

Figure 9 shows the percent contribution of each of the top four NAICS groups and all others not in the top four, compared to the reported total on-site releases. The top four, NAICS groups 221 (Utilities), 324 (Petroleum and Coal Products Mfg.), 325 (Chemical Mfg.) and 311 (Food Mfg.), account for 99% of the total on-site releases within the State. Facilities not in the top four NAICS industry groups contributed only 40,554 pounds of on-site releases, or 1% of the 2014 on-site release total.



Depending on the NAICS group, releases to air, water, and land can be very different. Figure 10 shows the top 4 NAICS groups in Delaware and to what media the releases occurred. For example, utilities reported having their releases split between air and land, with 35% of the releases to air and 65% of the releases to land. Chemical manufacturing reported most of their releases were to air at 96%. For petroleum & coal products, and for food manufacturing, most of their releases were to water – 87% and 91%.



Keep in mind this is based on a small sample size due to the overall low number of facilities reporting in Delaware. Other states will have greatly different results among NAICS groups, particularly those states whose industries have little presence in Delaware, such as mining or forestry/paper products manufacturing.

RELEASES FROM THE TOP 15 FACILITIES

Figure 11 shows the relative contribution of each of the top 15 reporting facilities to on-site releases. The top four facilities accounted for 3,645,222 pounds, or 97% of all on-site releases. Of the 3,754,104 pounds that were reported as released on-site by all 57 facilities Statewide, the top 15 facilities accounted for total releases of 3,740,574 pounds, or 99.6% of the total on-site releases.

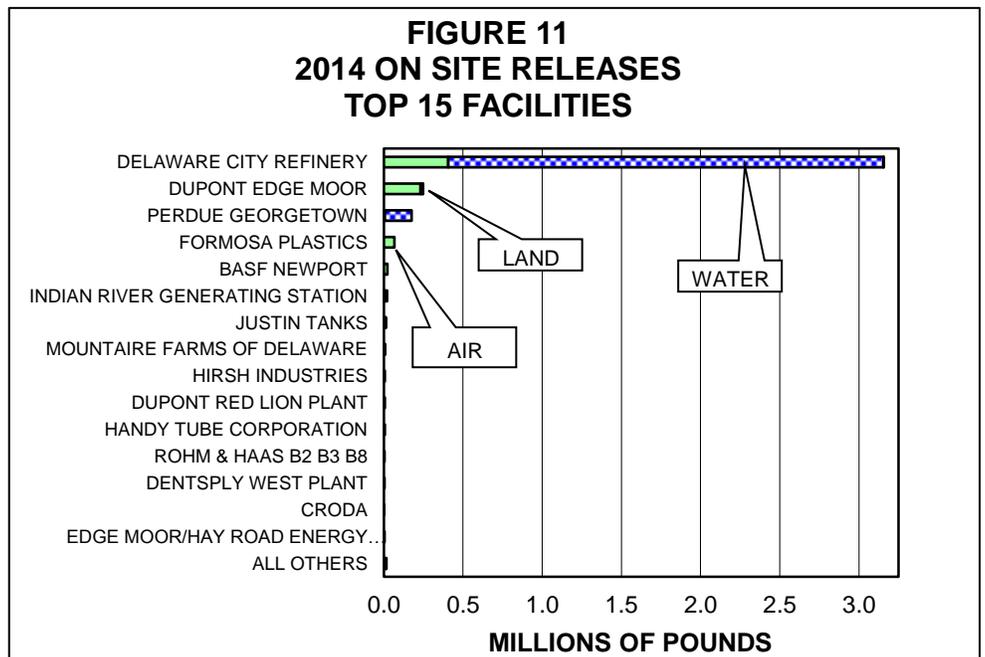


TABLE 6
TOP 15 FACILITIES 2013 AND 2014 RANKING BY ON-SITE RELEASE
(in pounds)

2013 RANK	2014 RANK	FACILITY	2014			2014 ON-SITE RELEASE	2013 ON-SITE RELEASE	2013 TO 2014 CHANGE IN RELEASES	
			TOTAL AIR	TOTAL WATER	TOTAL LAND				
1	1	DELAWARE CITY REFINERY	407,020	2,748,504	2,253	3,157,777	3,043,548	114,229	4%
3	2	DUPONT EDGE MOOR	231,131	13,754	615	245,499	260,174	(14,675)	-6%
4	3	PERDUE GEORGETOWN	7,330	168,674	-	176,004	237,000	(60,996)	-26%
5	4	FORMOSA PLASTICS	65,942	-	-	65,942	89,502	(23,560)	-26%
6	5	BASF NEWPORT	21,507	-	-	21,507	23,279	(1,772)	-8%
2	6	INDIAN RIVER GENERATING STATION	4,934	-	14,804	19,738	279,354	(259,616)	-93%
9	7	JUSTIN TANKS	9,802	-	202	10,004	10,019	(15)	0%
NR	8	MOUNTAIRE FARMS OF DELAWARE	9,262	-	-	9,262	2,417	6,845	283%
12	9	HIRSH INDUSTRIES	7,062	-	-	7,062	5,717	1,345	24%
10	10	DUPONT RED LION PLANT	6,972	-	-	6,972	9,325	(2,353)	-25%
11	11	HANDY TUBE CORPORATION	6,331	-	-	6,331	6,046	285	5%
15	12	ROHM & HAAS B2 B3 B8	4,150	-	-	4,150	4,157	(7)	0%
13	13	DENTSPLY WEST PLANT	4,077	-	-	4,077	5,584	(1,507)	-27%
NR	14	CRODA	3,280	-	-	3,280	3,673	(393)	-11%
NR	15	EDGE MOOR/HAY ROAD ENERGY CENT	2,970	1	-	2,971	760	2,211	291%
ALL OTHERS			13,359	134	37	13,530	52,012	(38,482)	-74%
TOP 15			791,768	2,930,932	17,874	3,740,574	3,980,555	(239,981)	-6%
STATE TOTALS, ALL FACILITIES			805,127	2,931,067	17,910	3,754,104	4,032,567	(278,463)	-7%

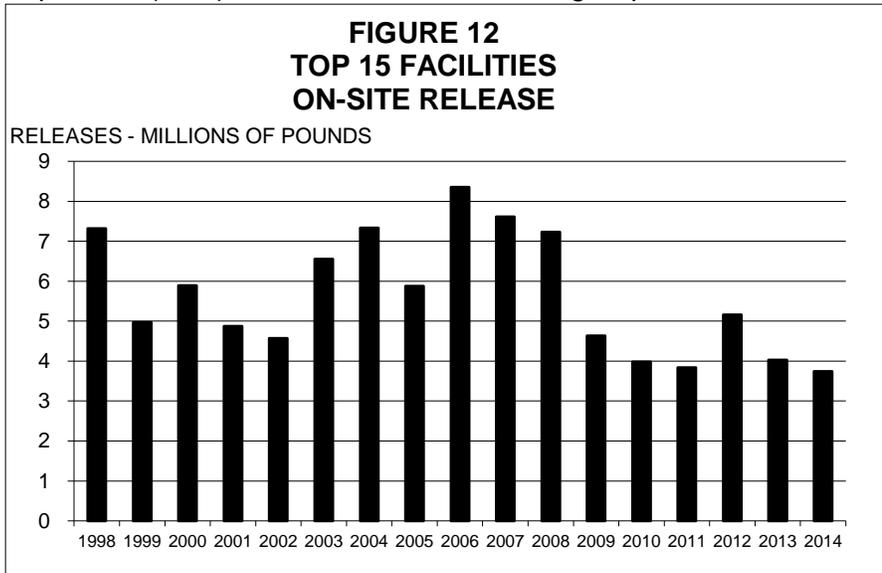
NR- Not ranked in the top 15 for 2013
DNR- Did not report in 2013
Source: 2013 and 2014 DNREC TRI Databases, October 2015

Table 6 shows the 2014 ranking of the top 15 facilities along with their 2013 ranking and the reported amounts of on-site releases for both years. Releases to the environment because of remedial actions, accidents, or one-time catastrophic events are included in these values. The percent change in total on-site releases for each of the top 15 facilities from 2013 to 2014 is also shown, and some of these changes are significant.

Figure 12 shows the totals for on-site releases for the top 15 reporting facilities from 1998-2014. The total on-site release trend for these facilities is down 269,199 pounds (6.7%) since 2013 and down 3.6 million pounds (49%) since 1998 after reaching a peak of 8.4 million pounds in 2006. These facilities reported 99.6% of the total on-site releases in the State for 2014, while the remaining 46 facilities reported 0.4%.

Five facilities of the top 15 facilities reported an increase in on-site releases, while ten reported a decrease for 2014. Changes at the facility, such as the way releases are estimated, how waste is managed,

changes in raw materials or processing methods, or installation of new or improved equipment possibly used to limit or eliminate releases of specific chemicals or all chemicals, may affect reported releases. The largest changes reported by the top 15 facilities in on-site





releases were decreases in the release of hydrochloric acid aerosols (HCl) to air and barium compounds to land reported by the Indian River Generating Station; down by 113,662 pounds and 86,378 pounds, respectively. Another large change in on-site releases was the increase in the release of nitrate compounds to water by the Delaware City Refinery, up by 111,326 pounds compared to 2013.

Although the TRI program itself does not regulate or limit emissions, other DNREC and federal programs do issue permits and limit emissions from operating facilities. TRI data is also shared with other programs within DNREC to verify data accuracy and to provide data and information to those programs.

Facilities No Longer Reporting to TRI

In the normal annual cycle of TRI reporting, some facilities may fall below the reporting thresholds and some facilities may close. In recent years, this involved the annual loss of 2-4 facilities, partially offset by 1-2 new facilities that started to report each year. Facilities that did not report in 2014 because they closed permanently are: Evraz Claymont Steel, BASF Seaford, Motech Americas in Newark, and HMA Heritage Concrete in Frankford.

For 2013, Chrome Deposit ceased operations and closed in 2012 and NRG Dover converted to natural gas and ceased burning coal and as result did not have to report.

For 2012, the Sunoco plant located in Marcus Hook, PA, part of which is located in Delaware, closed at the end of 2011. Both Occidental Chemical in New Castle and Air Liquide America in Delaware City fell below the reporting thresholds. Pinnacle Foods in Millsboro converted to using only natural gas and as result also fell below reporting thresholds.

For 2011, INVISTA, formerly known as the DuPont Seaford nylon facility, fell below the reporting thresholds as a result of lower production and its power plant conversion from coal to natural gas. Also in 2011, Buck Algonquin, a specialty manufacturer of marine hardware with headquarters in Stevensville, Maryland, closed its Smyrna facility.

Persistent Bioaccumulative Toxic (PBT) Chemicals, 2004-2014

For reporting year 2000 and beyond, the EPA established substantially lower reporting thresholds for 12 existing chemicals and one chemical category that are highly persistent and bioaccumulative in the environment. Six new chemicals and one new category were also added to the PBT list for 2000. The new thresholds apply regardless of whether the PBT chemical is manufactured, processed, or otherwise used. For 2011, four of the 16 new chemicals added (see page 5) are also PACs and they are now included in the PACs category.

Table 7 provides a current list of the PBT chemicals and their thresholds, and the number of reports received for each chemical for 2014.

TABLE 7
2014 DELAWARE PBT CHEMICALS
AND REPORTING THRESHOLDS
(pounds/year)

Chemical or Chemical Category	Threshold (Pounds)	2014 REPORTS
Aldrin	100	0
Benzo[g,h,i]perylene	10	1
Chlordane	10	0
Dioxin and dioxin-like compounds category	0.1 grams	4
Heptachlor	10	0
Hexachlorobenzene	10	1
Isodrin	10	0
Lead	100	4
Lead and lead compounds	100	6
Mercury	10	2
Mercury compounds	10	4
Methoxychlor	100	0
Octachlorostyrene	10	1
Pendimethalin	100	0
Pentachlorobenzene	10	1
Polychlorinated biphenyls (PCBs)	10	1
Polycyclic aromatic compounds category (PACs)	100	5
Tetrabromobisphenol A	100	0
Toxaphene	10	0
Trifluralin	100	0
TOTAL		30

PBTs are receiving increased scrutiny as we learn more about them, and reporting of PBTs is being progressively emphasized. These chemicals are of particular concern because they are not only toxic, but also because they remain in the environment for long periods of time, are not readily destroyed, and accumulate in body tissues.

In 2008, new data elements became available for dioxin and dioxin-like compounds (DLCs). The 17 compounds that fall under the TRI category of DLCs have a wide range (1.0000 to 0.0003) of toxicity; these values are called the Toxic Equivalent Factor (TEF). In order to compare them on an equal toxicity basis, we multiply the TEF by the pounds reported to get the Toxic Equivalent Quantity (TEQ). Facilities reporting on dioxins are also now required to report the amounts released or managed as waste for each of the 17 DLCs. See **Appendix N** for a copy of the DLC reporting form, Schedule 1. These amounts are provided along with the original amount reported in pounds. See pages 23-24 for additional detail on dioxins.

TABLE 8
2014 TRI PBT DATA SUMMARY
(IN POUNDS)

Table 8 shows the results of PBT reporting for 2012-2013 compared to total 2014 TRI data. The total count of PBT reports, 30, is lower than the counts of 38-42 for recent years. PBT on-site releases for 2014 comprise 0.08% of the total TRI on-site releases. Total PBT wastes are 1% of total TRI wastes. No PBT reports can be filed on Form A.

PBT on-site releases were lower for 2014 by 5,800 pounds (66%); with the greatest reduction coming from the Indian River Generating Station with lower lead compounds released to land by 5,155 pounds. Lead compounds, largely released from coal-fired power plants, made up 48% of the total on-site PBT releases for 2014. Since 2004, the trend of PBT on-site releases is down 90.8%.

The total PBT waste amount increased by 477,037 pounds (10%) for 2014 compared to 2013. The primary reason for this increase was the increased transfers of lead compounds to off-site recycling by the Johnson Controls Distribution facility and the Johnson Controls Battery Plant.

Table 9, on page 23, shows the amounts of each PBT chemical reported as released by the TRI reporting facilities in 2014. Honeywell reported the largest PBT release to air, 398 pounds of polycyclic aromatic compounds (PACs). DuPont Edge Moor reported the largest PBT release to water, 78 pounds of lead compounds. The Indian River Generating Station reported the largest release to land, 1,061 pounds of lead compounds. Over 99% of the PBT amounts transferred off-site for recycle was lead compounds from Johnson Controls Battery Plant and Distribution Center. Additional detail for mercury and mercury compounds, another important PBT, is in a separate section on page 25.

Three companies (The Delaware City Refinery, IKO, and V&S Galvanizing) reported the entire amount of on-site PBT chemical waste management. The refinery treated 473 pounds of benzo(g,h,i)perylene and 389 pounds of polycyclic aromatic compounds (PACs) on-site. IKO recycled 545 pounds of PACs on-site and V&S Galvanizing recycled 2,025 pounds of lead on-site. **Appendix I** shows the PBT data detail, listing each PBT chemical and the facilities reporting on it.

	PBTs only 2012	PBTs only 2013	PBTs only 2014
No. of Facilities	21	21	16
No. of Form A's	NA	NA	NA
No. of Form R's	42	38	30
No. of Chemicals	11	11	11
On-Site Releases			
Air	1,333	1,499	1,046
Water	70	175	108
Land	11,062	7,073	1,793
On-Site Releases	12,466	8,747	2,947
Off-Site Transfers			
POTW's	1	3	3
Recycle	4,102,492	4,525,143	4,995,979
Energy Recovery	0	0	0
Treatment	0	0	0
Disposal	29,517	23,515	35,200
Total Transfers	4,132,010	4,548,661	5,031,182
On-Site Waste Mgmt.			
Recycle	1,385	2,220	2,570
Energy Recovery	0	0	0
Treatment	864	897	862
Total On-Site Mgmt.	2,249	3,117	3,432
Total PBT Waste	4,146,725	4,560,525	5,037,562



TABLE 9
2014 PBT RELEASE SUMMARY
 (REPORTED AMOUNTS IN POUNDS)

2014 PBT CHEMICAL	FORM R REPORTS	TOTAL	TOTAL	TOTAL	ON-SITE	TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
		AIR	WATER	LAND	TOTAL		
BENZO (G,H,I)PERYLENE	1	0.00	5.00	0.00	5.00	0.00	473.00
DIOXIN AND DIOXIN-LIKE COMPOUNDS	4	0.0081	0.0187	0.00	0.0269	0.2998	0.0013
HEXACHLOROBENZENE	1	0.0909	0.0480	0.00	0.1389	12.29	0.00
LEAD	4	7.91	6.80	36.89	51.60	4,360.40	2,025.00
LEAD COMPOUNDS	6	250.11	90.04	1,061.30	1,401.45	5,025,658.93	0.00
MERCURY	2	19.61	0.0100	0.00	19.62	1,002.72	0.00
MERCURY COMPOUNDS	4	59.25	1.61	80.70	141.56	3.04	0.00
OCTACHLOROSTYRENE	1	0.00	0.3830	0.00	0.3836	0.2505	0.00
PENTACHLOROBENZENE	1	0.1011	0.2190	0.00	0.3201	0.6516	0.00
POLYCHLORINATED BIPHENYLS (PCB's)	1	0.00	0.00	0.00	0.0099	2.20	0.00
POLYCYCLIC AROMATIC COMPOUNDS	5	708.59	4.08	614.56	1,327.22	141.20	934.30
TOTALS	30	1,046	108	1,793	2,947	5,031,182	3,432

Source: 2014 DNREC TRI Database, October 2015
 Dioxins are reportable in grams and have been converted to pounds for this report.
 Four decimal places are used where small amounts are not 0.

Dioxin and Dioxin-Like Compounds

The term “dioxins” is used by the EPA TRI program and in this report to indicate the group of 17 dioxins and dioxin-like compounds (DLCs) reportable to TRI, out of a family of several hundred dioxins and dioxin-like compounds, including furans. These dioxins are also part of the PBT category, and you can see the totals for releases and other waste management in Table 9 above. In recent years, on-site release of DLCs has been in the range of 5.2-15.8 grams. For 2014, the amount was 12.2 grams.

On May 10, 2007, the EPA Toxics Release Inventory Program issued a final rule expanding reporting requirements for the DLCs category. The final rule requires that, in addition to the total amount released for the entire category, facilities must report the amount of each individual member for each release and waste management activity on a new form (Schedule 1). The reporting requirements of the final rule applied to the 2008 reporting year and to following years.

The reason for this rule is that the toxicity levels of these 17 DLCs vary greatly, and some compounds in this group have Toxic Equivalent Factors (TEF) **3,333 times less** than others. Because of this great variation, the Toxicity Equivalent Quantity (TEQ) is a way to show toxic chemical amounts on an equal toxicity basis. The EPA and DNREC use the individual mass quantity data to calculate TEQ amounts (Weight X TEF = TEQ). This data is available to the public along with the mass data. Table 10, on the following page, shows all 17 DLCs that are reportable to TRI and some basic information about them.

Among the “dioxins” included in TRI reports is the very toxic 2,3,7,8-TCDD dioxin (#1 in Table 10), which is the congener generally of most concern. All TRI “dioxins” are reportable in grams and were converted to pounds for this report since all other chemicals are reported in pounds (1 gram = 0.002205 pounds). You can see that TRI dioxin numbers 1 and 2 have the highest TEF (1.0000), and numbers 7 and 17 have the lowest (0.0003). This is a range of 3,333 to 1. In order to show the toxicity effects of the 17 dioxins on an equal basis, the amounts released in pounds are multiplied by their TEF. The resulting TEQ allows them to be compared on an equal toxicity level.

TABLE 10
DIOXIN TOXIC EQUIVALENT FACTORS (TEF)

TRI No.	Dioxin Chemical (DLC) Name	Abbreviated Name	CAS	TEF
1	2,3,7,8-tetrachlorodibenzo-p-dioxin	2,3,7,8-TCDD	1746-01-6	1.0000
2	1,2,3,7,8-pentachlorodibenzo-p-dioxin	1,2,3,7,8-PeCDD	40321-76-4	1.0000
3	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	1,2,3,4,7,8-HxCDD	39227-28-6	0.1000
4	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	1,2,3,6,7,8-HxCDD	57653-85-7	0.1000
5	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	1,2,3,7,8,9-HxCDD	19408-74-3	0.1000
6	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	1,2,3,4,6,7,8-HpCDD	35822-46-9	0.0100
7	1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin	1,2,3,4,6,7,8,9-OCDD	3268-87-9	0.0003
8	2,3,7,8-tetrachlorodibenzofuran	2,3,7,8-TCDF	51207-31-9	0.1000
9	1,2,3,7,8-pentachlorodibenzofuran	1,2,3,7,8-PeCDF	57117-41-6	0.0300
10	2,3,4,7,8-pentachlorodibenzofuran	2,3,4,7,8-PeCDF	57117-31-4	0.3000
11	1,2,3,4,7,8-hexachlorodibenzofuran	1,2,3,4,7,8-HxCDF	70648-26-9	0.1000
12	1,2,3,6,7,8-hexachlorodibenzofuran	1,2,3,6,7,8-HxCDF	57117-44-9	0.1000
13	1,2,3,7,8,9-hexachlorodibenzofuran	1,2,3,7,8,9-HxCDF	72918-21-9	0.1000
14	2,3,4,6,7,8-hexachlorodibenzofuran	2,3,4,6,7,8-HxCDF	60851-34-5	0.1000
15	1,2,3,4,6,7,8-heptachlorodibenzofuran	1,2,3,4,6,7,8-HpCDF	67562-39-4	0.0100
16	1,2,3,4,7,8,9-heptachlorodibenzofuran	1,2,3,4,7,8,9-HpCDF	55673-89-7	0.0100
17	1,2,3,4,6,7,8,9-octachlorodibenzofuran	1,2,3,4,6,7,8,9-OCDF	39001-02-0	0.0003

Also, you can see how, for a dioxin like numbers 1 and 2, where the TEF is highest at 1.000, the TEQ amounts are greater than the weight percentages. Conversely, for dioxin numbers 7 and 17, where the TEF values are a low 0.003, the TEQ amounts are smaller than their weight percentages. For example, DuPont Edge Moor reported dioxin number 7 (TEF = 0.003) as 69.9% of the total weight, but this was only 3.8% of the TEQ. The total on-site release amounts in pounds and their corresponding TEQ amounts reported by the four facilities that reported on dioxins in Delaware for 2014 were calculated and are presented in the Table 11. The 2014 total of 0.026889 pounds, or 12.2076 grams, was released on-site, which is DOWN from the 2013 total of 0.030267 pounds, or 13.7287 grams. Because of the differences in distribution of individual dioxins and dioxin-like compounds, the rankings changed when comparing by pounds or by TEQ. In addition, the pounds released or managed as waste are shown in **Appendix I**.

TABLE 11
FACILITIES SORTED BY DIOXIN TOXIC EQUIVALENT QUANTITY (TEQ)

SORTED BY TOTAL ON-SITE TEQ	TOTAL ON-SITE	ON-SITE	TOTAL ON-SITE	ON-SITE
FACILITY	TEQ, LBS.	TEQ RANK	LBS. RELEASE	LBS. RANK
EDGE MOOR/HAY ROAD POWER PLANTS	0.0002322	1	0.006768	2
DELAWARE CITY REFINERY	0.0001571	2	0.001281	3
DUPONT EDGE MOOR	0.0001036	3	0.018831	1
FORMOSA PLASTICS	0.0000004	4	0.000010	4
TOTALS	0.0004933		0.026889	

Mercury and Mercury Compounds

Mercury (elemental mercury) and mercury compounds are an important part of the PBT category, and this section discusses some of the data in these reports. Control of mercury and mercury compounds is becoming increasingly important as we learn more about mercury, and that mercury is a serious pollutant. Children, including unborn babies, exposed to mercury compounds can have impaired functions, including verbal, attention, motor control, and intelligence. Adults may be at lower risk than children, but mercury in fish consumed by adults may lead to problems similar to those found in children, as well as reproductive and cardiovascular problems. A significant source of mercury pollution comes from the air, as mercury released from power plants is deposited on water and land, where runoff may also migrate to the water. Many lakes and streams are impaired as a result of mercury releases from coal-burning power plants. As mercury makes its way into the food chain, restrictions on eating fish harvested from these water bodies are becoming more commonplace.

For 2014, total on-site releases of mercury and mercury compounds decreased 145 pounds (47%) to a total of 161 pounds. This was largely the result of a decrease in releases to air by Evraz Claymont Steel of 93 pounds due to closure of the facility; and to smaller decreases in releases to land by the Indian River Generating Station, and to air by the Delaware City Refinery. On-site releases of mercury and mercury compounds on the whole are down 81% since 2004.

Figure 13 shows the combined trend for mercury and mercury compounds, and how the trend has been greatly influenced by on-site releases to air.

Indian River Generating was the largest contributor for on-site mercury releases in 2014, with the majority of releases to land. The Delaware City Refinery reported the second highest release amount of mercury, with the majority of releases to air.

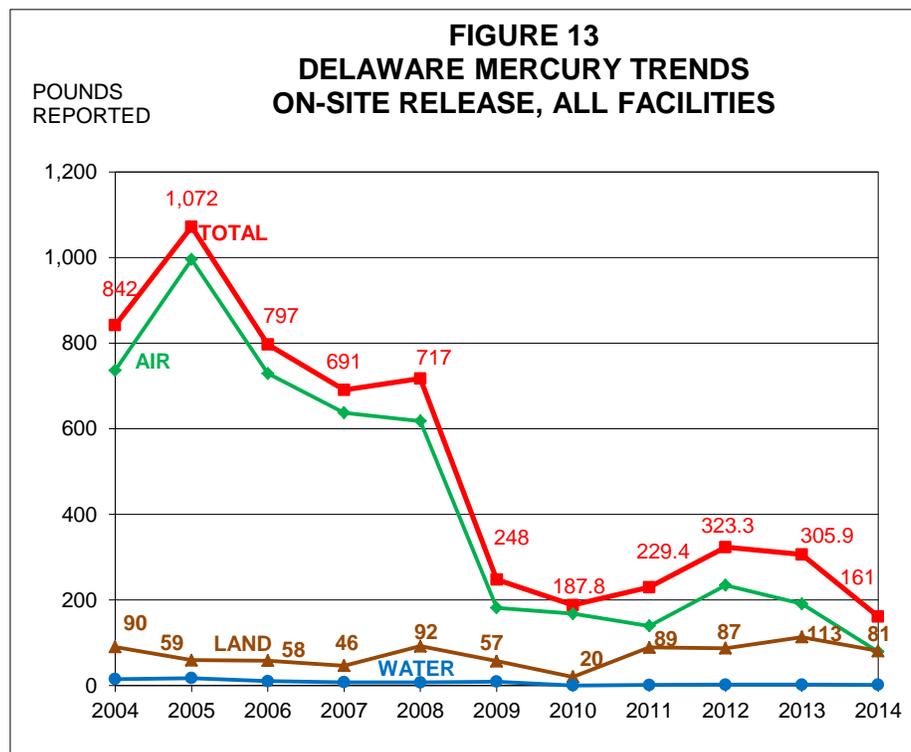
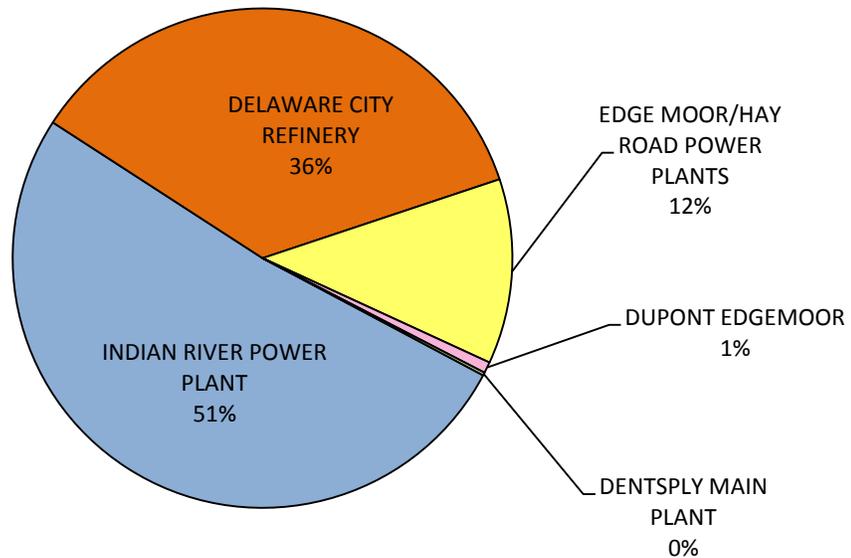


Figure 14 shows the percentage contributed by each of the facilities that reported a mercury or mercury compound release in 2014. On-site release amounts for mercury and mercury compounds can also be found in **Appendix F** on page F-7 and **Appendix I** on page I-1.

FIGURE 14
2014 ON-SITE MERCURY RELEASES
FROM DELAWARE FACILITIES



161 POUNDS REPORTED RELEASED ON-SITE

**TABLE 12
CARCINOGENS REPORTED BY
DELAWARE FACILITIES FOR 2014**

CHEMICAL NAME	IARC	NO. OF REPORTS
4,4'-METHYLENEBIS(2-CHLOROANILINE)	1	1
ARSENIC COMPOUNDS	1	1
ASBESTOS (FRIABLE)	1	1
BENZENE	1	1
CHROMIUM COMPOUNDS	1	3
ETHYLENE OXIDE	1	1
NICKEL COMPOUNDS	1	3
VINYL CHLORIDE	1	1
1,3-BUTADIENE	2A	1
CREOSOTE	2A	1
LEAD	2A	4
LEAD COMPOUNDS	2A	6
POLYCHLORINATED BIPHENYLS	2A	1
TRICHLOROETHYLENE	2A	1
COBALT COMPOUNDS	2B	2
DICHLOROMETHANE	2B	1
ETHYLBENZENE	2B	3
HEXACHLOROBENZENE	2B	1
HYDRAZINE	2B	1
HYDRAZINE SULFATE	2B	1
NAPHTHALENE	2B	4
NICKEL	2B	3
NITROBENZENE	2B	1
P-CHLOROANILINE	2B	1
POLYCYCLIC AROMATIC COMPOUNDS	2B	5
PROPYLENE OXIDE	2B	1
STYRENE	2B	2
TETRACHLOROETHYLENE	2B	1
TOLUENE DIISOCYANATE (MIXED ISOMERS)	2B	2
VINYL ACETATE	2B	1
CHEMICALS = 30	REPORTS = 56	

Source: 2014 DNREC TRI Database, October 2015

Carcinogenic TRI Chemicals

Some chemicals are reportable under TRI because they are carcinogens, and are known or suspected to cause cancer in humans. Table 12 shows those carcinogens that were reported by Delaware facilities for 2014. Each chemical is determined to a carcinogen by either the International Agency for Research on Cancer (IARC) or the National Toxicology Program (NTP). Next to the chemical is their rating is listed as: Known (1), Probable (2A), or Possible (2B) carcinogen. Of the 3.75 million pounds of TRI chemicals reported by facilities in Delaware as released on-site to the environment in 2014, 2.7% (100,955 pounds) were known or suspected carcinogens. For additional information on cancer rates and causes, please go to the Division of Public Health cancer web site listed in the “**For Further Information**” section on page 44.

Carcinogen Trends, 2004-2014

Thirty-one facilities reported on carcinogens for 2014, six less than in 2013. The number of carcinogen reports decreased by twelve to 56 in 2014, and the total number of reported carcinogenic chemicals was decreased by one to 30. On-site releases of all carcinogens decreased 27.6% (38,494 pounds) compared to 2013, and have decreased 88% (755,956 pounds) since the peak in 1998. The large decrease in on-site releases was primarily due to Formosa Plastics reported reduction in vinyl acetate release. Other carcinogens saw smaller increases in releases, with some facilities reporting decreases.

Table 13 shows amounts released on-site for carcinogens from 2004-2014, and Figure 15 shows the trend, which has been generally down during this time period.

TABLE 13
2004-2014 TRI CARCINOGENS
REPORTED ON-SITE RELEASES, NOT ADJUSTED

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
KNOWN											
AIR	96,562	98,107	66,475	56,287	69,781	60,664	63,975	70,033	73,545	58,914	59,175
WATER	9,817	4,643	5,222	6,435	4,452	2,059	576	1,318	121	429	1,187
LAND	173,414	134,194	143,115	46,021	104,112	26,843	8,843	552	558	411	0
KNOWN TOTAL	279,793	236,944	214,812	108,743	178,345	89,567	73,394	71,903	74,224	59,753	60,362
PROBABLE											
AIR	27,417	23,600	18,946	18,628	14,604	11,112	15,175	16,040	7,008	7,480	7,568
WATER	4	4	4	4	5	5	1,146	124	58	163	97
LAND	0	0	0	8,212	8,661	7,115	5,404	17,458	17,017	8,991	3,351
PROBABLE TOTAL	27,421	23,604	18,950	26,845	23,270	18,232	21,725	33,623	24,083	16,633	11,016
POSSIBLE											
AIR	99,543	104,480	102,414	70,722	77,436	56,817	63,059	80,974	98,864	60,152	28,732
WATER	2,308	3,416	1,544	1,655	1,170	522	38	25	20	2,053	29
LAND	49,266	44,500	44,251	24,005	28,203	17,459	615	562	901	947	817
POSSIBLE TOTAL	151,117	152,396	148,210	96,382	106,809	74,798	63,713	81,561	99,785	63,152	29,578
TOTAL AIR	223,522	226,188	187,836	145,637	161,821	128,593	142,210	167,047	179,417	126,545	95,475
TOAL WATER	12,129	8,062	6,770	8,094	5,627	2,586	1,761	1,468	199	2,555	1,313
TOTAL LAND	222,680	178,694	187,366	78,238	140,976	51,417	14,862	18,572	18,476	10,348	4,168
GRAND TOTAL	458,331	412,943	381,972	231,970	308,424	182,596	158,832	187,087	198,092	139,449	100,955

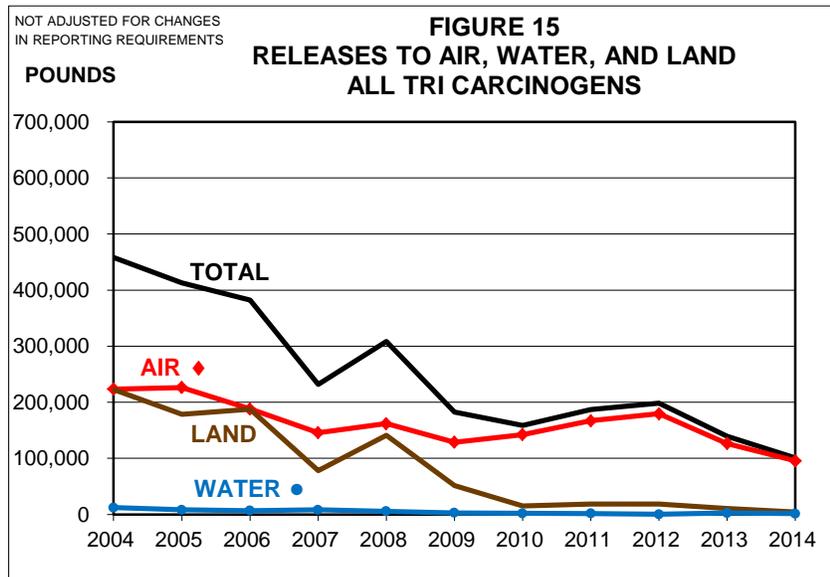
Source: DNREC TRI 2014 Database, October 2015

For 2014, on-site releases of all carcinogens are down 27.6%, or 38,494 pounds. Figure 15 shows a trend for each of the category releases by media and the total reported carcinogen release. The general trend has been down. In recent years, releases to air have largely influenced the total, while releases to land and water play a much smaller part.

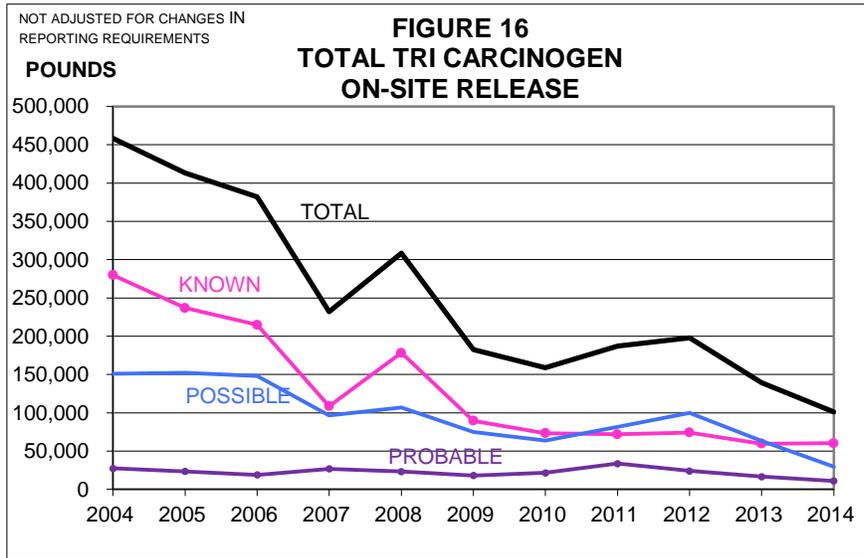
Known Carcinogens

Known Carcinogens, although having the least number of reports, is significant because of its high toxicity classification. Known carcinogens made up 60% of the total on-site carcinogen releases reported for 2014. Figure 16, on the next page, shows the trend of each of the three carcinogen groups and their effect on the total on-site release. On-site releases of known carcinogens remain about the same as in 2013, up by 1%. On-site releases of known carcinogens are down 522,771 pounds (89.6%) since 1998.

About 98% of the total known carcinogen amount was reported released on-site to air, 0% to land, and 2% to water for 2014. Releases to air of known carcinogens are 58.6% of all carcinogen on-site releases to air. Reported releases to air of known carcinogens increased by 0.4% (261 pounds) in 2014, and are down 71.7% from the amount reported in 1998.



Vinyl chloride, with a total release to air of 49,262 pounds and only reported by Formosa Plastics, is the highest (81.6%) of the total releases in the known carcinogen category and also the highest of all 30 carcinogens reported. Vinyl chloride contributed 83.2% of the known carcinogen category releases to air in 2014, 51.6% of all carcinogen releases to air,



and 48.8% of carcinogen total on-site releases in 2014. The second highest known carcinogen in 2014 was benzene. Benzene, largely released to air, and all from the Delaware City Refinery, has declined 87.6% from 58,371 pounds released in 1995 (from the Delaware City Refinery and the now closed Metachem facility) to 7,224 pounds in 2014. Benzene made

up 12.2% of the known carcinogen releases to air for 2014, down from 23% for 1995.

Ethylene oxide, all of which was released to air (2,688 pounds), ranks third in total on-site releases in the known carcinogen category. Croda reported all of the ethylene oxide releases on-site for 2014, up from 2,432 pounds reported for 2013.

Nickel compounds rank fourth in total on-site releases in the known carcinogen category at 1,086 pounds. DuPont Edge Moor reported 99.5% of the nickel compounds released for 2014. Releases of nickel compounds were mostly to water, with only six pounds released to air. Nickel compounds contributed 91% (1,080 pounds) of all the known carcinogen releases to water.

Probable Carcinogens

This category has the least number of chemicals (6), and the least released on-site (11%), but has some important chemicals in it; such as lead and lead compounds, trichloroethylene (TCE), and creosote. During 2014, 30% of the six probable carcinogens reported was released on-site to land, while 69% was released to air, and 1% was released to water.

TCE reported by Handy Tube was the highest release of a probable carcinogen with 6,331 pounds reported as released to air. On-site releases increased 285 pounds (5%) from 2013. TCE releases have trended downward, declining by 78% from 1995-2014, down from 29,332 pounds reported for 1995 to 6,331 pounds for 2014.

Creosote reported by the Delaware City Refinery was the second highest reported amount of on-site release of a probable carcinogen, with 2,651 pounds for 2014, down from 3,113 pounds in 2013. Of the amount released in 2014, 2,253 pounds were released to land, and 398 pounds to air.

Lead compounds had the third highest reported amount of on-site release of a probable carcinogen, with 1,401 pounds for 2014, a decrease from 6,990 pounds reported in 2013. The

Indian River Generating Station reported the highest release, 1,061 pounds to land and 26 pounds released to air, or 78% of the 6 facilities reporting lead compounds. The remaining 5 facilities had smaller amounts reported as released to air, water, or land.

The probable carcinogen on-site release total decreased by 5,617 pounds (34%) for 2013-2014 and is now at 11,016 pounds, 21% of the 1998 amount.

Possible Carcinogens

This category has the most chemicals and number of reports, reporting 29% of all on-site releases for carcinogens. About 95% of the total possible carcinogen amount is reported as released on-site to air, 4% to land, and 1% to water. The trend for 2014 is down by 53%, or 33,574 pounds, and down 87%, or 190,642 pounds, since 1998. The highest chemical release in this category is vinyl acetate at 12,523 pounds, all of which was reported released to air by Formosa Plastics. Vinyl acetate makes up 42% of all possible carcinogen on-site releases. Reported on-site releases of vinyl acetate decreased by 28,217 pounds (69%) for 2014.

Styrene is the second highest release in the possible carcinogen category for 2014, with reports totaling 10,020 pounds, all but 207 pounds to air. Justin Tanks reported 9,802 pounds of styrene released to air and 202 pounds released to land, down slightly from 10,019 pounds reported for 2013 and 99.8% of the total styrene release for 2014. The other facility reporting styrene was the Delaware City Refinery with 16 pounds. Reported styrene releases for 2014 increased by one pound.

As before, in **Limitations of TRI Data** on Pages 4-5, we urge caution when using this data, as **the TRI data does not indicate the amount, if any, of human exposure.**

Trend Analysis

Effect of Chemical and Facility Group Additions, 1990-2014

Although the TRI program began with reporting for 1987, the next two years were marked with a change each year in the manufacturing, processing, and otherwise use threshold amounts. For 1987, the thresholds were 75,000 pounds for manufacturing and processing, and 10,000 pounds for otherwise use. For 1988, the thresholds were 50,000/10,000 pounds, and for 1989 and beyond, the thresholds were 25,000/10,000 pounds. It is not possible to make a meaningful comparison of trends during this time, as the number of facilities and the number of reports varied because of the changing reporting criteria.

Significant groups of chemicals and facilities were added to the TRI program:

- **Chemical List Changes -1995**

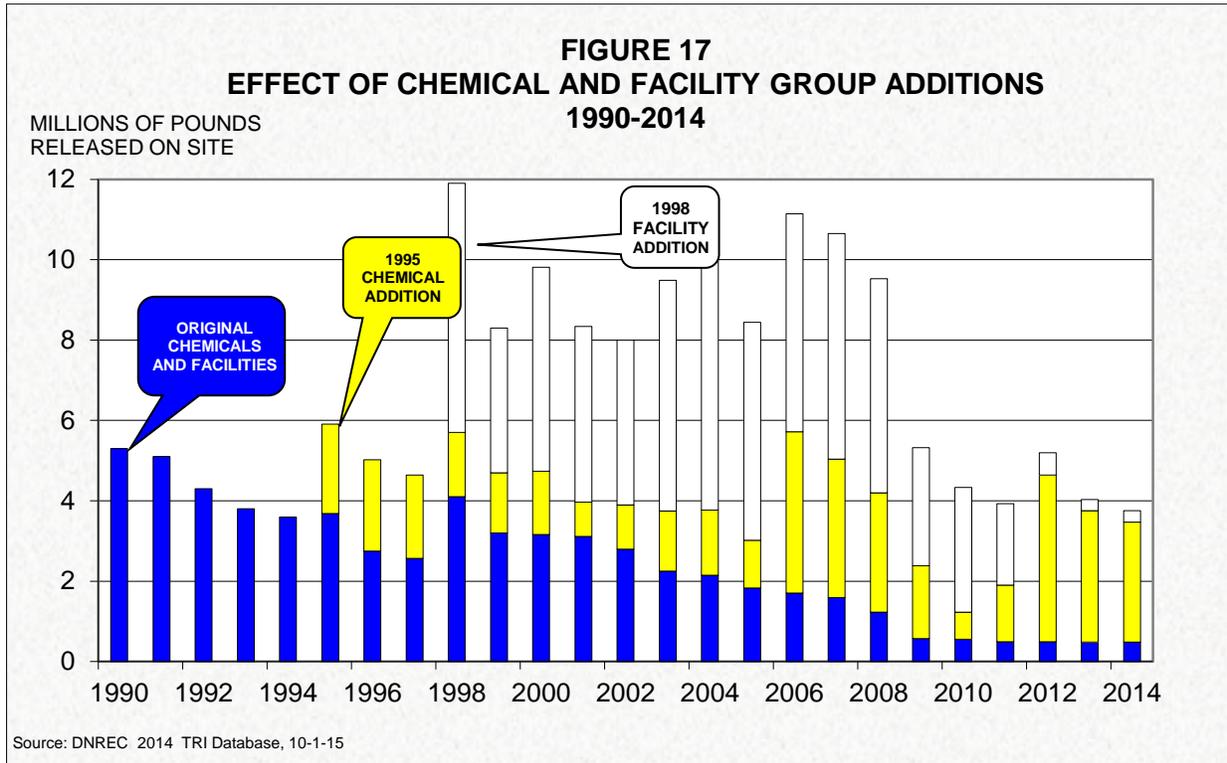
For reporting year 1995 and beyond, the EPA significantly expanded the list of chemicals. The list increased by 282 chemicals and chemical categories, added to the original list of 238 chemicals. Also during 1989-1995, other chemicals and categories were added or deleted, including chemical categories which are highly persistent and bioaccumulative in the environment (PBTs), bringing the total chemical count for 1995 to 581 and the chemical category count to 30. See details on the PBT chemical reports starting on page 21, and in Appendix I.

Other additions to the chemical list have occurred over time, including recently. In the 2011 reporting year, 16 new carcinogens, four of which are in the polycyclic aromatic compounds (PAC) category, were added to the list of reportable chemicals. For 2012, Hydrogen Sulfide was added to the list of reportable chemicals. Hydrogen Sulfide reports increased on-site treatment reported amounts by 329 million pounds in 2012 and is discussed in greater detail in ***On-site Waste Management Trends*** on page 38. For the 2014 reporting year, o-nitrotoluene was added to the list of reportable TRI chemicals. These additions bring the total chemical count to 594 listed chemicals and 30 chemical categories.

- **Industry Expansion - 1998**

Beginning with the 1998 reporting year, the EPA added seven industries to the list of facilities covered under TRI. Prior to the 1998 reporting year, only manufacturers (and Federal facilities were required to report (see Table 1 on page 3). The greatest impact to Delaware is the Electric Utilities (NAICS 221). The industry expansion significantly increased the amount of reported releases. This did not necessarily represent an increase in toxic releases in Delaware, but rather provided additional information to the public. Other smaller groups as noted above, or even individual chemicals, are also added or deleted over time.

Figure 17 shows these effects starting in 1990 and following the trend of each group since it was added to the TRI program. Data from the beginning of the TRI program in 1987-89 is excluded because reporting requirements changed significantly and a valid comparison of that data with later data is not feasible.



The trend of each group and the reports affecting the trends will be discussed in this Trend Analysis section. All groups have changed over time, with increases and decreases reflecting both changes in business conditions and improvements in analysis. Table 14 shows the amount reported in millions of pounds for each group at the time it was added, the 2014 reported amount, and the amount of change since the time it was added. If each group had remained constant at the time of its addition, amounts reported for 2014 would be 13.73 million pounds instead of the 3.75 million pounds actually reported for 2014. Due to several factors, including facility efforts to reduce pollution, increased regulation, partial or complete shutdown of facilities, and declining business conditions, the reporting facilities in Delaware have effected a reduction of 9.98 million pounds, or 73%.

TABLE 14
TREND OF ON-SITE RELEASES FOR CHEMICAL AND FACILITY ADDITIONS

GROUP	STARTING YEAR AMOUNT Millions of Pounds	2014 AMOUNT Millions of Pounds	CHANGE SINCE STARTING Millions of Pounds	PERCENT CHANGE
Original Facilities and Chemicals	5.30	0.49	- 4.81	-91%
1995 Chemical Addition	2.23	2.99	0.76	34%
1998 Facility Addition	6.20	0.28	- 5.92	-95%
TOTAL	13.73	3.75	- 9.98	-73%

TABLE 15
2004-2014 TRI DATA SUMMARY
(IN POUNDS)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
No. of Facilities	74	73	70	69	69	63	61	63	60	62	57
No. of Form As	52	53	45	44	31	29	31	34	33	33	33
No. of Form Rs	310	294	287	295	288	227	197	209	202	195	177
No. of Chemicals	103	103	101	102	100	90	79	90	88	91	88
On-Site Releases											
Air	7,935,921	6,478,578	6,341,764	6,920,245	5,845,072	3,194,221	3,519,986	2,416,526	1,109,209	998,934	805,127
Water	1,231,061	1,211,798	4,022,175	3,327,675	2,796,686	1,590,679	600,479	1,230,737	3,777,904	2,881,902	2,931,067
Land	1,111,392	752,894	781,701	406,188	885,976	537,489	210,747	278,669	306,702	151,956	17,910
Unadjusted On-Site Release	10,278,374	8,443,270	11,145,640	10,654,109	9,527,735	5,322,389	4,331,212	3,925,932	5,193,815	4,032,792	3,754,104
Off-site Transfers											
POTWs	1,466,469	1,514,575	1,421,647	1,243,125	1,117,335	636,602	996,970	1,048,588	814,866	935,842	934,025
Recycle	9,910,935	11,345,835	8,534,537	8,181,423	7,535,371	5,367,592	5,662,694	8,027,133	9,383,706	9,009,366	7,384,097
Energy Recovery	2,755,903	2,724,080	4,180,596	4,910,600	3,695,215	2,330,189	1,857,131	2,110,293	2,556,954	1,874,068	2,005,555
Treatment	174,893	194,679	237,073	171,044	150,297	140,248	336,190	274,727	963,123	1,112,090	314,129
Disposal	3,919,638	4,400,538	4,739,232	7,145,314	3,129,281	2,785,524	4,563,328	2,307,186	2,419,683	1,571,572	2,356,053
Total Transfers	18,227,837	20,179,707	19,113,085	21,651,506	15,627,498	11,260,156	13,416,312	13,767,928	16,138,331	14,502,937	12,993,859
On-Site Waste Mgmt.											
Recycle	8,772,135	10,079,028	10,594,593	10,945,896	10,870,477	5,630,119	7,678,337	7,974,584	9,326,213	11,642,121	11,636,106
Energy Recovery	23,440,027	19,624,524	17,937,031	20,387,061	20,932,200	14,670,034	-	9,172,883	16,227,012	15,659,902	15,930,970
Treatment	31,807,455	38,330,991	39,516,068	39,879,302	42,281,742	38,179,139	32,895,795	38,585,960	376,100,649	375,430,183	470,213,664
Total On-Site Mgmt.	64,019,617	68,034,543	68,047,692	71,212,259	74,084,419	58,479,292	40,574,132	55,733,427	401,653,874	402,732,206	497,780,740
Total Waste	92,525,828	96,657,520	98,306,417	103,517,874	99,239,652	75,061,836	58,321,655	73,427,286	422,986,019	421,267,934	514,528,704

NOT ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS
 SOURCE: DNREC 2014 DATABASE, OCTOBER 2015

Release and Waste Management Trends, 2004-2014

Table 15 on page 33 shows amounts reported for each of the last 10 years. Earlier data is available back to 1987, the first year of the TRI program. Changes in reporting requirements over time have caused an increase both in the total number of chemicals and in the total number industries that are subject to reporting. Significant changes to the TRI reporting requirements occurred in 1995, 1998 and 2000, when large increases in chemicals (1995), industries subject to reporting (1998), and reductions in PBT thresholds (2000) occurred. The 2012 reporting year marked the addition of hydrogen sulfide to the list of reportable chemicals. Comparison of this data with earlier data must be done carefully, as some chemicals and/or industries may not have been required to report over the entire time.

The analysis presented in this section uses 2004 as a base year for presenting trends for all reportable chemicals and facilities. Sections covering on-site releases and off-site transfers are **not adjusted** for any changes in reporting requirements. However, in on-site releases section, further analysis is presented on on-site releases, showing the impact of the Delaware City Refinery on the overall releases using 2010 as a base year. The on-site management section discusses the impact of the addition of hydrogen sulfide to the list of reportable chemicals.

On-Site Releases, 2004-2014

Figure 18 shows the on-site release trends during 2004-2014. On-site releases include emissions to the air, discharges to bodies of water and releases at the facility to land, including on-site landfills. On-site release amounts decreased by 6.9% for 2014 (278,463 pounds) following a 22.4% decrease (1,161,025 pounds) for 2013.

Significant changes in the amounts reported for 2013-2014 include the facilities and chemicals shown in Table 16 on the next page. To put the changes in perspective for 2014, there were 56 reports with a higher amount, 105 reports with a lower amount, and 16 reports with no change from the 2013 amount. There were 2 reports with an increase greater than 10,000 pounds and 10 reports with a decrease greater than 10,000 pounds.

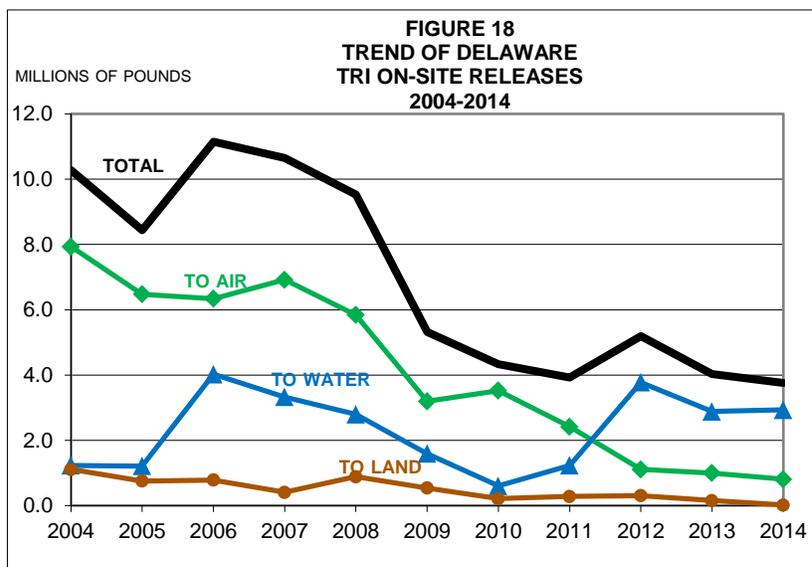
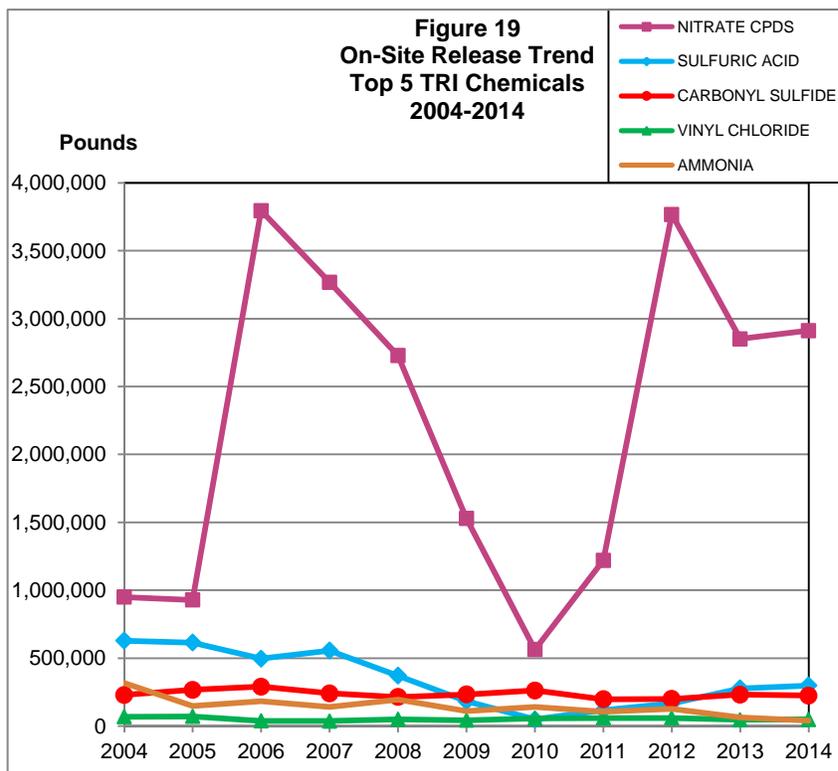


TABLE 16
REPORTS OF MAJOR CHANGES IN ON-SITE RELEASES FOR 2014 FROM 2013

FACILITY	CHEMICAL	MEDIA	CHANGE IN ON-SITE RELEASES (pounds)
Indian River Generating Station	Hydrochloric Acid	Air	-113,662
Indian River Generating Station	Barium Compounds	Land	-86,378
Perdue Georgetown	Nitrate Compounds	Water	-50,326
Delaware City Refinery	Sulfuric Acid	Air	+32,070
Delaware City Refinery	Nitrate compounds	Water	+111,326

Some of these changes (higher or lower), like the changes in hydrochloric acid amounts, may have been caused by normal year-to-year variations in production levels at the facility, the chemical content of raw materials, or by the new Delaware Regulation 1146, which started to take effect in 2009. Some changes may also have been caused by improvements in the way facilities estimate amounts. These changes are the primary reasons for the reductions and increases in the totals for 2013-2014. Changes are also discussed in the **Facilities No Longer Reporting Section** on page 19. Facility specific information is available via the **2013 TRI Facility Profiles**, see **Access to TRI Files** under the **Further Information Section** on page 44. In addition, you may contact a facility for a more in-depth discussion of the reasons for specific changes, and consult the appendices in

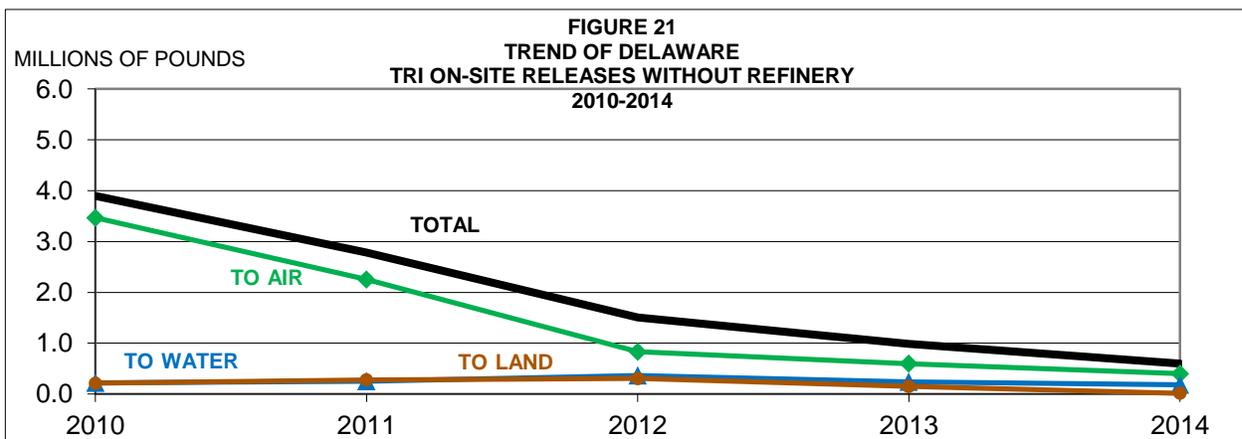
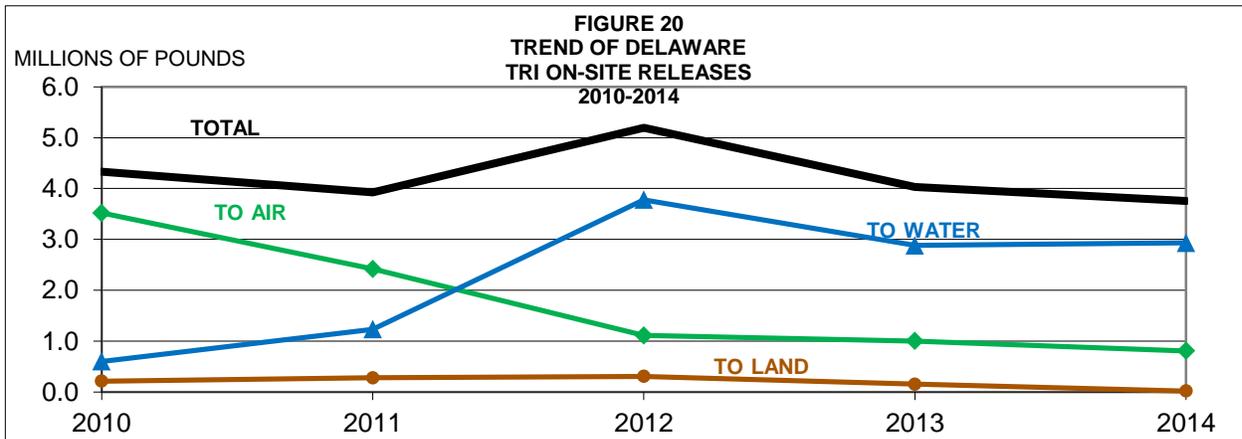


this report for the exact amounts that were reported.

Figure 19 shows the trend since 2004 for the top five chemicals based on on-site release amounts reported for 2014 in Delaware. These five chemicals represent 93.9% of all on-site releases from the 88 chemicals reported in 2014. Nitrate compound releases trended downward from 2006 through 2010, when the Delaware City Refinery was in the process of shutting down and preparing to be sold. From 2010 through 2012, nitrate compound releases trended upward with the

refinery coming back online and being in full operation. Nitrate compound releases accounted for 78% (2.9 millions pounds) of all on-site releases in 2014. Sulfuric acid ranked second in on-site releases, accounting for 8% (298,445 pounds). Sulfuric acid releases have trended down from 2008 through 2010, but have trended upward since 2010 with the Delaware City Refinery coming back online. Carbonyl sulfide ranked third in on-site releases, accounting for 6% (225,270 pounds). Dupont Edge Moor releases over 99% of the carbonyl sulfide reported to air, with release amounts varying year to year. Vinyl chloride accounted for 1.3% of the total in on-site releases. Releases of vinyl chloride increased by 4.2% since 2013, and have varied from year to year. Ammonia accounted for 1% of the total on-site releases, down 39.1 % since 2013, with a general downward trend in recent years.

Figure 20 shows the on-site releases to air, water and land over the last 5 reporting years from 2010 through 2014. As the figure depicts, total releases mirror the trend of releases to water. This is due to nitrate compounds reported as released to water by the Delaware City Refinery, which accounted for 73% of all onsite releases in 2014. Figures 20 and 21 provide a side by side comparison showing the impact the refinery has on the overall on-site releases. Figure 21 shows all other on-site releases, with the releases of the Delaware City Refinery removed. Onsite releases reported from all other facilities have dropped by 84.7% (3.3 million pounds) since 2010, while total on-site releases, including the refinery releases, are down by 13.3% (577,000 pounds) compared to 2010. With the refinery removed, releases follow the trend of releases to air, which have reduced significantly since 2010. As discussed previously, Delaware Regulation 1146 was a major factor in onsite release reductions. Another reason



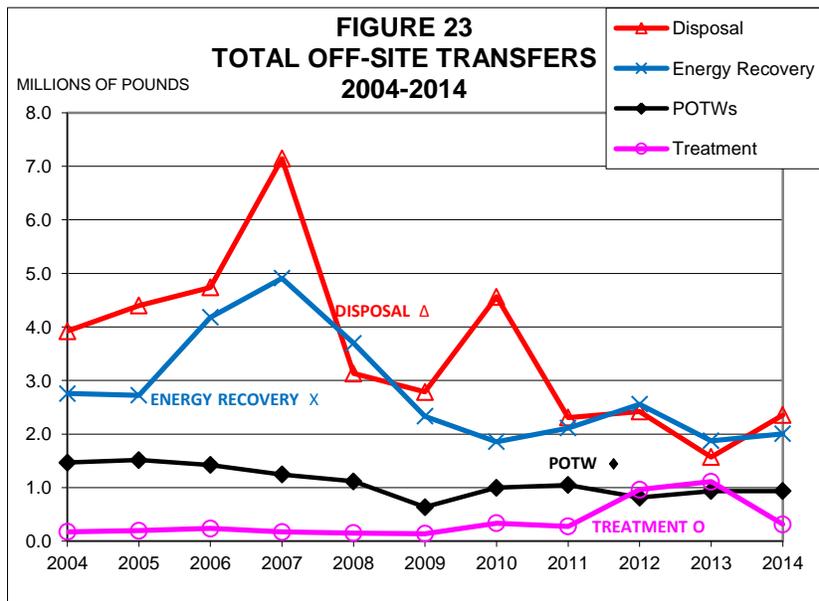
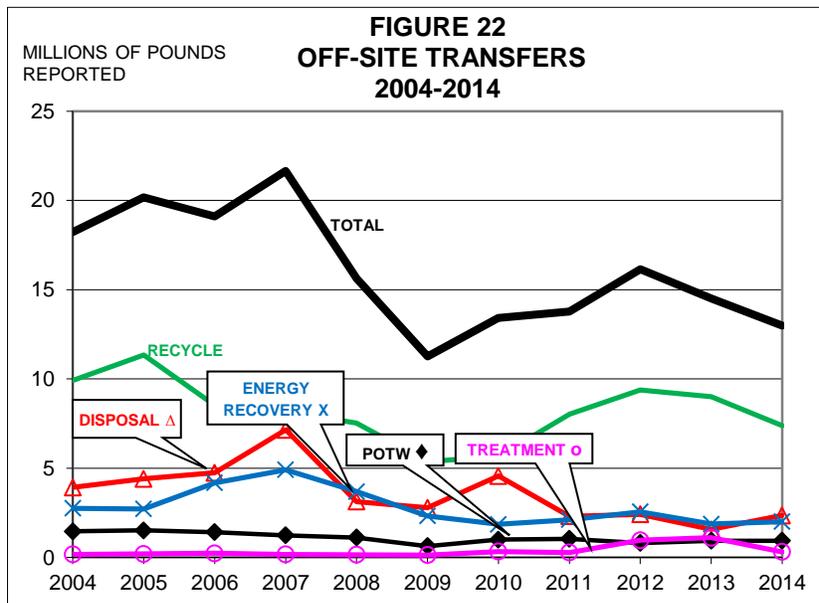
for the decrease in on-site releases is the economy, which effects production at the facilities and ultimately many of their on-site releases have declined in recent years and indirectly caused part of the reduction.

Off-Site Transfers, 2004-2014

An off-site transfer is a transfer of toxic chemicals as wastes to another facility that is physically separate from the reporting facility and may even be out-of-state. Chemicals are reported as transferred to an off-site facility when they are transported away from the reporting facility for the purposes of treatment at a publicly-owned treatment works (POTW, typically a waste water treatment plant), recycle, disposal, energy recovery, or non-POTW treatment facility. Although the off-site transfers may be of less immediate local concern than on-site releases, the transfers to POTWs, treatment, and disposal facilities still represent toxic chemicals as wastes that must be ultimately accounted for.

As noted on page 11 and seen in Table 15 on page 33, the amounts reported as transferred off-site are over three times greater than the amounts of on-site releases. Figures 22 and 23 show the trends in amounts of TRI chemicals in wastes transferred off-site for all facilities and chemicals reporting since 2004. To increase clarity, the lower portion (0 - 8 million pounds) of Figure 22 is expanded in Figure 23. For comparison, please look at the corresponding values in Table 15. Off-site transfers decreased 4.3% (584,000 pounds) in 2014, driven by decreases in amounts sent off-site for recycle, but partially offset by an increase in off-site treatment, disposal, and energy recovery amounts.

Table 17, on the following page, shows that the largest off-site transfer decrease was for zinc compounds sent off-site for recycling by Evraz Claymont Steel, followed by



the recycling of n,n-dimethylformamide by Rohm & Haas - B2 B3 B8. DuPont Edge Moor sent more manganese compounds offsite for disposal, Johnson Controls Distribution Center sent more lead compounds off site for recycling, and Noramco sent more toluene off site for energy recovery. Fifty-eight reports showed decreases, while 56 reported increases in off-site transfers for 2014.

TABLE 17
MAJOR CHANGES IN OFF-SITE TRANSFERS FOR 2014 FROM 2013

FACILITY	CHEMICAL	OFF-SITE METHOD	CHANGE (pounds)
Evraz Claymont Steel	Zinc Compounds	Recycle	-1,489,444
Rohm & Haas -B2 B3 B8	N,N-Dimethylformamide	Recycle	-328,145
Noramco	Toluene	Energy Recovery	+317,517
Johnson Controls Distrib.	Lead Compounds	Recycle	+377,632
DuPont Edge Moor	Manganese Compounds	Disposal	+882,381

On-Site Waste Management, 2004-2014

At some facilities, wastes are managed on-site instead of being sent off-site for processing or disposal. On-site waste management (recycle, recovered for energy, or treated at the facility) is the processing of chemicals in wastes that do not leave the site of the reporting facility. These activities generally represent a lower risk to the environment, as the materials are typically destroyed, although a small fraction escapes treatment and these amounts are reported under on-site releases.

Although these amounts represent a loss of raw materials and/or finished product to the facility as waste, they are not as much of a threat to the environment as the on-site release categories since these amounts are treated or recycled and not disposed of or released to the on-site environment. There is, of course, the risk that these chemicals may be accidentally released on-site to the environment during the waste management process. Also, most waste management operations are not 100% efficient, so a portion of the waste being treated in these operations will be released on-site and must be accounted for in the on-site releases reported by the facility.

Figure 24 below shows the trends for the three on-site waste management activities since 2004. Overall, on-site waste management amounts increased 23.6% (95,048,534 pounds) in 2014 compared to 2013. The on-site management of hydrogen sulfide accounted for 87% (433,593,974 pounds) of all on-site waste management activities, with the Delaware City Refinery treating the largest amount at 433,409,006 pounds.

The Delaware City Refinery is the only facility in the state that reports on-site energy recovery as part of its air pollution control activities. On-site energy recovery was up 1.7% (271,068 pounds) compared to 2013, with the refinery reporting ammonia as having the largest increase in energy recovery compared to 2013.

Changes greater than one million pounds reported in on-site waste management for 2014 are:

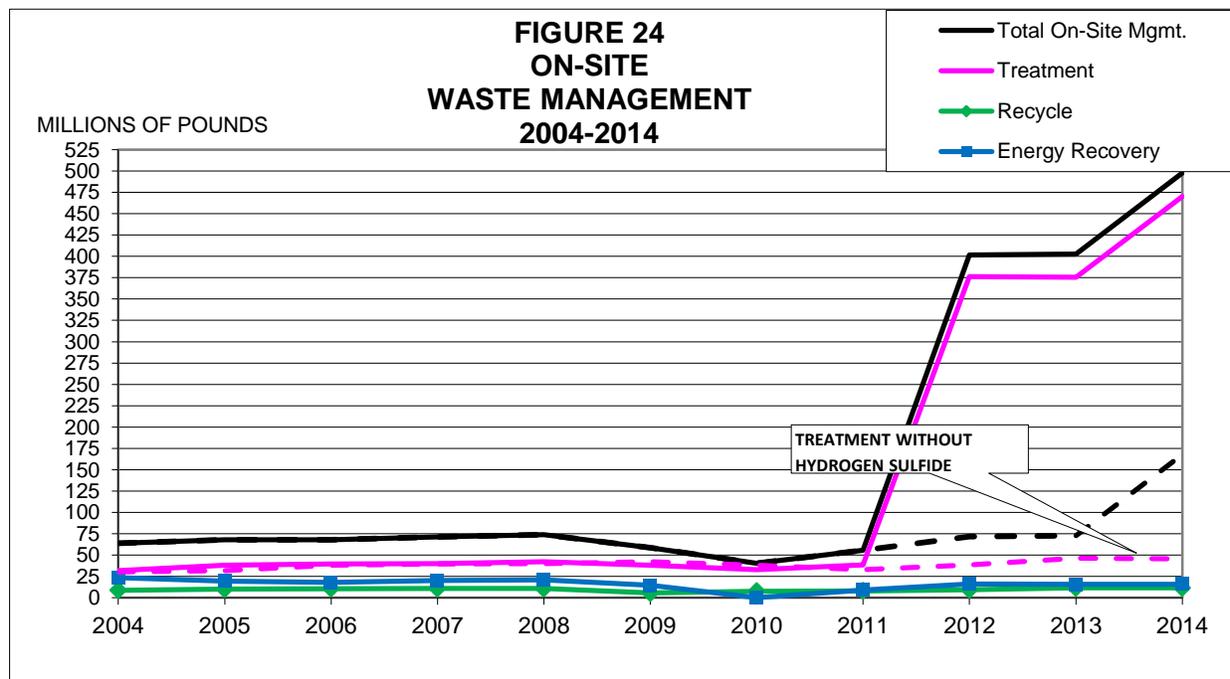


TABLE 18

MAJOR CHANGES IN ON-SITE WASTE MANAGEMENT FOR 2014 FROM 2013

FACILITY	CHEMICAL	ON-SITE WASTE MANAGEMENT METHOD	AMOUNT OF CHANGE (pounds)
DuPont Edge Moor	Hydrochloric Acid	Treatment	-4,391,541
DuPont Edge Moor	Chlorine	Treatment	+1,012,549
Delaware City Refinery	Carbon Disulfide	Treatment	+1,306,993
Delaware City Refinery	Carbonyl Sulfide	Treatment	+1,457,045
Delaware City Refinery	Hydrogen Sulfide	Treatment	+97,193,665

These changes were balanced by smaller increases and decreases from other reports. Thirty-three reports showed an increase in a waste management amount, while 36 reports showed a decrease for 2014. Total pounds for on-site waste management, excluding the addition of hydrogen sulfide, have increased by only 167,000 pounds, or 0.3%, over the last 10 years or since 2004. The on-site waste management amount totals are in Table 15 on page 33, and Figure 6 on page 12 shows the relative amounts.

Pollution Prevention/Reduction Programs in Delaware

Data for TRI reportable chemicals and other chemicals is becoming increasingly more available to the public. This data availability has focused public attention and awareness on the existence and quantity of these chemicals and on their management and possible reduction. Although EPCRA does not require a facility to reduce releases of chemicals reportable under its programs, many companies and facilities are aware of the public availability of the data in this and other EPCRA reports and have implemented programs to reduce or eliminate releases of these chemicals. These programs may take the form of efficiency improvements, reuse, recycle, energy and material recovery, or material substitutions. The benefits of these programs are reduced raw material and waste disposal costs and reduced risks associated with the toxic chemicals. Also, these reductions demonstrate corporate responsibility to the facility's neighbors and improve the corporate image with the public.

There are numerous programs within DNREC that impact the management of TRI chemicals through the issuance of permits or through other regulatory and non-regulatory activities. Most releases reported under TRI are also regulated through air emission, water discharge, and/or land disposal permits. Potential sources of toxics undergo technical reviews through which potential threats to the environment and to human health are reviewed and identified prior to issuance of a permit. For example, the Engineering and Compliance Branch in the Division of Air Quality enforces a provision in the Clean Air Act Amendments of 1990 that targets the control of hazardous air pollutants (HAPs). Nearly all HAPs are also reportable TRI chemicals. In addition, the Engineering and Compliance staff monitors TRI data to assess whether a facility complies with its air permits for TRI chemicals. Another example is the work performed by the Accidental Release Prevention (ARP) program. The ARP staff uses the TRI data to detect deficiencies at a facility that might result in an increased risk of an accidental release.

DNREC's Division of Air Quality has monitored ambient air quality at locations around the State. For more information, please refer to the [Delaware Air Quality Report](#) paragraph in the ***For Further Information*** section on page 44 of this report.

In 2006, Delaware promulgated 7 DE Admin Code 1146, Electric Generating Unit (EGU) Multi-Pollutant Regulation, to establish sulfur dioxide (SO₂), nitrogen oxides (NO_x), and mercury (Hg) air emissions limitations for coal-fired and residual oil-fired EGUs located in Delaware. Within 7 DE Admin Code two phases of emissions limitations were established, with the first phase that became effective in 2009, and a more restrictive second phase of emissions limitations that became effective in January of 2013. Significant reductions in NO_x, SO₂ and Hg emissions have been achieved by the Delaware EGUs subject to Delaware 7 DE Admin Code 1146, and full compliance with the regulation's more restrictive second phase emissions limitations for 2013 and related consent decrees have been achieved.

The reduction in NO_x, SO₂, and mercury emissions is:

1. Reducing the impact of those emissions on public health;
2. Aiding in Delaware's attainment of the State and National Ambient Air Quality Standard (NAAQS) for ground level ozone and fine particulate matter;
3. Helping to address local scale fine particulate and mercury problems attributable to coal and residual oil-fired electric generating units;
4. Improving visibility and helping to satisfy Delaware's EGU-related haze obligations.

In May 2011, the EPA proposed its “National Emissions Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance (<http://www.epa.gov/ttn/atw/utility/fr16fe12.pdf> update for 2011) for Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units”. The EPA finalized these standards effective April 16, 2012 for new or reconstructed units and effective April 15, 2015 for existing units. The rule establishes emissions standards intended to:

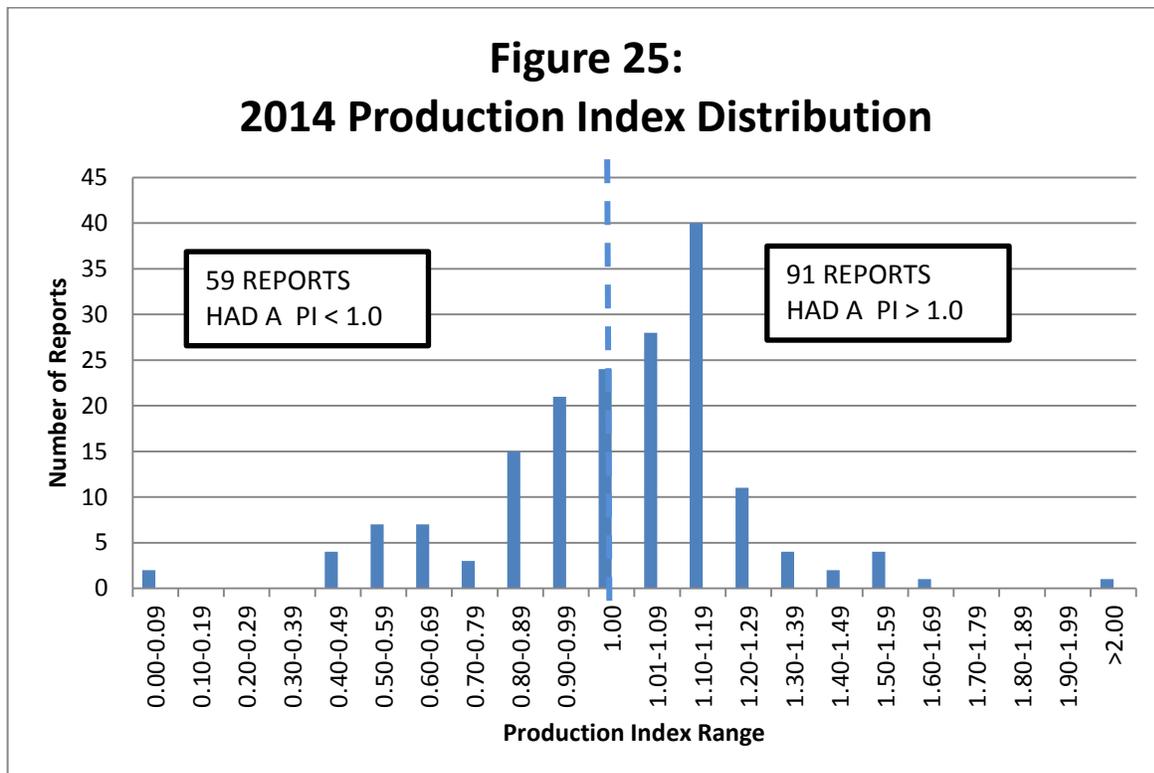
1. Reduce the emissions of hazardous air pollutant (HAP) metals such as mercury (Hg), arsenic (As), nickel (Ni), cadmium (Cd), chromium (Cr), lead (Pb) and selenium (Se).
2. Reduce the emissions of acid gases including hydrogen chloride (HCl) and hydrogen fluoride (HF).
3. Reduce the emissions of particulate matter.

Subsequent to publishing the final rule “National Emissions Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units”, EPA received petitions for reconsideration of the rule that may affect the new source standards. The latest updates of the air toxics standards for utilities can be found at: <http://www.epa.gov/ttnatw01/utility/utilitypg.html>.

TRI and the Economy

Facilities report a Production Index (PI) for each chemical. Along with TRI release and waste management data, this provides one way to estimate the impact of the economy, because the PI is the amount of production or activity directly associated with the demand for the chemical being reported. Some facilities, such as the power plants, can report the same PI for almost all of their chemicals, as they are directly related to the production of power. Other facilities, such as the ones in chemical manufacturing, report different PIs for different chemicals, as they are related more to the manufacture, process, or otherwise use of a specific chemical or line of chemicals. For some facilities, the determination of a PI is not precise, and therefore the PI may not be an exact indicator of production or chemical activity.

PI is reported as a number, representing the ratio of how production increased or decreased compared to the previous year. For example, a facility reporting an increase of 10% would report the PI as 1.10, while a facility reporting a decrease of 10%, would report the production as 90% of the previous year or a PI of 0.90. A facility having the same production level as the previous year would report the PI as 1.0. Figure 27 below, shows the distribution range of PIs reported. For 2014, of the 174 reports with PIs, 91 reported increases in production and 59 reported decreases. The remaining 24 reports had a 2014 production level equal to the previous year. The average PI reported was 1.05 or a 3% increase compared to 2013's production level.



FOR FURTHER INFORMATION

Access to the TRI Files - DNREC is responsible for collecting, processing, and distributing information submitted by Delaware facilities under the TRI program. This 2014 TRI report may be viewed at: <http://www.dnrec.delaware.gov/SERC/Pages/Reports.aspx>. TRI Facility Profiles for each reporting facility in Delaware are also available at the same location. A searchable database for TRI and other EPCRA programs is located at: <http://www.dnrec.delaware.gov/SERC/Information/Pages/DataSearch.aspx>.

The reports submitted by facilities are available for review through the Freedom of Information Act (FIOA) process from DNREC's EPCRA Reporting Program located at 89 Kings Highway in Dover. Custom reports can also be generated from the database. For information on placing a request, call the TRI Coordinator at (302) 739-9405 during business hours. An on-line FOIA application is also available at: <http://www.dnrec.delaware.gov/Info/Pages/FOIA.aspx>

Chemical Data Fact Sheets - A two-page fact sheet is available for most TRI chemicals reported in Delaware and contains information on chemical characteristics, health hazards, and ecological effects. The two-page fact sheets (ToxFAQ's) are available upon request from DNREC's TRI program or available through the Agency for Toxic Substances and Disease Registry (ATSDR) at: <http://www.atsdr.cdc.gov/toxfaqs/index.asp> or from the New Jersey Department of Health at: <http://web.doh.state.nj.us/rtkhsfs/indexFs.aspx>

EPA's TRI Home Page - The TRI home page provides information on the many facets of the TRI program at the EPA, including an Executive Summary, Q&A's, a link now to the preliminary 2014 national TRI data and early in 2016 year to the complete 2014 data, a current list of reportable chemicals, state and federal program contacts, and various guidance documents available for downloading. This website has many links to other EPA and non-EPA sites associated with TRI: www.epa.gov/tri/.

TRI Reporting Forms – Reporting instructions, reporting guidance, and examples of the traditional paper reporting forms are at <http://www2.epa.gov/toxics-release-inventory-tri-program/tri-reporting-forms-and-instructions>.

Toxics Release Inventory National Analysis - The EPA's annual TRI report. It covers national information and provides a good perspective on how Delaware compares to other states: <http://www.epa.gov/toxics-release-inventory-tri-program/2013-tri-national-analysis-introduction> . The 2014 edition of this report will be available in early 2016. It can also be obtained by calling the Federal EPCRA Information Hotline at 1-800-424-9346. Other searchable database programs such as Envirofacts, TRI.net, and TRI-CHIP are EPA-developed programs that provide public access to multiple environmental databases, including TRI. Links are available at <http://www2.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools> for data about hazardous waste, water permits, drinking water, Superfund sites, air, water, toxics, and more.

Chemical Reporting Rule – The EPA has issued the final Chemical Data Reporting (CDR) Rule. The purpose of this program is to collect information from manufacturers and importers of chemical substances and to make that information available for use by EPA. The rule was



enhanced for 2012 reporting. More information can be found at:

<http://www.epa.gov/oppt/cdr/index.html>

Delaware Division of Public Health Cancer Rates and Causes - This site provides data and answers to many cancer-related questions: <http://www.state.de.us/dhss/dph/dpc/cancer.html>.

Right-to-Know Network (RTK NET) - Searchable nationwide TRI data is available through RTK NET. RTK NET was established by two non-profit organizations to provide access to TRI and chemical data, link TRI with other environmental data, and exchange information among public interest groups: www.rtknet.org.

The Office of Pollution Prevention & Toxics - (OPPTS) is a part of the EPA that:

- Promotes pollution prevention as the guiding principle for controlling industrial pollution;
- Promotes safer chemicals through a combination of regulatory and voluntary efforts;
- Promotes risk reduction so as to minimize exposure to existing substances such as lead, asbestos, dioxin, and polychlorinated biphenyls; and,
- Promotes public understanding of risks by providing understandable, accessible and complete information on chemical risks to the broadest audience possible.

OPPTS is at: <http://www.epa.gov/oppt/index.htm>

International "TRI". The United States Toxics Release Inventory (TRI), the oldest and most comprehensive Pollutant Release and Transfer Register (PRTR) system in the world, is one of several similar programs established, or being established, by countries around the world. Industrial facilities in these countries are required to report their emissions and other waste management of toxic chemicals to databases in their respective countries. These databases are designed to track the quantities of chemicals that are released to the air, land or water, or transferred to another site for recycle, treatment or disposal. The term used internationally for these TRI-like systems is Pollutant Release and Transfer Register (PRTR). . The web site for these PRTR programs is <http://www.prtr.net/>. EPA also has a web site for PRTR, and it is <http://www2.epa.gov/toxics-release-inventory-tri-program/tri-around-world>. There are now over 50 countries participating in PRTR programs, and links to several international environmental agencies and programs, with more being developed each year.

Delaware Air Quality Report - The annual air quality report is prepared by the Air Surveillance Branch in the Air Quality Management Section of DNREC. This report presents data gathered from a statewide network of air monitoring stations, and includes analyses, trends, and other information regarding Delaware's ambient air quality. For more information, please call (302) 323-4542. This report is available on-line at:

<http://www.dnrec.delaware.gov/Air/Pages/DAQ-Annual-Reports.aspx> and air toxics information is at: <http://www.dnrec.delaware.gov/dwhs/AQM/Pages/DATAS1.aspx>.

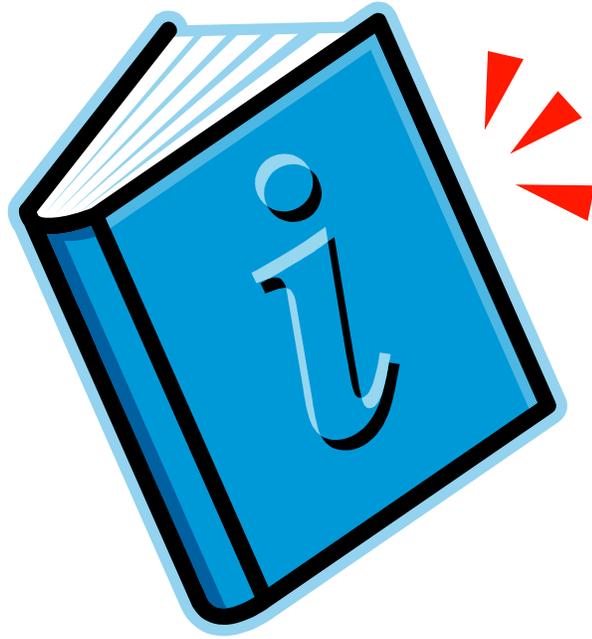
Delaware's Department of Natural Resources and Environmental Control has a variety of environmental information, including this report and other publications and reports, which are available at: <http://www.dnrec.delaware.gov/info/pages/ELibrary.aspx>. Environmental Databases are available at: <http://www.dnrec.delaware.gov/Info/Pages/GISData.aspx>. Notifications of releases in Delaware can be found at: [Delaware Environmental Release Notification System \(DERNS\)](#).



Other Delaware EPCRA Information - In addition to TRI, there are other provisions of the Emergency Planning and Community Right to Know Act (EPCRA), which provide information to the public as well as to local emergency planning and response organizations. Delaware has its own EPCRA statute, which established these provisions under State law. For additional information, visit the Delaware EPCRA website and Public Information tab at: <http://www.serc.delaware.gov/epcra.shtml>.

Questions or comments regarding the TRI program are welcome. Please direct questions, comments, or requests to:

Debra Nielsen
TRI Coordinator
EPCRA Reporting Program
Emergency Prevention and Response Section
DNREC Division of Waste and Hazardous Substances
89 Kings Highway
Dover, DE 19901
Tel. (302) 739-9405
E-mail: debra.nielsen@state.de.us



APPENDICES

2014





APPENDIX A

WHAT IS COMMUNITY RIGHT-TO-KNOW?

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

A dramatic and fatal accident involving the release of a large quantity of methyl isocyanate gas occurred in Bhopal, India on December 3, 1984. As a result of this release and similar, although less tragic, accidents that occurred in the United States, Congress enacted the Emergency Planning and Community Right to Know Act (EPCRA), as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986. EPCRA requires certain facilities to report information about hazardous chemicals and substances at their facilities to Federal, state, and local authorities. The objective is to improve the ability of the facility and of local emergency response agencies to plan for and respond to chemical emergencies, and to give citizens information about chemicals present in their communities. Presidents have also issued Executive Orders to Federal agencies, which mandate their compliance with certain EPCRA requirements. In 1991, Delaware established its own EPCRA legislation that enhanced the Federal requirements.

EMERGENCY PLANNING

Each state was required to establish a State Emergency Response Commission (SERC) to oversee planning efforts. The SERC must appoint Local Emergency Planning Committees (LEPC), which in turn develop emergency response plans for their respective districts. In Delaware, the SERC is chaired by the Secretary of the Department of Public Safety. Emergency planning districts have been established in each county and for the City of Wilmington. Facilities having specifically identified Extremely Hazardous Substances above established threshold quantities are required to notify their LEPC. These facilities are the primary focus of planning activities.

EMERGENCY RELEASE NOTIFICATION

In the event of an accidental chemical release above an established amount, a facility is required to provide immediate notification of the release. A follow up written report is also required to provide details about the sequence of events, the actual response actions, and to identify any known or anticipated health risks associated with the release. The public may receive notification through the Environmental Release Notification System.

In response to Senate Bill 33, which became law in July 2001, the Department of Natural Resources and Environmental Control (DNREC) developed a system to allow Delawareans to learn promptly of releases or discharges of contaminants or pollutants that meet or exceed certain thresholds in their neighborhoods or throughout the state. When you register, you choose to be notified in one of three ways: By phone, by e-mail or by fax. You also can choose to be notified about releases from specific facilities or about all releases that occur in one or more zip codes throughout the state. Interested individuals may register for notification at: <http://www.dnrec.state.de.us/dnrec2000/notification/pub/>.

HAZARDOUS CHEMICAL REPORTING

Under U.S. Occupational Safety and Health Administration (OSHA) regulations, facilities are required to maintain a Material Safety Data Sheet (MSDS) for each chemical on site. Under EPCRA, facilities are required to submit a list of their MSDSs for hazardous chemicals on site above specific threshold amounts. This list must be updated as new chemicals are brought on site. In addition, facilities having such chemicals are required to file Hazardous Chemical Inventory Reports annually. These reports, also known as Tier II forms, can be filed on-line



APPENDIX A

WHAT IS COMMUNITY RIGHT-TO-KNOW?

using Tier II Manager™ and data is available immediately for use by the EPCRA Reporting Program and emergency planning and response agencies. The data provides information on the identity, hazards, amounts, and locations of reportable chemicals at the facility, as well as emergency contacts, and a site plan.

Fees are also collected based on the number and type of chemicals reported. The fees are primarily used to support operations of the LEPCs.

TOXICS RELEASE INVENTORY (TRI) REPORTING

Facilities covered under TRI are required to file annual reports contain on-site releases, off-site transfers, and on-site waste management activities related to their use of certain toxic chemicals. These reports can be filed electronically at the same time to EPA and DNREC using EPA's TRI-ME (TRI Made Easy) program. This data is compiled and made available to the public through this report and other means. For more information regarding TRI, please refer to the **Introduction** and **What is the Toxics Release Inventory?** sections contained in this report.

RISK MANAGEMENT PLANS

Additional information regarding hazardous chemicals is available to the public due to the requirements contained in Title I, Section 112(r) of the Federal Clean Air Act Amendments of 1990. Section 112(r) requires that facilities handling substances with catastrophic potential submit a Risk Management Plan (RMP) that contains an executive summary, registration, off-site consequence analysis (OCA), five-year accident history, and a summary of their prevention and emergency response programs. The OCA consists of a "worst case" release scenario and an "alternative" release scenario. The "worst case" scenario estimates the area and populations affected by a catastrophic release. The "worst case" scenario is a hypothetical, conservative modeling exercise. Emergency planners use the toxic "alternative" scenario as a more realistic modeling exercise.

The information contained in the RMP builds upon the right-to-know principles of EPCRA by making all of the information including the OCA and five-year accident history available to local communities, emergency planners, and other stakeholders. Concerned citizens or the media may ask facilities to explain the risk management programs that they use to prevent or minimize the consequence of a catastrophic release. EPA encourages this communication to reduce the risk. This is similar to the way public knowledge of chemical releases to the environment through the availability of TRI data has led reporting facilities to reduce their toxic releases. Because of security concerns, the RMP information is restricted. However, this information is available for Delaware facilities by contacting the Accidental Release Prevention Program (ARP) <http://www.awm.delaware.gov/EPR/Pages/AccidentalReleasePrevention.aspx> or by contacting the EPA Region 3 reading room at: <http://www.epa.gov/libraries/region3.html>.

In Delaware, the Extremely Hazardous Substances Risk Management Act first passed in 1988, and amended in 1998, adopted new federal guidelines that enhance the community right-to-know information. The Delaware Accidental Release Program (ARP) has been granted full authority by the US EPA to administer the program within DNREC, reviews the facility RMPs for accuracy and completeness and inspects facilities to ensure that appropriate accidental release prevention programs have been implemented. For more information on accidental release prevention in Delaware, please refer to the DNREC ARP website above.



APPENDIX B

FACILITY CONTACT INFORMATION

AEARO TECHNOLOGIES

650 DAWSON DR
NEWARK, DE 19713
TOM FLAHERTY
(302) 286-2415

AGILENT TECHNOLOGIES

538 FIRST STATE BLVD.
NEWPORT, DE 19804
RENEE LEWANDOWSKI
(302) 636-3668

AIR LIQUIDE - MEDAL

305 WATER ST
NEWPORT, DE 19804
STEVE POORMAN
(302) 225-2137

ALLEN HARIM FARMS - SEAFORD

20799 ALLEN ROAD
SEAFORD, DE 19973
JIM QUINTON
(410) 820-2100

ALLEN HARIM FOODS - HARBESON

18752 HARBESON ROAD
HARBESON, DE 19951
JIM QUINTON
(410) 820-2100

AMICK FARMS

10281 AMICK DRIVE
DELMAR, DE 19940
RICK MARTINSON
(302) 846-9511

BALTIMORE AIRCOIL

1162 HOLLY HILL RD
MILFORD, DE 19963
ANDY MCNELIA
(302) 422-3061

BASF NEWPORT

205 S JAMES ST
NEWPORT, DE 19804
MAUREEN PAUKERT
(973) 245-6077

COLOR WORKS

251 EDWARDS AVE
NEW CASTLE, DE 19720
SEAN O. HISTED
(302) 324-8411

CRODA

315 CHERRY LN
NEW CASTLE, DE 19720
ROBERT J. TOUHEY
(302) 429-5269

DELAWARE CITY REFINERY

4550 WRANGLE HILL RD
DELAWARE CITY, DE 19706
LISA LINDSEY
(302) 834-6033

DENTSPLY MAIN PLANT

38 W CLARKE AVE
MILFORD, DE 19963-0359
JESSE BAUTISTA
(302) 422-4511

DENTSPLY WEST PLANT

779 E MASTEN CIR
MILFORD, DE 19963-0359
JESSE BAUTISTA
(302) 422-4511

DOVER AFB

436 CES/CC 600 CHEVRON AVE
DOVER AFB, DE 19902
JENNIFER VALLEE
(302) 677-3370



APPENDIX B

FACILITY CONTACT INFORMATION

DUHADAWAY TOOL AND DIE SHOP

801 DAWSON DRIVE
NEWARK, DE 19713
JOHN O'DONNELL
(302) 366-0113

GRIFFITH ENERGY-CARL KING

1400 E LEBANON RD
DOVER, DE 19901
CHARLIE RAINES
(301) 322-6691

DUPONT EDGE MOOR

104 HAY RD
EDGEMOOR, DE 19809
ROBIN OLLIS STEMPLER
(304) 863-4513

HANDY TUBE

124 VEPCO BOULEVARD
CAMDEN, DE 19934
KEITH DUPONT
(302) 697-9521

DUPONT RED LION PLANT

766 GOVERNOR LEA RD
DELAWARE CITY, DE 19706
W. JAMES HARMAN
(302) 834-5901

HANESBRANDS

631 RIDGELY ST - SUITE #1
DOVER, DE 19904-2772
CHRISTOPHER FOX
(336) 519-7114

EDGE MOOR/HAY ROAD ENERGY CENTERS

200 HAY RD
WILMINGTON, DE 19809
NORMA DUNN
(713) 830-8833

HIRSH INDUSTRIES

1525 MCKEE RD
DOVER, DE 19904
KEN MURR
(302) 678-3454

FORMOSA PLASTICS

780 SCHOOLHOUSE RD
DELAWARE CITY, DE 19706-0320
KIMBERLY BENNETT
(302) 836-2256

HMA-HERITAGE CONCRETE - BEAR

1250 PORTER ROAD
BEAR, DE 19701
JOHN RICE
(717) 236-7023

FUJIFILM

233 CHERRY LN
NEW CASTLE, DE 19720
MAUREEN CONCORDIA
(302) 472-1257

HMA-HERITAGE CONCRETE - CHESWOLD

376 HOLLY OAK LANE
CHESWOLD, DE 19936
JOHN RICE
(717) 236-7023

GAC SEAFORD

25938 NANTICOKE ST
SEAFORD, DE 19973
MICHAEL THRASHER
(813) 248-2101

HMA-HERITAGE CONCRETE - HEALD STREET

1100 HEALD STREET
WILMINGTON, DE 19801
JOHN RICE
(717) 236-7023



APPENDIX B

FACILITY CONTACT INFORMATION

HONEYWELL

6100 PHILADELPHIA PIKE
CLAYMONT, DE 19703
RUSSELL W. DAVIS
(302) 791-6748

KUEHNE

1645 RIVER RD
DELAWARE CITY, DE 19706
ALAN ROGERS
(302) 834-4557

IKO

120 HAY RD
WILMINGTON, DE 19809
MICHAEL R. PETERSON
(302) 764-3100

MACDERMID

701 INDUSTRIAL DR
MIDDLETOWN, DE 19709-1085
KEN MCCULLOUGH
(302) 378-3100

INDIAN RIVER GENERATING STATION

29416 POWER PLANT RD
DAGSBORO, DE 19939
DAVID GAIER
(609) 524-4529

METAL MASTERS

100 INDUSTRIAL BLVD
CLAYTON, DE 19938
RICHARD J. MURPHY
(302) 653-3000

INTERVET

29160 INTERVET LN
MILLSBORO, DE 19966
TOM BASTIAN
(302) 934-4265

MOUNTAIRE FARMS - FRANKFORD

11 DAISEY ST
FRANKFORD, DE 19945
ROGER MARINO
(302) 934-3123

JOHNSON CONTROLS BATTERY PLANT

700 N BROAD ST
MIDDLETOWN, DE 19709
CORY HULSING
(302) 376-4052

MOUNTAIRE FARMS - SELBYVILLE

HOOSIER ST & RAILROAD AVE
SELBYVILLE, DE 19975
ROGER MARINO
(302) 934-3123

JOHNSON CONTROLS DISTRIBUTION CENTER

50 PATRIOT DR
MIDDLETOWN, DE 19709
TAMI KEMSKI
(302) 696-3209

MOUNTAIRE FARMS OF DELAWARE

29106 JOHN J WILLIAMS HWY
MILLSBORO, DE 19966
ROGER MARINO
(302) 934-3123

JUSTIN TANKS

21413 CEDAR CREEK AVE
GEORGETOWN, DE 19947-6306
EDWARD M. SHORT, PRESIDENT
(302) 856-3521

NORAMCO

500 SWEDES LANDING RD
WILMINGTON, DE 19801
JOHN DALY
(302) 888-4477



APPENDIX B

FACILITY CONTACT INFORMATION

ORIENT CORP

111 PARK AVE
SEAFORD, DE 19973
DAVE CURRY
(302) 628-1300

ROGERS CORP (formerly ARLON)

1100 GOVERNOR LEA RD
BEAR, DE 19701
TIMOTHY GAUTHIER
(860) 779-5598

PERDUE BRIDGEVILLE

16447 ADAMS RD
BRIDGEVILLE, DE 19933
JULIE DEYOUNG
(410) 543-3166

ROHM & HAAS B2, B3, B8

451 BELLEVUE RD
NEWARK, DE 19713
KELLY BLOCK
(302) 366-0500

PERDUE GEORGETOWN

20621 SAVANNAH RD
GEORGETOWN, DE 19947
JULIE DEYOUNG
(410) 543-3166

ROHM & HAAS B5, B6

351 BELLEVUE RD
NEWARK, DE 19713
KELLY BLOCK
(302) 366-0500

PERDUE MILFORD

255 N REHOBOTH BLVD
MILFORD, DE 19963
JULIE DEYOUNG
(410) 543-3166

ROHM & HAAS B7, B15

50 BELLEVUE RD
NEWARK, DE 19713
KELLY BLOCK
(302) 366-0500

PICTSWEET BRIDGEVILLE

18215 WESLEY CHURCH RD
BRIDGEVILLE, DE 19933
ALLEN WATTS
(731) 663-7600

SERVICE ENERGY DOVER

3799 N DUPONT HWY
DOVER, DE 19901
DON STEINER
(302) 734-7433

PPG INDUSTRIES

1886 LYNNBURY WOODS RD
DOVER, DE 19904
NEAL NICASTRO
(302) 678-9800

SPI PHARMA

40 CAPE HENLOPEN DR
LEWES, DE 19958-1196
JOHN CREIGHTON
(616) 283-8506

PRINCE MINERALS

301 PIGEON POINT RD
NEW CASTLE, DE 19720
MARY SIMPLER
(646) 747-4176

V&S DELAWARE GALVANIZING

511 CARROLL DRIVE
NEW CASTLE, DE 19720
IONUT ROIBU
(302) 322-1420



APPENDIX B

FACILITY CONTACT INFORMATION

VP RACING FUELS

16 BROOKHILL DR
NEWARK, DE 19702-1301
JIM KELLY
(302) 368-1500

APPENDIX C

2014 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND	TOTAL		
AEARO TECHNOLOGIES							
DIISOCYANATES	0	3	0	0	3	12,248	0
TOLUENE DIISOCYANATE (MIXED ISOMERS)	0	5	0	0	5	3,558	0
AEARO TECHNOLOGIES Total	0	8	0	0	8	15,806	0
AGILENT TECHNOLOGIES							
ACETONITRILE	0	71	0	0	71	17,271	0
METHANOL	0	1,334	0	0	1,334	38,777	0
TOLUENE	0	37	0	0	37	149,843	0
AGILENT TECHNOLOGIES Total	0	1,442	0	0	1,442	205,891	0
AIR LIQUIDE - MEDAL							
CYCLOHEXANE	0	954	0	0	954	19,720	0
METHANOL	0	25	0	0	25	83,791	2,878,874
N,N-DIMETHYLFORMAMIDE	0	31	0	0	31	23,920	0
N-HEXANE	0	25	0	0	25	0	2,394,992
N-METHYL-2-PYRROLIDONE	0	1,275	0	0	1,275	152,482	0
AIR LIQUIDE - MEDAL Total	0	2,310	0	0	2,310	279,913	5,273,866
ALLEN HARIM FARMS - SEAFORD							
MANGANESE COMPOUNDS	1	0	0	0	0	0	0
ZINC COMPOUNDS	1	0	0	0	0	0	0
ALLEN HARIM FARMS - SEAFORD Total	2	0	0	0	0	0	0
ALLEN HARIM FOODS - HARBESON							
NITRATE COMPOUNDS	1	0	0	0	0	0	0
ALLEN HARIM FOODS - HARBESON Total	1	0	0	0	0	0	0
AMICK FARMS							
COPPER COMPOUNDS	1	0	0	0	0	0	0
MANGANESE COMPOUNDS	1	0	0	0	0	0	0
ZINC COMPOUNDS	1	0	0	0	0	0	0
AMICK FARMS Total	3	0	0	0	0	0	0

APPENDIX C

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APPENDIX C

2014 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND				
BALTIMORE AIRCOIL								
CHROMIUM COMPOUNDS	0	5	0	0	5	212,501	0	
COBALT COMPOUNDS	0	0	0	0	0	26,100	0	
COPPER COMPOUNDS	0	0	0	0	0	37,203	0	
MANGANESE COMPOUNDS	0	5	0	0	5	105,317	0	
NICKEL COMPOUNDS	0	5	0	0	5	243,821	0	
BALTIMORE AIRCOIL Total	0	15	0	0	15	624,942	0	
BASF NEWPORT								
ANILINE	0	22	0	0	22	32,865	1,121	
BIPHENYL	0	90	0	0	90	251,859	2,321	
CYCLOHEXANE	0	50	0	0	50	34,770	3,452	
METHANOL	0	20,408	0	0	20,408	500,659	1,148,370	
NITRATE COMPOUNDS	0	0	0	0	0	27,671	0	
NITRIC ACID	0	0	0	0	0	0	28,117	
N-METHYL-2-PYRROLIDONE	0	0	0	0	0	46,143	11	
P-CHLOROANILINE	0	6	0	0	6	23,468	389	
XYLENE (MIXED ISOMERS)	0	931	0	0	931	542	4,333	
BASF NEWPORT Total	0	21,507	0	0	21,507	917,977	1,188,114	
COLOR WORKS PAINTING								
MANGANESE	0	0	0	0	0	997	0	
COLOR WORKS PAINTING Total	0	0	0	0	0	997	0	
CRODA								
CERTAIN GLYCOL ETHERS	0	3	0	0	3	3,152	0	
DIETHANOLAMINE	0	4	0	0	4	23	0	
ETHYLENE OXIDE	0	2,688	0	0	2,688	0	0	
NAPHTHALENE	0	2	0	0	2	420	0	
PROPYLENE OXIDE	0	582	0	0	582	0	0	
CRODA Total	0	3,280	0	0	3,280	3,595	0	

APPENDIX C

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2014 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND	TOTAL		
DELAWARE CITY REFINERY							
1,2,4-TRIMETHYLBENZENE	0	1,259	5	0	1,264	0	59,876
1,3-BUTADIENE	0	581	0	0	581	0	0
2,4-DIMETHYLPHENOL	0	0	173	0	173	0	242,243
AMMONIA	0	25,999	4,684	0	30,683	0	15,452,363
ANTHRACENE	0	10	5	0	15	0	0
ASBESTOS (FRIABLE)	0	0	0	0	0	166,240	0
BENZENE	0	7,213	11	0	7,224	84	410,041
BENZO(G,H,I)PERYLENE	0	0	5	0	5	0	473
CARBON DISULFIDE	0	1,229	0	0	1,229	0	4,193,136
CARBONYL SULFIDE	0	490	0	0	490	0	15,127,359
CREOSOTE	0	398	0	2,253	2,651	26,732	0
CRESOL (MIXED ISOMERS)	0	0	345	0	345	0	337,467
CUMENE	0	2,990	5	0	2,995	0	3,606
CYANIDE COMPOUNDS	0	0	152	0	152	0	15,051
CYCLOHEXANE	0	1,783	5	0	1,788	0	7,372
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0
ETHYLBENZENE	0	1,909	5	0	1,914	59	52,457
ETHYLENE	0	8,135	0	0	8,135	0	0
HYDROCHLORIC ACID	0	201	0	0	201	0	87,917
HYDROGEN CYANIDE	0	724	212	0	936	0	298,734
HYDROGEN SULFIDE	0	12,420	1	0	12,421	0	433,409,006
LEAD COMPOUNDS	0	104	3	0	107	41	0
MERCURY COMPOUNDS	0	56	2	0	58	1	0
METHANOL	0	5,148	5	0	5,153	0	37,706
MOLYBDENUM TRIOXIDE	0	15	0	0	15	0	0
NAPHTHALENE	0	2,164	0	0	2,164	0	11,526
N-HEXANE	0	20,071	5	0	20,076	0	167,130
NITRATE COMPOUNDS	0	0	2,742,685	0	2,742,685	0	0
PHENANTHRENE	0	1	5	0	6	0	41
PHENOL	0	151	173	0	324	0	315,303
POLYCYCLIC AROMATIC COMPOUNDS	0	240	4	0	244	0	389
PROPYLENE	0	6,529	0	0	6,529	0	0
STYRENE	0	11	5	0	16	0	1,211
SULFURIC ACID	0	289,749	0	0	289,749	0	0
TETRACHLOROETHYLENE	0	5	0	0	5	0	0
TOLUENE	0	12,310	5	0	12,315	63	224,834
XYLENE (MIXED ISOMERS)	0	5,125	5	0	5,130	303	220,049
DELAWARE CITY REFINERY Total	0	407,020	2,748,504	2,253	3,157,777	193,524	470,675,290

APPENDIX C

Source: DNREC 2014 TRI Database, October, 2015

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APPENDIX C

2014 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND	TOTAL		
DENTSPLY MAIN PLANT							
MERCURY	0	0	0	0	0	1,003	0
DENTSPLY MAIN PLANT Total	0	0	0	0	0	1,003	0
DENTSPLY WEST PLANT							
METHANOL	0	2,245	0	0	2,245	10,841	0
METHYL METHACRYLATE	0	1,424	0	0	1,424	74	0
TOLUENE	0	408	0	0	408	12,328	0
DENTSPLY WEST PLANT Total	0	4,077	0	0	4,077	23,243	0
DOVER AFB							
1,2,4-TRIMETHYLBENZENE	0	38	0	0	38	0	0
CUMENE	0	39	0	0	39	0	0
ETHYLBENZENE	0	40	0	0	40	0	0
NAPHTHALENE	0	43	0	0	43	0	0
XYLENE (MIXED ISOMERS)	0	42	0	0	42	0	0
DOVER AFB Total	0	202	0	0	202	0	0
DUHADAWAY TOOL & DIE SHOP							
CHROMIUM	0	0	0	0	0	12,446	0
NICKEL	0	0	0	0	0	11,349	0
DUHADAWAY TOOL & DIE SHOP Total	0	0	0	0	0	23,795	0

APPENDIX C

APPENDIX C

2014 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND	TOTAL		
DUPONT EDGE MOOR							
ARSENIC COMPOUNDS	0	0	61	0	61	172	0
BARIUM COMPOUNDS	0	2	3,291	0	3,292	7,375	0
CARBONYL SULFIDE	0	224,780	0	0	224,780	0	0
CHLORINE	0	2,237	0	0	2,237	0	1,982,489
CHROMIUM COMPOUNDS	0	1	36	0	37	142,883	0
COBALT COMPOUNDS	0	0	15	0	15	4,390	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0
HEXACHLOROBENZENE	0	0	0	0	0	12	0
HYDROCHLORIC ACID	0	3,583	0	0	3,583	0	6,635,842
LEAD COMPOUNDS	0	0	78	0	78	13,462	0
MANGANESE COMPOUNDS	0	1	8,942	0	8,943	1,641,568	0
MERCURY COMPOUNDS	0	1	0	0	1	1	0
NICKEL COMPOUNDS	0	1	1,080	0	1,081	13,321	0
OCTACHLOROSTYRENE	0	0	0	0	0	0	0
PENTACHLOROBENZENE	0	0	0	0	0	1	0
PHOSGENE	0	329	0	0	329	0	165,815
POLYCHLORINATED BIPHENYLS	0	0	0	0	0	2	0
POLYCYCLIC AROMATIC COMPOUNDS	0	70	0	615	684	0	0
TITANIUM TETRACHLORIDE	0	30	0	0	30	0	1,236,493
TOLUENE	0	85	0	0	85	94	0
VANADIUM COMPOUNDS	0	1	121	0	122	150,855	0
ZINC COMPOUNDS	0	11	130	0	140	29,716	0
DUPONT EDGE MOOR Total	0	231,131	13,754	615	245,499	2,003,854	10,020,639
DUPONT RED LION PLANT							
HYDRAZINE	0	0	0	0	0	0	0
HYDRAZINE SULFATE	0	0	0	0	0	0	0
HYDROGEN SULFIDE	0	148	0	0	148	0	0
SULFURIC ACID	0	6,824	0	0	6,824	0	0
DUPONT RED LION PLANT Total	0	6,972	0	0	6,972	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS							
AMMONIA	0	2,950	1	0	2,951	124	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0
MERCURY	0	19	0	0	19	0	0
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	1	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS Total	0	2,970	1	0	2,971	124	0

APPENDIX C

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APPENDIX C

2014 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND	TOTAL		
FORMOSA PLASTICS							
AMMONIA	0	4,157	0	0	4,157	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0
VINYL ACETATE	0	12,523	0	0	12,523	0	0
VINYL CHLORIDE	0	49,262	0	0	49,262	270	289,794
FORMOSA PLASTICS Total	0	65,942	0	0	65,942	270	289,794
FUJIFILM							
NITRATE COMPOUNDS	1	0	0	0	0	0	0
FUJIFILM Total	1	0	0	0	0	0	0
GAC SEAFORD							
1,2,4-TRIMETHYLBENZENE	1	0	0	0	0	0	0
GAC SEAFORD Total	1	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING							
1,2,4-TRIMETHYLBENZENE	1	0	0	0	0	0	0
NAPHTHALENE	1	0	0	0	0	0	0
XYLENE (MIXED ISOMERS)	1	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING Total	3	0	0	0	0	0	0
HANDYTUBE							
CHROMIUM	0	0	0	0	0	29,130	0
MANGANESE	0	0	0	0	0	2,945	0
NICKEL	0	0	0	0	0	31,544	0
TRICHLOROETHYLENE	0	6,331	0	0	6,331	9,100	0
HANDYTUBE Total	0	6,331	0	0	6,331	72,719	0
HANESBRANDS							
NITRATE COMPOUNDS	0	0	0	0	0	58,887	0
ZINC COMPOUNDS	0	0	0	0	0	556	0
HANESBRANDS Total	0	0	0	0	0	59,443	0
HIRSH INDUSTRIES							
CERTAIN GLYCOL ETHERS	0	7,062	0	0	7,062	0	0
HIRSH INDUSTRIES Total	0	7,062	0	0	7,062	0	0

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2014 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND	TOTAL		
HMA - HERITAGE CONCRETE BEAR							
LEAD	0	0	0	9	9	0	0
HMA - HERITAGE CONCRETE BEAR Total	0	0	0	9	9	0	0
HMA - HERITAGE CONCRETE CHESWOLD							
LEAD	0	0	0	9	9	0	0
HMA - HERITAGE CONCRETE CHESWOLD Total	0	0	0	9	9	0	0
HMA - HERITAGE CONCRETE HEALD STREET							
LEAD	0	0	0	19	19	0	0
HMA - HERITAGE CONCRETE HEALD STREET Total	0	0	0	19	19	0	0
HONEYWELL							
BORON TRIFLUORIDE	0	435	0	0	435	0	131,153
HYDROGEN FLUORIDE	0	544	0	0	544	10	98
METHANOL	0	4	0	0	4	2,560	60
POLYCYCLIC AROMATIC COMPOUNDS	0	398	0	0	398	0	0
HONEYWELL Total	0	1,381	0	0	1,381	2,570	131,311
IKO							
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	141	545
IKO Total	0	0	0	0	0	141	545
INDIAN RIVER GENERATING STATION							
AMMONIA	0	1,442	0	0	1,442	0	201,184
BARIUM COMPOUNDS	0	77	0	13,662	13,739	2	0
HYDROCHLORIC ACID	0	732	0	0	732	0	562,719
HYDROGEN FLUORIDE	0	783	0	0	783	0	58,079
LEAD COMPOUNDS	0	26	0	1,061	1,087	0	0
MERCURY COMPOUNDS	0	2	0	81	83	0	0
SULFURIC ACID	0	1,872	0	0	1,872	0	1,014,437
INDIAN RIVER GENERATING STATION Total	0	4,934	0	14,804	19,738	2	1,836,419
INTERVET							
MERCURY COMPOUNDS	0	0	0	0	0	1	0
INTERVET Total	0	0	0	0	0	1	0

APPENDIX C

Source: DNREC 2014 TRI Database, October, 2015

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All Amounts Are in Pounds

APPENDIX C

2014 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND	TOTAL		
JOHNSON CONTROLS BATTERY PLANT							
ANTIMONY COMPOUNDS	0	0	0	0	0	13,022	0
LEAD COMPOUNDS	0	120	9	0	129	3,340,955	0
JOHNSON CONTROLS BATTERY PLANT Total	0	120	9	0	129	3,353,978	0
JOHNSON CONTROLS DISTRIBUTION CENTER							
LEAD COMPOUNDS	0	0	0	0	0	1,671,199	0
JOHNSON CONTROLS DISTRIBUTION CENTER Total	0	0	0	0	0	1,671,199	0
JUSTIN TANKS							
STYRENE	0	9,802	0	202	10,004	202	22,680
JUSTIN TANKS Total	0	9,802	0	202	10,004	202	22,680
KUEHNE							
CHLORINE	0	517	0	0	517	0	0
KUEHNE Total	0	517	0	0	517	0	0
MACDERMID							
DIISOCYANATES	1	0	0	0	0	0	0
TOLUENE DIISOCYANATE (MIXED ISOMERS)	1	0	0	0	0	0	0
MACDERMID Total	2	0	0	0	0	0	0
METAL MASTERS							
CHROMIUM	0	1	0	0	1	184,894	0
NICKEL	0	1	0	0	1	58,972	0
METAL MASTERS Total	0	1	0	0	1	243,866	0

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APPENDIX C

2014 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND	TOTAL		
MOUNTAIRE FARMS - FRANKFORD							
COPPER COMPOUNDS	1	0	0	0	0	0	0
MANGANESE COMPOUNDS	1	0	0	0	0	0	0
ZINC COMPOUNDS	1	0	0	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD Total	3	0	0	0	0	0	0
MOUNTAIRE FARMS - SELBYVILLE							
PERACETIC ACID	0	246	0	0	246	0	64,234
MOUNTAIRE FARMS - SELBYVILLE Total	0	246	0	0	246	0	64,234
MOUNTAIRE FARMS OF DELAWARE							
COPPER COMPOUNDS	1	0	0	0	0	0	0
HYDROGEN SULFIDE	0	9,034	0	0	9,034	0	102,668
MANGANESE COMPOUNDS	1	0	0	0	0	0	0
PERACETIC ACID	0	228	0	0	228	0	74,753
ZINC COMPOUNDS	1	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE Total	3	9,262	0	0	9,262	0	177,421
NORAMCO							
DICHLOROMETHANE	0	428	0	0	428	58,508	58,508
ETHYLENE GLYCOL	0	10	0	0	10	3,600	0
FORMIC ACID	0	11	0	0	11	25,320	0
METHANOL	0	106	0	0	106	36,220	36,220
N-BUTYL ALCOHOL	0	31	0	0	31	708,266	708,266
PERACETIC ACID	0	10	0	0	10	35,948	0
TOLUENE	0	104	0	0	104	869,110	869,110
NORAMCO Total	0	700	0	0	700	1,736,972	1,672,104
ORIENT CORP							
ANILINE	0	75	0	0	75	1,872	1,760,000
CHROMIUM COMPOUNDS	0	0	0	0	0	0	0
NITROBENZENE	0	2	0	0	2	0	0
ZINC COMPOUNDS	0	0	0	0	0	0	0
ORIENT CORP Total	0	77	0	0	77	1,872	1,760,000

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2014 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND	TOTAL		
PERDUE BRIDGEVILLE							
COPPER COMPOUNDS	1	0	0	0	0	0	0
MANGANESE COMPOUNDS	1	0	0	0	0	0	0
ZINC COMPOUNDS	1	0	0	0	0	0	0
PERDUE BRIDGEVILLE Total	3	0	0	0	0	0	0
PERDUE GEORGETOWN							
HYDROGEN SULFIDE	0	7,330	0	0	7,330	0	82,300
NITRATE COMPOUNDS	0	0	168,674	0	168,674	0	0
PERDUE GEORGETOWN Total	0	7,330	168,674	0	176,004	0	82,300
PERDUE MILFORD							
PERACETIC ACID	0	0	0	0	0	13	26,184
PERDUE MILFORD Total	0	0	0	0	0	13	26,184
PICTSWEET BRIDGEVILLE							
AMMONIA	0	200	0	0	200	0	0
PICTSWEET BRIDGEVILLE Total	0	200	0	0	200	0	0
PPG INDUSTRIES							
CERTAIN GLYCOL ETHERS	0	0	0	0	0	1,040	0
ETHYLENE GLYCOL	0	0	0	0	0	5,261	0
ZINC COMPOUNDS	0	35	0	0	35	5,837	0
PPG INDUSTRIES Total	0	35	0	0	35	12,138	0
PRINCE MINERALS							
BARIUM COMPOUNDS	1	0	0	0	0	0	0
MANGANESE COMPOUNDS	0	243	0	0	243	0	0
NICKEL COMPOUNDS	1	0	0	0	0	0	0
PRINCE MINERALS Total	2	243	0	0	243	0	0
ROGERS CORP (formerly ARLON)							
COPPER	0	10	0	0	10	1,510	0
ETHYLBENZENE	0	500	0	0	500	750	29,000
XYLENE (MIXED ISOMERS)	0	1,960	0	0	1,960	3,300	116,000
ROGERS CORP (formerly ARLON) Total	0	2,470	0	0	2,470	5,560	145,000

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2014 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND	TOTAL		
ROHM & HAAS B2 B3 B8							
DIISOCYANATES	0	0	0	0	0	6,881	0
N,N-DIMETHYLFORMAMIDE	0	4,150	0	0	4,150	1,249,584	4,175,261
ROHM & HAAS B2 B3 B8 Total	0	4,150	0	0	4,150	1,256,465	4,175,261
ROHM & HAAS B5 B6							
4,4'-METHYLENEBIS(2-CHLOROANILINE)	0	0	0	0	0	2,206	0
DIISOCYANATES	0	2	0	0	2	17,221	0
N-METHYL-2-PYRROLIDONE	0	2,131	0	0	2,131	61,095	0
ROHM & HAAS B5 B6 Total	0	2,133	0	0	2,133	80,522	0
ROHM & HAAS B7 B15							
DIISOCYANATES	0	2	0	0	2	11,878	0
N-METHYL-2-PYRROLIDONE	0	766	0	0	766	9,958	0
ROHM & HAAS B7 B15 Total	0	768	0	0	768	21,836	0
SERVICE ENERGY DOVER							
1,2,4-TRIMETHYLBENZENE	1	0	0	0	0	0	0
TOLUENE	1	0	0	0	0	0	0
SERVICE ENERGY DOVER Total	2	0	0	0	0	0	0
SPI PHARMA							
CHLORINE	1	0	0	0	0	0	0
NITRIC ACID	1	0	0	0	0	0	0
SPI PHARMA Total	2	0	0	0	0	0	0
V&S DELAWARE GALVANIZING							
LEAD	0	8	7	0	15	4,360	2,025
ZINC COMPOUNDS	0	481	118	0	599	175,064	237,553
V&S DELAWARE GALVANIZING Total	0	489	125	0	614	179,425	239,578
VP RACING FUELS							
LEAD COMPOUNDS	0	1	0	0	1	1	0
METHANOL	1	0	0	0	0	0	0
TOLUENE	1	0	0	0	0	0	0
XYLENE (MIXED ISOMERS)	1	0	0	0	0	0	0
VP RACING FUELS Total	3	1	0	0	1	1	0
STATE TOTALS	31	805,127	2,931,067	17,910	3,754,104	12,993,859	497,780,740

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APPENDIX D

2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY		DISPOSAL	TOTAL	RECYCLE	ENERGY		TOTAL
			RECOVERY	TREATMENT				RECOVERY	TREATMENT	
AEARO TECHNOLOGIES										
DIISOCYANATES	0	0	0	12,248	0	12,248	0	0	0	0
TOLUENE DIISOCYANATE (MIXED ISOMERS)	0	0	0	3,558	0	3,558	0	0	0	0
AEARO TECHNOLOGIES Total	0	0	0	15,806	0	15,806	0	0	0	0
AGILENT TECHNOLOGIES										
ACETONITRILE	0	0	17,271	0	0	17,271	0	0	0	0
METHANOL	0	0	38,665	112	0	38,777	0	0	0	0
TOLUENE	0	0	149,733	110	0	149,843	0	0	0	0
AGILENT TECHNOLOGIES Total	0	0	205,669	222	0	205,891	0	0	0	0
AIR LIQUIDE - MEDAL										
CYCLOHEXANE	0	0	19,720	0	0	19,720	0	0	0	0
METHANOL	0	0	0	83,791	0	83,791	2,878,874	0	0	2,878,874
N,N-DIMETHYLFORMAMIDE	18,000	0	5,920	0	0	23,920	0	0	0	0
N-HEXANE	0	0	0	0	0	0	2,394,992	0	0	2,394,992
N-METHYL-2-PYRROLIDONE	136,802	0	15,680	0	0	152,482	0	0	0	0
AIR LIQUIDE - MEDAL Total	154,802	0	41,320	83,791	0	279,913	5,273,866	0	0	5,273,866
ALLEN HARIM FARMS - SEAFORD										
MANGANESE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
ZINC COMPOUNDS	0	0	0	0	0	0	0	0	0	0
ALLEN HARIM FARMS - SEAFORD Total	0	0	0	0	0	0	0	0	0	0
ALLEN HARIM FOODS - HARBESON										
NITRATE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
ALLEN HARIM FOODS - HARBESON Total	0	0	0	0	0	0	0	0	0	0
AMICK FARMS										
COPPER COMPOUNDS	0	0	0	0	0	0	0	0	0	0
MANGANESE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
ZINC COMPOUNDS	0	0	0	0	0	0	0	0	0	0
AMICK FARMS Total	0	0	0	0	0	0	0	0	0	0

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY		DISPOSAL	TOTAL	RECYCLE	ENERGY		TOTAL
			RECOVERY	TREATMENT				RECOVERY	TREATMENT	
BALTIMORE AIRCOIL										
COBALT COMPOUNDS	0	26,100	0	0	0	26,100	0	0	0	0
COPPER COMPOUNDS	0	37,203	0	0	0	37,203	0	0	0	0
MANGANESE COMPOUNDS	0	105,317	0	0	0	105,317	0	0	0	0
NICKEL COMPOUNDS	0	243,821	0	0	0	243,821	0	0	0	0
CHROMIUM COMPOUNDS2	0	212,501	0	0	0	212,501	0	0	0	0
BALTIMORE AIRCOIL Total	0	624,942	0	0	0	624,942	0	0	0	0
BASF NEWPORT										
ANILINE	27,295	0	3,021	2,549	0	32,865	0	0	1,121	1,121
BIPHENYL	17,076	0	91,223	143,560	0	251,859	0	0	2,321	2,321
CYCLOHEXANE	0	34,770	0	0	0	34,770	0	0	3,452	3,452
METHANOL	358,135	139,043	3,481	0	0	500,659	324,750	0	823,620	1,148,370
NITRATE COMPOUNDS	27,671	0	0	0	0	27,671	0	0	0	0
NITRIC ACID	0	0	0	0	0	0	0	0	28,117	28,117
N-METHYL-2-PYRROLIDONE	14,692	31,451	0	0	0	46,143	0	0	11	11
P-CHLOROANILINE	2,987	0	9,286	11,195	0	23,468	0	0	389	389
XYLENE (MIXED ISOMERS)	214	0	328	0	0	542	0	0	4,333	4,333
BASF NEWPORT Total	448,070	205,264	107,339	157,304	0	917,977	324,750	0	863,364	1,188,114
COLOR WORKS PAINTING										
MANGANESE	0	997	0	0	0	997	0	0	0	0
COLOR WORKS PAINTING Total	0	997	0	0	0	997	0	0	0	0
CRODA										
CERTAIN GLYCOL ETHERS	3,152	0	0	0	0	3,152	0	0	0	0
DIETHANOLAMINE	23	0	0	0	0	23	0	0	0	0
ETHYLENE OXIDE	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE	0	0	0	420	0	420	0	0	0	0
PROPYLENE OXIDE	0	0	0	0	0	0	0	0	0	0
CRODA Total	3,175	0	0	420	0	3,595	0	0	0	0

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY		DISPOSAL	TOTAL	RECYCLE	ENERGY		TOTAL
			RECOVERY	TREATMENT				RECOVERY	TREATMENT	
DELAWARE CITY REFINERY										
1,2,4-TRIMETHYLBENZENE	0	0	0	0	0	0	0	0	59,876	59,876
1,3-BUTADIENE	0	0	0	0	0	0	0	0	0	0
2,4-DIMETHYLPHENOL	0	0	0	0	0	0	0	0	242,243	242,243
AMMONIA	0	0	0	0	0	0	15,386,943	0	65,420	15,452,363
ANTHRACENE	0	0	0	0	0	0	0	0	0	0
ASBESTOS (FRIABLE)	0	0	0	0	166,240	166,240	0	0	0	0
BENZENE	0	29	0	55	0	84	0	279,632	130,409	410,041
BENZO(G,H,I)PERYLENE	0	0	0	0	0	0	0	0	473	473
CARBON DISULFIDE	0	0	0	0	0	0	0	121,701	4,071,435	4,193,136
CARBONYL SULFIDE	0	0	0	0	0	0	0	72,645	15,054,714	15,127,359
CREOSOTE	0	0	0	0	26,732	26,732	0	0	0	0
CRESOL (MIXED ISOMERS)	0	0	0	0	0	0	0	21,750	315,717	337,467
CUMENE	0	0	0	0	0	0	0	0	3,606	3,606
CYANIDE COMPOUNDS	0	0	0	0	0	0	0	0	15,051	15,051
CYCLOHEXANE	0	0	0	0	0	0	0	0	7,372	7,372
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
ETHYLBENZENE	0	48	0	11	0	59	0	0	52,457	52,457
ETHYLENE	0	0	0	0	0	0	0	0	0	0
HYDROCHLORIC ACID	0	0	0	0	0	0	0	0	87,917	87,917
HYDROGEN CYANIDE	0	0	0	0	0	0	0	0	298,734	298,734
HYDROGEN SULFIDE	0	0	0	0	0	0	0	0	433,409,006	433,409,006
LEAD COMPOUNDS	0	5	0	0	35	41	0	0	0	0
MERCURY COMPOUNDS	0	1	0	0	0	1	0	0	0	0
METHANOL	0	0	0	0	0	0	0	0	37,706	37,706
MOLYBDENUM TRIOXIDE	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE	0	0	0	0	0	0	0	0	11,526	11,526
N-HEXANE	0	0	0	0	0	0	0	0	167,130	167,130
NITRATE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
PHENANTHRENE	0	0	0	0	0	0	0	0	41	41
PHENOL	0	0	0	0	0	0	0	48,299	267,004	315,303
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	0	0	0	389	389
PROPYLENE	0	0	0	0	0	0	0	0	0	0
STYRENE	0	0	0	0	0	0	0	0	1,211	1,211
SULFURIC ACID	0	0	0	0	0	0	0	0	0	0
TETRACHLOROETHYLENE	0	0	0	0	0	0	0	0	0	0
TOLUENE	0	28	0	35	0	63	0	0	224,834	224,834
XYLENE (MIXED ISOMERS)	0	244	0	58	2	303	0	0	220,049	220,049
DELAWARE CITY REFINERY Total	0	355	0	160	193,010	193,524	0	15,930,970	454,744,320	470,675,290

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT				
	POTW	RECYCLE	ENERGY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY	TREATMENT	TOTAL	
			RECOVERY					RECOVERY			
DENTSPLY MAIN PLANT											
MERCURY	0	1,003	0	0	0	1,003	0	0	0	0	0
DENTSPLY MAIN PLANT Total	0	1,003	0	0	0	1,003	0	0	0	0	0
DENTSPLY WEST PLANT											
METHANOL	106	0	10,735	0	0	10,841	0	0	0	0	0
METHYL METHACRYLATE	74	0	0	0	0	74	0	0	0	0	0
TOLUENE	0	0	12,328	0	0	12,328	0	0	0	0	0
DENTSPLY WEST PLANT Total	181	0	23,062	0	0	23,243	0	0	0	0	0
DOVER AFB											
1,2,4-TRIMETHYLBENZENE	0	0	0	0	0	0	0	0	0	0	0
CUMENE	0	0	0	0	0	0	0	0	0	0	0
ETHYLBENZENE	0	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE	0	0	0	0	0	0	0	0	0	0	0
XYLENE (MIXED ISOMERS)	0	0	0	0	0	0	0	0	0	0	0
DOVER AFB Total	0	0	0	0	0	0	0	0	0	0	0
DUHADAWAY TOOL & DIE SHOP											
CHROMIUM	0	12,050	0	0	396	12,446	0	0	0	0	0
NICKEL	0	10,954	0	0	395	11,349	0	0	0	0	0
DUHADAWAY TOOL & DIE SHOP Total	0	23,004	0	0	791	23,795	0	0	0	0	0

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	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY		DISPOSAL	TOTAL	RECYCLE	ENERGY		TOTAL
			RECOVERY	TREATMENT				RECOVERY	TREATMENT	
DUPONT EDGE MOOR										
ARSENIC COMPOUNDS	0	0	0	0	172	172	0	0	0	0
BARIUM COMPOUNDS	0	0	0	0	7,375	7,375	0	0	0	0
CARBONYL SULFIDE	0	0	0	0	0	0	0	0	0	0
CHLORINE	0	0	0	0	0	0	0	0	1,982,489	1,982,489
COBALT COMPOUNDS	0	0	0	0	4,390	4,390	0	0	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
HEXACHLOROBENZENE	0	0	0	0	12	12	0	0	0	0
HYDROCHLORIC ACID	0	0	0	0	0	0	0	0	6,635,842	6,635,842
LEAD COMPOUNDS	0	0	0	0	13,462	13,462	0	0	0	0
MANGANESE COMPOUNDS	0	0	0	0	1,641,568	1,641,568	0	0	0	0
MERCURY COMPOUNDS	0	0	0	0	1	1	0	0	0	0
NICKEL COMPOUNDS	0	0	0	0	13,321	13,321	0	0	0	0
OCTACHLOROSTYRENE	0	0	0	0	0	0	0	0	0	0
PENTACHLOROBENZENE	0	0	0	0	1	1	0	0	0	0
PHOSGENE	0	0	0	0	0	0	0	0	165,815	165,815
POLYCHLORINATED BIPHENYLS	0	0	0	0	2	2	0	0	0	0
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	0	0	0	0	0
TITANIUM TETRACHLORIDE	0	0	0	0	0	0	0	0	1,236,493	1,236,493
TOLUENE	0	0	0	0	94	94	0	0	0	0
VANADIUM COMPOUNDS	0	0	0	0	150,855	150,855	0	0	0	0
ZINC COMPOUNDS	0	0	0	0	29,716	29,716	0	0	0	0
CHROMIUM COMPOUNDS2	0	0	0	0	142,883	142,883	0	0	0	0
DUPONT EDGE MOOR Total	0	0	0	0	2,003,854	2,003,854	0	0	10,020,639	10,020,639
DUPONT RED LION PLANT										
HYDRAZINE	0	0	0	0	0	0	0	0	0	0
HYDRAZINE SULFATE	0	0	0	0	0	0	0	0	0	0
HYDROGEN SULFIDE	0	0	0	0	0	0	0	0	0	0
SULFURIC ACID	0	0	0	0	0	0	0	0	0	0
DUPONT RED LION PLANT Total	0	0	0	0	0	0	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS										
AMMONIA	124	0	0	0	0	124	0	0	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
MERCURY	0	0	0	0	0	0	0	0	0	0
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	0	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS Total	124	0	0	0	0	124	0	0	0	0

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY		DISPOSAL	TOTAL	RECYCLE	ENERGY		TOTAL
			RECOVERY	TREATMENT				RECOVERY	TREATMENT	
FORMOSA PLASTICS										
AMMONIA	0	0	0	0	0	0	0	0	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
VINYL ACETATE	0	0	0	0	0	0	0	0	0	0
VINYL CHLORIDE	0	226	0	0	44	270	0	0	289,794	289,794
FORMOSA PLASTICS Total	0	226	0	0	44	270	0	0	289,794	289,794
FUJIFILM										
NITRATE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
FUJIFILM Total	0	0	0	0	0	0	0	0	0	0
GAC SEAFORD										
1,2,4-TRIMETHYLBENZENE	0	0	0	0	0	0	0	0	0	0
GAC SEAFORD Total	0	0	0	0	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING										
1,2,4-TRIMETHYLBENZENE	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE	0	0	0	0	0	0	0	0	0	0
XYLENE (MIXED ISOMERS)	0	0	0	0	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING Total	0	0	0	0	0	0	0	0	0	0
HANDYTUBE										
CHROMIUM	0	28,706	0	0	424	29,130	0	0	0	0
MANGANESE	0	2,907	0	0	38	2,945	0	0	0	0
NICKEL	0	30,887	0	0	657	31,544	0	0	0	0
TRICHLOROETHYLENE	0	0	0	9,100	0	9,100	0	0	0	0
HANDYTUBE Total	0	62,500	0	9,100	1,119	72,719	0	0	0	0
HANESBRANDS										
NITRATE COMPOUNDS	58,887	0	0	0	0	58,887	0	0	0	0
ZINC COMPOUNDS	553	0	0	0	3	556	0	0	0	0
HANESBRANDS Total	59,440	0	0	0	3	59,443	0	0	0	0
HIRSH INDUSTRIES										
CERTAIN GLYCOL ETHERS	0	0	0	0	0	0	0	0	0	0
HIRSH INDUSTRIES Total	0	0	0	0	0	0	0	0	0	0

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT				
	POTW	RECYCLE	ENERGY		DISPOSAL	TOTAL	RECYCLE	ENERGY		TOTAL	
			RECOVERY	TREATMENT				RECOVERY	TREATMENT		
HMA - HERITAGE CONCRETE BEAR											
LEAD	0	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE BEAR Total	0	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE CHESWOLD											
LEAD	0	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE CHESWOLD Total	0	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE HEALD STREET											
LEAD	0	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE HEALD STREET Total	0	0	0	0	0	0	0	0	0	0	0
HONEYWELL											
BORON TRIFLUORIDE	0	0	0	0	0	0	0	0	131,153	131,153	131,153
HYDROGEN FLUORIDE	0	0	0	0	10	10	0	0	98	98	98
METHANOL	0	0	2,560	0	0	2,560	0	0	60	60	60
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	0	0	0	0	0	0
HONEYWELL Total	0	0	2,560	0	10	2,570	0	0	131,311	131,311	131,311
IKO											
POLYCYCLIC AROMATIC COMPOUNDS	0	140	0	0	1	141	545	0	0	545	545
IKO Total	0	140	0	0	1	141	545	0	0	545	545
INDIAN RIVER GENERATING STATION											
AMMONIA	0	0	0	0	0	0	0	0	201,184	201,184	201,184
BARIUM COMPOUNDS	0	0	0	0	2	2	0	0	0	0	0
HYDROCHLORIC ACID	0	0	0	0	0	0	0	0	562,719	562,719	562,719
HYDROGEN FLUORIDE	0	0	0	0	0	0	0	0	58,079	58,079	58,079
LEAD COMPOUNDS	0	0	0	0	0	0	0	0	0	0	0
MERCURY COMPOUNDS	0	0	0	0	0	0	0	0	0	0	0
SULFURIC ACID	0	0	0	0	0	0	0	0	1,014,437	1,014,437	1,014,437
INDIAN RIVER GENERATING STATION Total	0	0	0	0	2	2	0	0	1,836,419	1,836,419	1,836,419
INTERVET											
MERCURY COMPOUNDS	0	0	0	0	1	1	0	0	0	0	0
INTERVET Total	0	0	0	0	1	1	0	0	0	0	0

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY		DISPOSAL	TOTAL	RECYCLE	ENERGY		TOTAL
			RECOVERY	TREATMENT				RECOVERY	TREATMENT	
JOHNSON CONTROLS BATTERY PLANT										
ANTIMONY COMPOUNDS	0	13,022	0	0	0	13,022	0	0	0	0
LEAD COMPOUNDS	1	3,319,543	0	0	21,411	3,340,955	0	0	0	0
JOHNSON CONTROLS BATTERY PLANT Total	1	3,332,565	0	0	21,411	3,353,978	0	0	0	0
JOHNSON CONTROLS DISTRIBUTION CENTER										
LEAD COMPOUNDS	1	1,671,198	0	0	0	1,671,199	0	0	0	0
JOHNSON CONTROLS DISTRIBUTION CENTER Total	1	1,671,198	0	0	0	1,671,199	0	0	0	0
JUSTIN TANKS										
STYRENE	0	0	0	202	0	202	22,680	0	0	22,680
JUSTIN TANKS Total	0	0	0	202	0	202	22,680	0	0	22,680
KUEHNE										
CHLORINE	0	0	0	0	0	0	0	0	0	0
KUEHNE Total	0	0	0	0	0	0	0	0	0	0
MACDERMID										
DIISOCYANATES	0	0	0	0	0	0	0	0	0	0
TOLUENE DIISOCYANATE (MIXED ISOMERS)	0	0	0	0	0	0	0	0	0	0
MACDERMID Total	0	0	0	0	0	0	0	0	0	0
METAL MASTERS										
CHROMIUM	0	184,203	0	0	691	184,894	0	0	0	0
NICKEL	0	58,761	0	0	211	58,972	0	0	0	0
METAL MASTERS Total	0	242,964	0	0	902	243,866	0	0	0	0

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY		DISPOSAL	TOTAL	RECYCLE	ENERGY		TOTAL
			RECOVERY	TREATMENT				RECOVERY	TREATMENT	
MOUNTAIRE FARMS - FRANKFORD										
COPPER COMPOUNDS	0	0	0	0	0	0	0	0	0	0
MANGANESE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
ZINC COMPOUNDS	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD Total	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS - SELBYVILLE										
PERACETIC ACID	0	0	0	0	0	0	0	0	64,234	64,234
MOUNTAIRE FARMS - SELBYVILLE Total	0	0	0	0	0	0	0	0	64,234	64,234
MOUNTAIRE FARMS OF DELAWARE										
COPPER COMPOUNDS	0	0	0	0	0	0	0	0	0	0
HYDROGEN SULFIDE	0	0	0	0	0	0	0	0	102,668	102,668
MANGANESE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
PERACETIC ACID	0	0	0	0	0	0	0	0	74,753	74,753
ZINC COMPOUNDS	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE Total	0	0	0	0	0	0	0	0	177,421	177,421
NORAMCO										
DICHLOROMETHANE	585	0	57,923	0	0	58,508	0	0	58,508	58,508
ETHYLENE GLYCOL	0	0	0	3,600	0	3,600	0	0	0	0
FORMIC ACID	25,320	0	0	0	0	25,320	0	0	0	0
METHANOL	1,811	0	34,409	0	0	36,220	0	0	36,220	36,220
N-BUTYL ALCOHOL	35,413	0	672,853	0	0	708,266	0	0	708,266	708,266
PERACETIC ACID	35,948	0	0	0	0	35,948	0	0	0	0
TOLUENE	8,691	0	860,419	0	0	869,110	0	0	869,110	869,110
NORAMCO Total	107,768	0	1,625,604	3,600	0	1,736,972	0	0	1,672,104	1,672,104
ORIENT CORP										
ANILINE	1,800	0	0	0	72	1,872	1,600,000	0	160,000	1,760,000
NITROBENZENE	0	0	0	0	0	0	0	0	0	0
ZINC COMPOUNDS	0	0	0	0	0	0	0	0	0	0
CHROMIUM COMPOUNDS2	0	0	0	0	0	0	0	0	0	0
ORIENT CORP Total	1,800	0	0	0	72	1,872	1,600,000	0	160,000	1,760,000

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY		DISPOSAL	TOTAL	RECYCLE	ENERGY		TOTAL
			RECOVERY	TREATMENT				RECOVERY	TREATMENT	
PERDUE BRIDGEVILLE										
COPPER COMPOUNDS	0	0	0	0	0	0	0	0	0	0
MANGANESE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
ZINC COMPOUNDS	0	0	0	0	0	0	0	0	0	0
PERDUE BRIDGEVILLE Total	0	0	0	0	0	0	0	0	0	0
PERDUE GEORGETOWN										
HYDROGEN SULFIDE	0	0	0	0	0	0	0	0	82,300	82,300
NITRATE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
PERDUE GEORGETOWN Total	0	0	0	0	0	0	0	0	82,300	82,300
PERDUE MILFORD										
PERACETIC ACID	13	0	0	0	0	13	0	0	26,184	26,184
PERDUE MILFORD Total	13	0	0	0	0	13	0	0	26,184	26,184
PICTSWEET BRIDGEVILLE										
AMMONIA	0	0	0	0	0	0	0	0	0	0
PICTSWEET BRIDGEVILLE Total	0	0	0	0	0	0	0	0	0	0
PPG INDUSTRIES										
CERTAIN GLYCOL ETHERS	904	87	0	0	49	1,040	0	0	0	0
ETHYLENE GLYCOL	4,097	69	0	0	1,095	5,261	0	0	0	0
ZINC COMPOUNDS	3,702	0	0	561	1,574	5,837	0	0	0	0
PPG INDUSTRIES Total	8,703	156	0	561	2,718	12,138	0	0	0	0
PRINCE MINERALS										
BARIUM COMPOUNDS	0	0	0	0	0	0	0	0	0	0
MANGANESE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
NICKEL COMPOUNDS	0	0	0	0	0	0	0	0	0	0
PRINCE MINERALS Total	0	0	0	0	0	0	0	0	0	0
ROGERS CORP (formerly ARLON)										
COPPER	5	1,500	0	0	5	1,510	0	0	0	0
ETHYLBENZENE	0	0	0	750	0	750	0	0	29,000	29,000
XYLENE (MIXED ISOMERS)	0	0	0	3,300	0	3,300	0	0	116,000	116,000
ROGERS CORP (formerly ARLON) Total	5	1,500	0	4,050	5	5,560	0	0	145,000	145,000

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT				
	POTW	RECYCLE	ENERGY			TOTAL	RECYCLE	ENERGY		TREATMENT	TOTAL
			RECOVERY	TREATMENT	DISPOSAL			RECOVERY	TREATMENT		
ROHM & HAAS B2 B3 B8											
DIISOCYANATES	0	0	0	6,881	0	6,881	0	0	0	0	0
N,N-DIMETHYLFORMAMIDE	149,942	1,007,656	0	0	91,986	1,249,584	4,174,687	0	574	4,175,261	4,175,261
ROHM & HAAS B2 B3 B8 Total	149,942	1,007,656	0	6,881	91,986	1,256,465	4,174,687	6,881	0	574	4,175,261
ROHM & HAAS B5 B6											
4,4'-METHYLENEBIS(2-CHLOROANILINE)	0	0	0	0	2,206	2,206	0	0	0	0	0
DIISOCYANATES	0	0	0	17,221	0	17,221	0	0	0	0	0
N-METHYL-2-PYRROLIDONE	0	58,620	0	2,475	0	61,095	0	0	0	0	0
ROHM & HAAS B5 B6 Total	0	58,620	0	19,696	2,206	80,522	0	0	0	0	0
ROHM & HAAS B7 B15											
DIISOCYANATES	0	0	0	11,878	0	11,878	0	0	0	0	0
N-METHYL-2-PYRROLIDONE	0	9,500	0	458	0	9,958	0	0	0	0	0
ROHM & HAAS B7 B15 Total	0	9,500	0	12,336	0	21,836	0	0	0	0	0
SERVICE ENERGY DOVER											
1,2,4-TRIMETHYLBENZENE	0	0	0	0	0	0	0	0	0	0	0
TOLUENE	0	0	0	0	0	0	0	0	0	0	0
SERVICE ENERGY DOVER Total	0	0	0	0	0	0	0	0	0	0	0
SPI PHARMA											
CHLORINE	0	0	0	0	0	0	0	0	0	0	0
NITRIC ACID	0	0	0	0	0	0	0	0	0	0	0
SPI PHARMA Total	0	0	0	0	0	0	0	0	0	0	0
V&S DELAWARE GALVANIZING											
LEAD	0	4,089	0	0	271	4,360	2,025	0	0	2,025	2,025
ZINC COMPOUNDS	0	137,419	0	0	37,645	175,064	237,553	0	0	237,553	237,553
V&S DELAWARE GALVANIZING Total	0	141,508	0	0	37,917	179,425	239,578	0	0	239,578	239,578
VP RACING FUELS											
LEAD COMPOUNDS	0	0	0	0	1	1	0	0	0	0	0
METHANOL	0	0	0	0	0	0	0	0	0	0	0
TOLUENE	0	0	0	0	0	0	0	0	0	0	0
XYLENE (MIXED ISOMERS)	0	0	0	0	0	0	0	0	0	0	0
VP RACING FUELS Total	0	0	0	0	1	1	0	0	0	0	0
STATE TOTALS	934,025	7,384,097	2,005,555	314,129	2,356,053	12,993,859	11,636,106	15,930,970	470,213,664	497,780,740	497,780,740

APPENDIX D

APPENDIX E

2014 ON-SITE RELEASE SUMMARY BY FACILITY

FACILITY - RANKED BY TOTAL ON-SITE RELEASE	ON-SITE RELEASES			TOTAL	TRANSFERS	ON-SITE
	TO AIR	TO WATER	TO LAND		OFF-SITE	WASTE MGMT.
DELAWARE CITY REFINERY	407,020	2,748,504	2,253	3,157,777	193,524	470,675,290
DUPONT EDGE MOOR	231,131	13,754	615	245,499	2,003,854	10,020,639
PERDUE GEORGETOWN	7,330	168,674	0	176,004	0	82,300
FORMOSA PLASTICS	65,942	0	0	65,942	270	289,794
BASF NEWPORT	21,507	0	0	21,507	917,977	1,188,114
INDIAN RIVER GENERATING STATION	4,934	0	14,804	19,738	2	1,836,419
JUSTIN TANKS	9,802	0	202	10,004	202	22,680
MOUNTAIRE FARMS OF DELAWARE	9,262	0	0	9,262	0	177,421
HIRSH INDUSTRIES	7,062	0	0	7,062	0	0
DUPONT RED LION PLANT	6,972	0	0	6,972	0	0
HANDYTUBE	6,331	0	0	6,331	72,719	0
ROHM & HAAS B2 B3 B8	4,150	0	0	4,150	1,256,465	4,175,261
DENTSPLY WEST PLANT	4,077	0	0	4,077	23,243	0
CRODA	3,280	0	0	3,280	3,595	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	2,970	1	0	2,971	124	0
ROGERS CORP (formerly ARLON)	2,470	0	0	2,470	5,560	145,000
AIR LIQUIDE - MEDAL	2,310	0	0	2,310	279,913	5,273,866
ROHM & HAAS B5 B6	2,133	0	0	2,133	80,522	0
AGILENT TECHNOLOGIES	1,442	0	0	1,442	205,891	0
HONEYWELL	1,381	0	0	1,381	2,570	131,311
ROHM & HAAS B7 B15	768	0	0	768	21,836	0
NORAMCO	700	0	0	700	1,736,972	1,672,104
V&S DELAWARE GALVANIZING	489	125	0	614	179,425	239,578
KUEHNE	517	0	0	517	0	0
MOUNTAIRE FARMS - SELBYVILLE	246	0	0	246	0	64,234
PRINCE MINERALS	243	0	0	243	0	0
DOVER AFB	202	0	0	202	0	0
PICTSWEET BRIDGEVILLE	200	0	0	200	0	0
JOHNSON CONTROLS BATTERY PLANT	120	9	0	129	3,353,978	0
ORIENT CORP	77	0	0	77	1,872	1,760,000
PPG INDUSTRIES	35	0	0	35	12,138	0
HMA - HERITAGE CONCRETE HEALD STREET	0	0	19	19	0	0
BALTIMORE AIRCOIL	15	0	0	15	624,942	0
HMA - HERITAGE CONCRETE BEAR	0	0	9	9	0	0
HMA - HERITAGE CONCRETE CHESWOLD	0	0	9	9	0	0
AEARO TECHNOLOGIES	8	0	0	8	15,806	0
VP RACING FUELS	1	0	0	1	1	0
METAL MASTERS	1	0	0	1	243,866	0
IKO	0	0	0	0	141	545
DENTSPLY MAIN PLANT	0	0	0	0	1,003	0
ALLEN HARIM FOODS - HARBESON	0	0	0	0	0	0
JOHNSON CONTROLS DISTRIBUTION CENTER	0	0	0	0	1,671,199	0

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2014 ON-SITE RELEASE SUMMARY BY FACILITY

FACILITY - RANKED BY TOTAL ON-SITE RELEASE	ON-SITE RELEASES				TRANSFERS	ON-SITE
	TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE	WASTE MGMT.
SPI PHARMA	0	0	0	0	0	0
ALLEN HARIM FARMS - SEAFORD	0	0	0	0	0	0
FUJIFILM	0	0	0	0	0	0
HANESBRANDS	0	0	0	0	59,443	0
DUHADAWAY TOOL & DIE SHOP	0	0	0	0	23,795	0
INTERVET	0	0	0	0	1	0
AMICK FARMS	0	0	0	0	0	0
PERDUE BRIDGEVILLE	0	0	0	0	0	0
SERVICE ENERGY DOVER	0	0	0	0	0	0
COLOR WORKS PAINTING	0	0	0	0	997	0
MACDERMID	0	0	0	0	0	0
PERDUE MILFORD	0	0	0	0	13	26,184
GAC SEAFORD	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING	0	0	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD	0	0	0	0	0	0
Grand Total	805,127	2,931,067	17,910	3,754,104	12,993,859	497,780,740

APPENDIX F

2014 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES			TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND			
1,2,4-TRIMETHYLBENZENE							
DELAWARE CITY REFINERY	0	1,259	5	0	1,264	0	59,876
DOVER AFB	0	38	0	0	38	0	0
GAC SEAFORD	1	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING	1	0	0	0	0	0	0
SERVICE ENERGY DOVER	1	0	0	0	0	0	0
1,2,4-TRIMETHYLBENZENE Total	3	1,297	5	0	1,302	0	59,876
1,3-BUTADIENE							
DELAWARE CITY REFINERY	0	581	0	0	581	0	0
1,3-BUTADIENE Total	0	581	0	0	581	0	0
2,4-DIMETHYLPHENOL							
DELAWARE CITY REFINERY	0	0	173	0	173	0	242,243
2,4-DIMETHYLPHENOL Total	0	0	173	0	173	0	242,243
4,4'-METHYLENEBIS(2-CHLOROANILINE)							
ROHM & HAAS B5 B6	0	0	0	0	0	2,206	0
4,4'-METHYLENEBIS(2-CHLOROANILINE) Total	0	0	0	0	0	2,206	0
ACETONITRILE							
AGILENT TECHNOLOGIES	0	71	0	0	71	17,271	0
ACETONITRILE Total	0	71	0	0	71	17,271	0
AMMONIA							
DELAWARE CITY REFINERY	0	25,999	4,684	0	30,683	0	15,452,363
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	2,950	1	0	2,951	124	0
FORMOSA PLASTICS	0	4,157	0	0	4,157	0	0
INDIAN RIVER GENERATING STATION	0	1,442	0	0	1,442	0	201,184
PICTSWEET BRIDGEVILLE	0	200	0	0	200	0	0
AMMONIA Total	0	34,748	4,685	0	39,433	124	15,653,547
ANILINE							
BASF NEWPORT	0	22	0	0	22	32,865	1,121
ORIENT CORP	0	75	0	0	75	1,872	1,760,000
ANILINE Total	0	97	0	0	97	34,737	1,761,121
ANTHRACENE							
DELAWARE CITY REFINERY	0	10	5	0	15	0	0
ANTHRACENE Total	0	10	5	0	15	0	0

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APPENDIX F

2014 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES			TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND			
ANTIMONY COMPOUNDS							
JOHNSON CONTROLS BATTERY PLANT	0	0	0	0	0	13,022	0
ANTIMONY COMPOUNDS Total	0	0	0	0	0	13,022	0
ARSENIC COMPOUNDS							
DUPONT EDGE MOOR	0	0	61	0	61	172	0
ARSENIC COMPOUNDS Total	0	0	61	0	61	172	0
ASBESTOS (FRIABLE)							
DELAWARE CITY REFINERY	0	0	0	0	0	166,240	0
ASBESTOS (FRIABLE) Total	0	0	0	0	0	166,240	0
BARIUM COMPOUNDS							
DUPONT EDGE MOOR	0	2	3,291	0	3,292	7,375	0
INDIAN RIVER GENERATING STATION	0	77	0	13,662	13,739	2	0
PRINCE MINERALS	1	0	0	0	0	0	0
BARIUM COMPOUNDS Total	1	79	3,291	13,662	17,031	7,377	0
BENZENE							
DELAWARE CITY REFINERY	0	7,213	11	0	7,224	84	410,041
BENZENE Total	0	7,213	11	0	7,224	84	410,041
BENZO(G,H,I)PERYLENE							
DELAWARE CITY REFINERY	0	0	5	0	5	0	473
BENZO(G,H,I)PERYLENE Total	0	0	5	0	5	0	473
BIPHENYL							
BASF NEWPORT	0	90	0	0	90	251,859	2,321
BIPHENYL Total	0	90	0	0	90	251,859	2,321
BORON TRIFLUORIDE							
HONEYWELL	0	435	0	0	435	0	131,153
BORON TRIFLUORIDE Total	0	435	0	0	435	0	131,153
CARBON DISULFIDE							
DELAWARE CITY REFINERY	0	1,229	0	0	1,229	0	4,193,136
CARBON DISULFIDE Total	0	1,229	0	0	1,229	0	4,193,136
CARBONYL SULFIDE							
DELAWARE CITY REFINERY	0	490	0	0	490	0	15,127,359
DUPONT EDGE MOOR	0	224,780	0	0	224,780	0	0
CARBONYL SULFIDE Total	0	225,270	0	0	225,270	0	15,127,359

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FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES			TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND			
CERTAIN GLYCOL ETHERS							
CRODA	0	3	0	0	3	3,152	0
HIRSH INDUSTRIES	0	7,062	0	0	7,062	0	0
PPG INDUSTRIES	0	0	0	0	0	1,040	0
CERTAIN GLYCOL ETHERS Total	0	7,065	0	0	7,065	4,192	0
CHLORINE							
DUPONT EDGE MOOR	0	2,237	0	0	2,237	0	1,982,489
KUEHNE	0	517	0	0	517	0	0
SPI PHARMA	1	0	0	0	0	0	0
CHLORINE Total	1	2,754	0	0	2,754	0	1,982,489
CHROMIUM							
DUHADAWAY TOOL & DIE SHOP	0	0	0	0	0	12,446	0
HANDYTUBE	0	0	0	0	0	29,130	0
METAL MASTERS	0	1	0	0	1	184,894	0
CHROMIUM Total	0	1	0	0	1	226,470	0
CHROMIUM COMPOUNDS							
BALTIMORE AIRCOIL	0	5	0	0	5	212,501	0
DUPONT EDGE MOOR	0	1	36	0	37	142,883	0
ORIENT CORP	0	0	0	0	0	0	0
CHROMIUM COMPOUNDS Total	0	6	36	0	42	355,384	0
COBALT COMPOUNDS							
BALTIMORE AIRCOIL	0	0	0	0	0	26,100	0
DUPONT EDGE MOOR	0	0	15	0	15	4,390	0
COBALT COMPOUNDS Total	0	0	15	0	15	30,490	0
COPPER							
ROGERS CORP (formerly ARLON)	0	10	0	0	10	1,510	0
COPPER Total	0	10	0	0	10	1,510	0
COPPER COMPOUNDS							
AMICK FARMS	1	0	0	0	0	0	0
BALTIMORE AIRCOIL	0	0	0	0	0	37,203	0
MOUNTAIRE FARMS - FRANKFORD	1	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	1	0	0	0	0	0	0
PERDUE BRIDGEVILLE	1	0	0	0	0	0	0
COPPER COMPOUNDS Total	4	0	0	0	0	37,203	0

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2014 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES				TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND				
CREOSOTE								
DELAWARE CITY REFINERY	0	398	0	2,253	2,651	26,732	0	
CREOSOTE Total	0	398	0	2,253	2,651	26,732	0	
CRESOL (MIXED ISOMERS)								
DELAWARE CITY REFINERY	0	0	345	0	345	0	337,467	
CRESOL (MIXED ISOMERS) Total	0	0	345	0	345	0	337,467	
CUMENE								
DELAWARE CITY REFINERY	0	2,990	5	0	2,995	0	3,606	
DOVER AFB	0	39	0	0	39	0	0	
CUMENE Total	0	3,029	5	0	3,034	0	3,606	
CYANIDE COMPOUNDS								
DELAWARE CITY REFINERY	0	0	152	0	152	0	15,051	
CYANIDE COMPOUNDS Total	0	0	152	0	152	0	15,051	
CYCLOHEXANE								
AIR LIQUIDE - MEDAL	0	954	0	0	954	19,720	0	
BASF NEWPORT	0	50	0	0	50	34,770	3,452	
DELAWARE CITY REFINERY	0	1,783	5	0	1,788	0	7,372	
CYCLOHEXANE Total	0	2,787	5	0	2,792	54,490	10,824	
DICHLOROMETHANE								
NORAMCO	0	428	0	0	428	58,508	58,508	
DICHLOROMETHANE Total	0	428	0	0	428	58,508	58,508	
DIETHANOLAMINE								
CRODA	0	4	0	0	4	23	0	
DIETHANOLAMINE Total	0	4	0	0	4	23	0	
DIISOCYANATES								
AEARO TECHNOLOGIES	0	3	0	0	3	12,248	0	
MACDERMID	1	0	0	0	0	0	0	
ROHM & HAAS B2 B3 B8	0	0	0	0	0	6,881	0	
ROHM & HAAS B5 B6	0	2	0	0	2	17,221	0	
ROHM & HAAS B7 B15	0	2	0	0	2	11,878	0	
DIISOCYANATES Total	1	7	0	0	7	48,228	0	

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2014 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES			TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND			
DIOXIN AND DIOXIN-LIKE COMPOUNDS							
DELAWARE CITY REFINERY	0	0	0	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0
FORMOSA PLASTICS	0	0	0	0	0	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS Total	0	0	0	0	0	0	0
ETHYLBENZENE							
DELAWARE CITY REFINERY	0	1,909	5	0	1,914	59	52,457
DOVER AFB	0	40	0	0	40	0	0
ROGERS CORP (formerly ARLON)	0	500	0	0	500	750	29,000
ETHYLBENZENE Total	0	2,449	5	0	2,454	809	81,457
ETHYLENE							
DELAWARE CITY REFINERY	0	8,135	0	0	8,135	0	0
ETHYLENE Total	0	8,135	0	0	8,135	0	0
ETHYLENE GLYCOL							
NORAMCO	0	10	0	0	10	3,600	0
PPG INDUSTRIES	0	0	0	0	0	5,261	0
ETHYLENE GLYCOL Total	0	10	0	0	10	8,861	0
ETHYLENE OXIDE							
CRODA	0	2,688	0	0	2,688	0	0
ETHYLENE OXIDE Total	0	2,688	0	0	2,688	0	0
FORMIC ACID							
NORAMCO	0	11	0	0	11	25,320	0
FORMIC ACID Total	0	11	0	0	11	25,320	0
HEXACHLORO BENZENE							
DUPONT EDGE MOOR	0	0	0	0	0	12	0
HEXACHLORO BENZENE Total	0	0	0	0	0	12	0
HYDRAZINE							
DUPONT RED LION PLANT	0	0	0	0	0	0	0
HYDRAZINE Total	0	0	0	0	0	0	0
HYDRAZINE SULFATE							
DUPONT RED LION PLANT	0	0	0	0	0	0	0
HYDRAZINE SULFATE Total	0	0	0	0	0	0	0

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FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES			TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND			
HYDROCHLORIC ACID							
DELAWARE CITY REFINERY	0	201	0	0	201	0	87,917
DUPONT EDGE MOOR	0	3,583	0	0	3,583	0	6,635,842
INDIAN RIVER GENERATING STATION	0	732	0	0	732	0	562,719
HYDROCHLORIC ACID Total	0	4,516	0	0	4,516	0	7,286,478
HYDROGEN CYANIDE							
DELAWARE CITY REFINERY	0	724	212	0	936	0	298,734
HYDROGEN CYANIDE Total	0	724	212	0	936	0	298,734
HYDROGEN FLUORIDE							
HONEYWELL	0	544	0	0	544	10	98
INDIAN RIVER GENERATING STATION	0	783	0	0	783	0	58,079
HYDROGEN FLUORIDE Total	0	1,327	0	0	1,327	10	58,177
HYDROGEN SULFIDE							
DELAWARE CITY REFINERY	0	12,420	1	0	12,421	0	433,409,006
DUPONT RED LION PLANT	0	148	0	0	148	0	0
MOUNTAIRE FARMS OF DELAWARE	0	9,034	0	0	9,034	0	102,668
PERDUE GEORGETOWN	0	7,330	0	0	7,330	0	82,300
HYDROGEN SULFIDE Total	0	28,932	1	0	28,932	0	433,593,974
LEAD							
HMA - HERITAGE CONCRETE BEAR	0	0	0	9	9	0	0
HMA - HERITAGE CONCRETE CHESWOLD	0	0	0	9	9	0	0
HMA - HERITAGE CONCRETE HEALD STREET	0	0	0	19	19	0	0
V&S DELAWARE GALVANIZING	0	8	7	0	15	4,360	2,025
LEAD Total	0	8	7	37	52	4,360	2,025
LEAD COMPOUNDS							
DELAWARE CITY REFINERY	0	104	3	0	107	41	0
DUPONT EDGE MOOR	0	0	78	0	78	13,462	0
INDIAN RIVER GENERATING STATION	0	26	0	1,061	1,087	0	0
JOHNSON CONTROLS BATTERY PLANT	0	120	9	0	129	3,340,955	0
JOHNSON CONTROLS DISTRIBUTION CENTER	0	0	0	0	0	1,671,199	0
VP RACING FUELS	0	1	0	0	1	1	0
LEAD COMPOUNDS Total	0	250	90	1,061	1,401	5,025,659	0

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2014 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES			TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND			
MANGANESE							
COLOR WORKS PAINTING	0	0	0	0	0	997	0
HANDYTUBE	0	0	0	0	0	2,945	0
MANGANESE Total	0	0	0	0	0	3,942	0
MANGANESE COMPOUNDS							
ALLEN HARIM FARMS - SEAFORD	1	0	0	0	0	0	0
AMICK FARMS	1	0	0	0	0	0	0
BALTIMORE AIRCOIL	0	5	0	0	5	105,317	0
DUPONT EDGE MOOR	0	1	8,942	0	8,943	1,641,568	0
MOUNTAIRE FARMS - FRANKFORD	1	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	1	0	0	0	0	0	0
PERDUE BRIDGEVILLE	1	0	0	0	0	0	0
PRINCE MINERALS	0	243	0	0	243	0	0
MANGANESE COMPOUNDS Total	5	249	8,942	0	9,191	1,746,885	0
MERCURY							
DENTSPLY MAIN PLANT	0	0	0	0	0	1,003	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	19	0	0	19	0	0
MERCURY Total	0	20	0	0	20	1,003	0
MERCURY COMPOUNDS							
DELAWARE CITY REFINERY	0	56	2	0	58	1	0
DUPONT EDGE MOOR	0	1	0	0	1	1	0
INDIAN RIVER GENERATING STATION	0	2	0	81	83	0	0
INTERVET	0	0	0	0	0	1	0
MERCURY COMPOUNDS Total	0	59	2	81	142	3	0
METHANOL							
AGILENT TECHNOLOGIES	0	1,334	0	0	1,334	38,777	0
AIR LIQUIDE - MEDAL	0	25	0	0	25	83,791	2,878,874
BASF NEWPORT	0	20,408	0	0	20,408	500,659	1,148,370
DELAWARE CITY REFINERY	0	5,148	5	0	5,153	0	37,706
DENTSPLY WEST PLANT	0	2,245	0	0	2,245	10,841	0
HONEYWELL	0	4	0	0	4	2,560	60
NORAMCO	0	106	0	0	106	36,220	36,220
VP RACING FUELS	1	0	0	0	0	0	0
METHANOL Total	1	29,270	5	0	29,275	672,848	4,101,230

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FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES			TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND			
METHYL METHACRYLATE							
DENTSPLY WEST PLANT	0	1,424	0	0	1,424	74	0
METHYL METHACRYLATE Total	0	1,424	0	0	1,424	74	0
MOLYBDENUM TRIOXIDE							
DELAWARE CITY REFINERY	0	15	0	0	15	0	0
MOLYBDENUM TRIOXIDE Total	0	15	0	0	15	0	0
N,N-DIMETHYLFORMAMIDE							
AIR LIQUIDE - MEDAL	0	31	0	0	31	23,920	0
ROHM & HAAS B2 B3 B8	0	4,150	0	0	4,150	1,249,584	4,175,261
N,N-DIMETHYLFORMAMIDE Total	0	4,181	0	0	4,181	1,273,504	4,175,261
NAPHTHALENE							
CRODA	0	2	0	0	2	420	0
DELAWARE CITY REFINERY	0	2,164	0	0	2,164	0	11,526
DOVER AFB	0	43	0	0	43	0	0
GRIFFITH ENERGY - CARL KING	1	0	0	0	0	0	0
NAPHTHALENE Total	1	2,209	0	0	2,209	420	11,526
N-BUTYL ALCOHOL							
NORAMCO	0	31	0	0	31	708,266	708,266
N-BUTYL ALCOHOL Total	0	31	0	0	31	708,266	708,266
N-HEXANE							
AIR LIQUIDE - MEDAL	0	25	0	0	25	0	2,394,992
DELAWARE CITY REFINERY	0	20,071	5	0	20,076	0	167,130
N-HEXANE Total	0	20,096	5	0	20,101	0	2,562,122
NICKEL							
DUHADAWAY TOOL & DIE SHOP	0	0	0	0	0	11,349	0
HANDYTUBE	0	0	0	0	0	31,544	0
METAL MASTERS	0	1	0	0	1	58,972	0
NICKEL Total	0	1	0	0	1	101,865	0
NICKEL COMPOUNDS							
BALTIMORE AIRCOIL	0	5	0	0	5	243,821	0
DUPONT EDGE MOOR	0	1	1,080	0	1,081	13,321	0
PRINCE MINERALS	1	0	0	0	0	0	0
NICKEL COMPOUNDS Total	1	6	1,080	0	1,086	257,142	0

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		TO AIR	TO WATER	TO LAND			
NITRATE COMPOUNDS							
ALLEN HARIM FOODS - HARBESON	1	0	0	0	0	0	0
BASF NEWPORT	0	0	0	0	0	27,671	0
DELAWARE CITY REFINERY	0	0	2,742,685	0	2,742,685	0	0
FUJIFILM	1	0	0	0	0	0	0
HANESBRANDS	0	0	0	0	0	58,887	0
PERDUE GEORGETOWN	0	0	168,674	0	168,674	0	0
NITRATE COMPOUNDS Total	2	0	2,911,359	0	2,911,359	86,558	0
NITRIC ACID							
BASF NEWPORT	0	0	0	0	0	0	28,117
SPI PHARMA	1	0	0	0	0	0	0
NITRIC ACID Total	1	0	0	0	0	0	28,117
NITROBENZENE							
ORIENT CORP	0	2	0	0	2	0	0
NITROBENZENE Total	0	2	0	0	2	0	0
N-METHYL-2-PYRROLIDONE							
AIR LIQUIDE - MEDAL	0	1,275	0	0	1,275	152,482	0
BASF NEWPORT	0	0	0	0	0	46,143	11
ROHM & HAAS B5 B6	0	2,131	0	0	2,131	61,095	0
ROHM & HAAS B7 B15	0	766	0	0	766	9,958	0
N-METHYL-2-PYRROLIDONE Total	0	4,172	0	0	4,172	269,678	11
OCTACHLOROSTYRENE							
DUPONT EDGE MOOR	0	0	0	0	0	0	0
OCTACHLOROSTYRENE Total	0	0	0	0	0	0	0
P-CHLOROANILINE							
BASF NEWPORT	0	6	0	0	6	23,468	389
P-CHLOROANILINE Total	0	6	0	0	6	23,468	389
PENTACHLORO BENZENE							
DUPONT EDGE MOOR	0	0	0	0	0	1	0
PENTACHLORO BENZENE Total	0	0	0	0	0	1	0

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		TO AIR	TO WATER	TO LAND			
PERACETIC ACID							
MOUNTAIRE FARMS - SELBYVILLE	0	246	0	0	246	0	64,234
MOUNTAIRE FARMS OF DELAWARE	0	228	0	0	228	0	74,753
NORAMCO	0	10	0	0	10	35,948	0
PERDUE MILFORD	0	0	0	0	0	13	26,184
PERACETIC ACID Total	0	484	0	0	484	35,961	165,171
PHENANTHRENE							
DELAWARE CITY REFINERY	0	1	5	0	6	0	41
PHENANTHRENE Total	0	1	5	0	6	0	41
PHENOL							
DELAWARE CITY REFINERY	0	151	173	0	324	0	315,303
PHENOL Total	0	151	173	0	324	0	315,303
PHOSGENE							
DUPONT EDGE MOOR	0	329	0	0	329	0	165,815
PHOSGENE Total	0	329	0	0	329	0	165,815
POLYCHLORINATED BIPHENYLS							
DUPONT EDGE MOOR	0	0	0	0	0	2	0
POLYCHLORINATED BIPHENYLS Total	0	0	0	0	0	2	0
POLYCYCLIC AROMATIC COMPOUNDS							
DELAWARE CITY REFINERY	0	240	4	0	244	0	389
DUPONT EDGE MOOR	0	70	0	615	684	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	1	0	0
HONEYWELL	0	398	0	0	398	0	0
IKO	0	0	0	0	0	141	545
POLYCYCLIC AROMATIC COMPOUNDS Total	0	709	4	615	1,327	141	934
PROPYLENE							
DELAWARE CITY REFINERY	0	6,529	0	0	6,529	0	0
PROPYLENE Total	0	6,529	0	0	6,529	0	0
PROPYLENE OXIDE							
CRODA	0	582	0	0	582	0	0
PROPYLENE OXIDE Total	0	582	0	0	582	0	0

APPENDIX F

APPENDIX F

2014 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES			TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND			
STYRENE							
DELAWARE CITY REFINERY	0	11	5	0	16	0	1,211
JUSTIN TANKS	0	9,802	0	202	10,004	202	22,680
STYRENE Total	0	9,813	5	202	10,020	202	23,891
SULFURIC ACID							
DELAWARE CITY REFINERY	0	289,749	0	0	289,749	0	0
DUPONT RED LION PLANT	0	6,824	0	0	6,824	0	0
INDIAN RIVER GENERATING STATION	0	1,872	0	0	1,872	0	1,014,437
SULFURIC ACID Total	0	298,445	0	0	298,445	0	1,014,437
TETRACHLOROETHYLENE							
DELAWARE CITY REFINERY	0	5	0	0	5	0	0
TETRACHLOROETHYLENE Total	0	5	0	0	5	0	0
TITANIUM TETRACHLORIDE							
DUPONT EDGE MOOR	0	30	0	0	30	0	1,236,493
TITANIUM TETRACHLORIDE Total	0	30	0	0	30	0	1,236,493
TOLUENE							
AGILENT TECHNOLOGIES	0	37	0	0	37	149,843	0
DELAWARE CITY REFINERY	0	12,310	5	0	12,315	63	224,834
DENTSPLY WEST PLANT	0	408	0	0	408	12,328	0
DUPONT EDGE MOOR	0	85	0	0	85	94	0
NORAMCO	0	104	0	0	104	869,110	869,110
SERVICE ENERGY DOVER	1	0	0	0	0	0	0
VP RACING FUELS	1	0	0	0	0	0	0
TOLUENE Total	2	12,944	5	0	12,949	1,031,438	1,093,944
TOLUENE DIISOCYANATE (MIXED ISOMERS)							
AEARO TECHNOLOGIES	0	5	0	0	5	3,558	0
MACDERMID	1	0	0	0	0	0	0
TOLUENE DIISOCYANATE (MIXED ISOMERS) Total	1	5	0	0	5	3,558	0
TRICHLOROETHYLENE							
HANDYTUBE	0	6,331	0	0	6,331	9,100	0
TRICHLOROETHYLENE Total	0	6,331	0	0	6,331	9,100	0

APPENDIX F

APPENDIX F

2014 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES			TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
		TO AIR	TO WATER	TO LAND			
VANADIUM COMPOUNDS							
DUPONT EDGE MOOR	0	1	121	0	122	150,855	0
VANADIUM COMPOUNDS Total	0	1	121	0	122	150,855	0
VINYL ACETATE							
FORMOSA PLASTICS	0	12,523	0	0	12,523	0	0
VINYL ACETATE Total	0	12,523	0	0	12,523	0	0
VINYL CHLORIDE							
FORMOSA PLASTICS	0	49,262	0	0	49,262	270	289,794
VINYL CHLORIDE Total	0	49,262	0	0	49,262	270	289,794
XYLENE (MIXED ISOMERS)							
BASF NEWPORT	0	931	0	0	931	542	4,333
DELAWARE CITY REFINERY	0	5,125	5	0	5,130	303	220,049
DOVER AFB	0	42	0	0	42	0	0
GRIFFITH ENERGY - CARL KING	1	0	0	0	0	0	0
VP RACING FUELS	1	0	0	0	0	0	0
ROGERS CORP (formerly ARLON)	0	1,960	0	0	1,960	3,300	116,000
XYLENE (MIXED ISOMERS) Total	2	8,058	5	0	8,063	4,145	340,382
ZINC COMPOUNDS							
ALLEN HARIM FARMS - SEAFORD	1	0	0	0	0	0	0
AMICK FARMS	1	0	0	0	0	0	0
DUPONT EDGE MOOR	0	11	130	0	140	29,716	0
HANESBRANDS	0	0	0	0	0	556	0
MOUNTAIRE FARMS - FRANKFORD	1	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	1	0	0	0	0	0	0
ORIENT CORP	0	0	0	0	0	0	0
PERDUE BRIDGEVILLE	1	0	0	0	0	0	0
PPG INDUSTRIES	0	35	0	0	35	5,837	0
V&S DELAWARE GALVANIZING	0	481	118	0	599	175,064	237,553
ZINC COMPOUNDS Total	5	527	248	0	774	211,173	237,553
STATE TOTALS	31	805,127	2,931,067	17,910	3,754,104	12,993,859	497,780,740

APPENDIX F

Source: DNREC 2014 TRI Database, October, 2015

A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX G

2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
1,2,4-TRIMETHYLBENZENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	59,876	59,876
DOVER AFB	0	0	0	0	0	0	0	0	0	0
GAC SEAFORD	0	0	0	0	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING	0	0	0	0	0	0	0	0	0	0
SERVICE ENERGY DOVER	0	0	0	0	0	0	0	0	0	0
1,2,4-TRIMETHYLBENZENE Total	0	0	0	0	0	0	0	0	59,876	59,876
1,3-BUTADIENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
1,3-BUTADIENE Total	0	0	0	0	0	0	0	0	0	0
2,4-DIMETHYLPHENOL										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	242,243	242,243
2,4-DIMETHYLPHENOL Total	0	0	0	0	0	0	0	0	242,243	242,243
4,4'-METHYLENEBIS(2-CHLOROANILINE)										
ROHM & HAAS B5 B6	0	0	0	0	2,206	2,206	0	0	0	0
4,4'-METHYLENEBIS(2-CHLOROANILINE) Total	0	0	0	0	2,206	2,206	0	0	0	0
ACETONITRILE										
AGILENT TECHNOLOGIES	0	0	17,271	0	0	17,271	0	0	0	0
ACETONITRILE Total	0	0	17,271	0	0	17,271	0	0	0	0
AMMONIA										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	15,386,943	65,420	15,452,363
EDGE MOOR/HAY ROAD ENERGY CENTERS	124	0	0	0	0	124	0	0	0	0
FORMOSA PLASTICS	0	0	0	0	0	0	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	201,184	201,184
PICTSWEET BRIDGEVILLE	0	0	0	0	0	0	0	0	0	0
AMMONIA Total	124	0	0	0	0	124	0	15,386,943	266,604	15,653,547
ANILINE										
BASF NEWPORT	27,295	0	3,021	2,549	0	32,865	0	0	1,121	1,121
ORIENT CORP	1,800	0	0	0	72	1,872	1,600,000	0	160,000	1,760,000
ANILINE Total	29,095	0	3,021	2,549	72	34,737	1,600,000	0	161,121	1,761,121
ANTHRACENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
ANTHRACENE Total	0	0	0	0	0	0	0	0	0	0

APPENDIX G

APPENDIX G

2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
ANTIMONY COMPOUNDS										
JOHNSON CONTROLS BATTERY PLANT	0	13,022	0	0	0	13,022	0	0	0	0
ANTIMONY COMPOUNDS Total	0	13,022	0	0	0	13,022	0	0	0	0
ARSENIC COMPOUNDS										
DUPONT EDGE MOOR	0	0	0	0	172	172	0	0	0	0
ARSENIC COMPOUNDS Total	0	0	0	0	172	172	0	0	0	0
ASBESTOS (FRIABLE)										
DELAWARE CITY REFINERY	0	0	0	0	166,240	166,240	0	0	0	0
ASBESTOS (FRIABLE) Total	0	0	0	0	166,240	166,240	0	0	0	0
BARIUM COMPOUNDS										
DUPONT EDGE MOOR	0	0	0	0	7,375	7,375	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	2	2	0	0	0	0
PRINCE MINERALS	0	0	0	0	0	0	0	0	0	0
BARIUM COMPOUNDS Total	0	0	0	0	7,377	7,377	0	0	0	0
BENZENE										
DELAWARE CITY REFINERY	0	29	0	55	0	84	0	279,632	130,409	410,041
BENZENE Total	0	29	0	55	0	84	0	279,632	130,409	410,041
BENZO(G,H,I)PERYLENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	473	473
BENZO(G,H,I)PERYLENE Total	0	0	0	0	0	0	0	0	473	473
BIPHENYL										
BASF NEWPORT	17,076	0	91,223	143,560	0	251,859	0	0	2,321	2,321
BIPHENYL Total	17,076	0	91,223	143,560	0	251,859	0	0	2,321	2,321
BORON TRIFLUORIDE										
HONEYWELL	0	0	0	0	0	0	0	0	131,153	131,153
BORON TRIFLUORIDE Total	0	0	0	0	0	0	0	0	131,153	131,153
CARBON DISULFIDE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	121,701	4,071,435	4,193,136
CARBON DISULFIDE Total	0	0	0	0	0	0	0	121,701	4,071,435	4,193,136
CARBONYL SULFIDE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	72,645	15,054,714	15,127,359
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	0	0
CARBONYL SULFIDE Total	0	0	0	0	0	0	0	72,645	15,054,714	15,127,359

APPENDIX G

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
CERTAIN GLYCOL ETHERS										
CRODA	3,152	0	0	0	0	3,152	0	0	0	0
HIRSH INDUSTRIES	0	0	0	0	0	0	0	0	0	0
PPG INDUSTRIES	904	87	0	0	49	1,040	0	0	0	0
CERTAIN GLYCOL ETHERS Total	4,056	87	0	0	49	4,192	0	0	0	0
CHLORINE										
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	1,982,489	1,982,489
KUEHNE	0	0	0	0	0	0	0	0	0	0
SPI PHARMA	0	0	0	0	0	0	0	0	0	0
CHLORINE Total	0	0	0	0	0	0	0	0	1,982,489	1,982,489
CHROMIUM										
DUHADAWAY TOOL & DIE SHOP	0	12,050	0	0	396	12,446	0	0	0	0
HANDYTUBE	0	28,706	0	0	424	29,130	0	0	0	0
METAL MASTERS	0	184,203	0	0	691	184,894	0	0	0	0
CHROMIUM Total	0	224,959	0	0	1,511	226,470	0	0	0	0
CHROMIUM COMPOUNDS										
BALTIMORE AIRCOIL	0	212,501	0	0	0	212,501	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	142,883	142,883	0	0	0	0
ORIENT CORP	0	0	0	0	0	0	0	0	0	0
CHROMIUM COMPOUNDS Total	0	212,501	0	0	142,883	355,384	0	0	0	0
COBALT COMPOUNDS										
BALTIMORE AIRCOIL	0	26,100	0	0	0	26,100	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	4,390	4,390	0	0	0	0
COBALT COMPOUNDS Total	0	26,100	0	0	4,390	30,490	0	0	0	0
COPPER										
ROGERS CORP (formerly ARLON)	5	1,500	0	0	5	1,510	0	0	0	0
COPPER Total	5	1,500	0	0	5	1,510	0	0	0	0
COPPER COMPOUNDS										
AMICK FARMS	0	0	0	0	0	0	0	0	0	0
BALTIMORE AIRCOIL	0	37,203	0	0	0	37,203	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	0	0	0	0	0	0	0	0	0	0
PERDUE BRIDGEVILLE	0	0	0	0	0	0	0	0	0	0
COPPER COMPOUNDS Total	0	37,203	0	0	0	37,203	0	0	0	0

APPENDIX G

APPENDIX G

2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
CREOSOTE										
DELAWARE CITY REFINERY	0	0	0	0	26,732	26,732	0	0	0	0
CREOSOTE Total	0	0	0	0	26,732	26,732	0	0	0	0
CRESOL (MIXED ISOMERS)										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	21,750	315,717	337,467
CRESOL (MIXED ISOMERS) Total	0	0	0	0	0	0	0	21,750	315,717	337,467
CUMENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	3,606	3,606
DOVER AFB	0	0	0	0	0	0	0	0	0	0
CUMENE Total	0	0	0	0	0	0	0	0	3,606	3,606
CYANIDE COMPOUNDS										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	15,051	15,051
CYANIDE COMPOUNDS Total	0	0	0	0	0	0	0	0	15,051	15,051
CYCLOHEXANE										
AIR LIQUIDE - MEDAL	0	0	19,720	0	0	19,720	0	0	0	0
BASF NEWPORT	0	34,770	0	0	0	34,770	0	0	3,452	3,452
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	7,372	7,372
CYCLOHEXANE Total	0	34,770	19,720	0	0	54,490	0	0	10,824	10,824
DICHLOROMETHANE										
NORAMCO	585	0	57,923	0	0	58,508	0	0	58,508	58,508
DICHLOROMETHANE Total	585	0	57,923	0	0	58,508	0	0	58,508	58,508
DIETHANOLAMINE										
CRODA	23	0	0	0	0	23	0	0	0	0
DIETHANOLAMINE Total	23	0	0	0	0	23	0	0	0	0
DIISOCYANATES										
AEARO TECHNOLOGIES	0	0	0	12,248	0	12,248	0	0	0	0
MACDERMID	0	0	0	0	0	0	0	0	0	0
ROHM & HAAS B2 B3 B8	0	0	0	6,881	0	6,881	0	0	0	0
ROHM & HAAS B5 B6	0	0	0	17,221	0	17,221	0	0	0	0
ROHM & HAAS B7 B15	0	0	0	11,878	0	11,878	0	0	0	0
DIISOCYANATES Total	0	0	0	48,228	0	48,228	0	0	0	0

APPENDIX G

APPENDIX G

2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
DIOXIN AND DIOXIN-LIKE COMPOUNDS										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0	0	0	0
FORMOSA PLASTICS	0	0	0	0	0	0	0	0	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS Total	0	0	0	0	0	0	0	0	0	0
ETHYLBENZENE										
DELAWARE CITY REFINERY	0	48	0	11	0	59	0	0	52,457	52,457
DOVER AFB	0	0	0	0	0	0	0	0	0	0
ROGERS CORP (formerly ARLON)	0	0	0	750	0	750	0	0	29,000	29,000
ETHYLBENZENE Total	0	48	0	761	0	809	0	0	81,457	81,457
ETHYLENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
ETHYLENE Total	0	0	0	0	0	0	0	0	0	0
ETHYLENE GLYCOL										
NORAMCO	0	0	0	3,600	0	3,600	0	0	0	0
PPG INDUSTRIES	4,097	69	0	0	1,095	5,261	0	0	0	0
ETHYLENE GLYCOL Total	4,097	69	0	3,600	1,095	8,861	0	0	0	0
ETHYLENE OXIDE										
CRODA	0	0	0	0	0	0	0	0	0	0
ETHYLENE OXIDE Total	0	0	0	0	0	0	0	0	0	0
FORMIC ACID										
NORAMCO	25,320	0	0	0	0	25,320	0	0	0	0
FORMIC ACID Total	25,320	0	0	0	0	25,320	0	0	0	0
HEXACHLOROBENZENE										
DUPONT EDGE MOOR	0	0	0	0	12	12	0	0	0	0
HEXACHLOROBENZENE Total	0	0	0	0	12	12	0	0	0	0
HYDRAZINE										
DUPONT RED LION PLANT	0	0	0	0	0	0	0	0	0	0
HYDRAZINE Total	0	0	0	0	0	0	0	0	0	0
HYDRAZINE SULFATE										
DUPONT RED LION PLANT	0	0	0	0	0	0	0	0	0	0
HYDRAZINE SULFATE Total	0	0	0	0	0	0	0	0	0	0

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
HYDROCHLORIC ACID										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	87,917	87,917
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	6,635,842	6,635,842
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	562,719	562,719
HYDROCHLORIC ACID Total	0	0	0	0	0	0	0	0	7,286,478	7,286,478
HYDROGEN CYANIDE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	298,734	298,734
HYDROGEN CYANIDE Total	0	0	0	0	0	0	0	0	298,734	298,734
HYDROGEN FLUORIDE										
HONEYWELL	0	0	0	0	10	10	0	0	98	98
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	58,079	58,079
HYDROGEN FLUORIDE Total	0	0	0	0	10	10	0	0	58,177	58,177
HYDROGEN SULFIDE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	433,409,006	433,409,006
DUPONT RED LION PLANT	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	0	0	0	0	0	0	0	0	102,668	102,668
PERDUE GEORGETOWN	0	0	0	0	0	0	0	0	82,300	82,300
HYDROGEN SULFIDE Total	0	0	0	0	0	0	0	0	433,593,974	433,593,974
LEAD										
HMA - HERITAGE CONCRETE BEAR	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE CHESWOLD	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE HEALD STREET	0	0	0	0	0	0	0	0	0	0
V&S DELAWARE GALVANIZING	0	4,089	0	0	271	4,360	2,025	0	0	2,025
LEAD Total	0	4,089	0	0	271	4,360	2,025	0	0	2,025
LEAD COMPOUNDS										
DELAWARE CITY REFINERY	0	5	0	0	35	41	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	13,462	13,462	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	0	0
JOHNSON CONTROLS BATTERY PLANT	1	3,319,543	0	0	21,411	3,340,955	0	0	0	0
JOHNSON CONTROLS DISTRIBUTION CENTER	1	1,671,198	0	0	0	1,671,199	0	0	0	0
VP RACING FUELS	0	0	0	0	1	1	0	0	0	0
LEAD COMPOUNDS Total	3	4,990,746	0	0	34,910	5,025,659	0	0	0	0

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
MANGANESE										
COLOR WORKS PAINTING	0	997	0	0	0	997	0	0	0	0
HANDYTUBE	0	2,907	0	0	38	2,945	0	0	0	0
MANGANESE Total	0	3,904	0	0	38	3,942	0	0	0	0
MANGANESE COMPOUNDS										
ALLEN HARIM FARMS - SEAFORD	0	0	0	0	0	0	0	0	0	0
AMICK FARMS	0	0	0	0	0	0	0	0	0	0
BALTIMORE AIRCOIL	0	105,317	0	0	0	105,317	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	1,641,568	1,641,568	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	0	0	0	0	0	0	0	0	0	0
PERDUE BRIDGEVILLE	0	0	0	0	0	0	0	0	0	0
PRINCE MINERALS	0	0	0	0	0	0	0	0	0	0
MANGANESE COMPOUNDS Total	0	105,317	0	0	1,641,568	1,746,885	0	0	0	0
MERCURY										
DENTSPLY MAIN PLANT	0	1,003	0	0	0	1,003	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0	0	0	0
MERCURY Total	0	1,003	0	0	0	1,003	0	0	0	0
MERCURY COMPOUNDS										
DELAWARE CITY REFINERY	0	1	0	0	0	1	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	1	1	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	0	0
INTERVET	0	0	0	0	1	1	0	0	0	0
MERCURY COMPOUNDS Total	0	1	0	0	2	3	0	0	0	0
METHANOL										
AGILENT TECHNOLOGIES	0	0	38,665	112	0	38,777	0	0	0	0
AIR LIQUIDE - MEDAL	0	0	0	83,791	0	83,791	2,878,874	0	0	2,878,874
BASF NEWPORT	358,135	139,043	3,481	0	0	500,659	324,750	0	823,620	1,148,370
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	37,706	37,706
DENTSPLY WEST PLANT	106	0	10,735	0	0	10,841	0	0	0	0
HONEYWELL	0	0	2,560	0	0	2,560	0	0	60	60
NORAMCO	1,811	0	34,409	0	0	36,220	0	0	36,220	36,220
VP RACING FUELS	0	0	0	0	0	0	0	0	0	0
METHANOL Total	360,052	139,043	89,850	83,903	0	672,848	3,203,624	0	897,606	4,101,230

APPENDIX G

APPENDIX G

2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
METHYL METHACRYLATE										
DENTSPLY WEST PLANT	74	0	0	0	0	74	0	0	0	0
METHYL METHACRYLATE Total	74	0	0	0	0	74	0	0	0	0
MOLYBDENUM TRIOXIDE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
MOLYBDENUM TRIOXIDE Total	0	0	0	0	0	0	0	0	0	0
N,N-DIMETHYLFORMAMIDE										
AIR LIQUIDE - MEDAL	18,000	0	5,920	0	0	23,920	0	0	0	0
ROHM & HAAS B2 B3 B8	149,942	1,007,656	0	0	91,986	1,249,584	4,174,687	0	574	4,175,261
N,N-DIMETHYLFORMAMIDE Total	167,942	1,007,656	5,920	0	91,986	1,273,504	4,174,687	0	574	4,175,261
NAPHTHALENE										
CRODA	0	0	0	420	0	420	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	11,526	11,526
DOVER AFB	0	0	0	0	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE Total	0	0	0	420	0	420	0	0	11,526	11,526
N-BUTYL ALCOHOL										
NORAMCO	35,413	0	672,853	0	0	708,266	0	0	708,266	708,266
N-BUTYL ALCOHOL Total	35,413	0	672,853	0	0	708,266	0	0	708,266	708,266
N-HEXANE										
AIR LIQUIDE - MEDAL	0	0	0	0	0	0	2,394,992	0	0	2,394,992
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	167,130	167,130
N-HEXANE Total	0	0	0	0	0	0	2,394,992	0	167,130	2,562,122
NICKEL										
DUHADAWAY TOOL & DIE SHOP	0	10,954	0	0	395	11,349	0	0	0	0
HANDYTUBE	0	30,887	0	0	657	31,544	0	0	0	0
METAL MASTERS	0	58,761	0	0	211	58,972	0	0	0	0
NICKEL Total	0	100,602	0	0	1,263	101,865	0	0	0	0
NICKEL COMPOUNDS										
BALTIMORE AIRCOIL	0	243,821	0	0	0	243,821	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	13,321	13,321	0	0	0	0
PRINCE MINERALS	0	0	0	0	0	0	0	0	0	0
NICKEL COMPOUNDS Total	0	243,821	0	0	13,321	257,142	0	0	0	0

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
NITRATE COMPOUNDS										
ALLEN HARIM FOODS - HARBESON	0	0	0	0	0	0	0	0	0	0
BASF NEWPORT	27,671	0	0	0	0	27,671	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
FUJIFILM	0	0	0	0	0	0	0	0	0	0
HANESBRANDS	58,887	0	0	0	0	58,887	0	0	0	0
PERDUE GEORGETOWN	0	0	0	0	0	0	0	0	0	0
NITRATE COMPOUNDS Total	86,558	0	0	0	0	86,558	0	0	0	0
NITRIC ACID										
BASF NEWPORT	0	0	0	0	0	0	0	0	28,117	28,117
SPI PHARMA	0	0	0	0	0	0	0	0	0	0
NITRIC ACID Total	0	0	0	0	0	0	0	0	28,117	28,117
NITROBENZENE										
ORIENT CORP	0	0	0	0	0	0	0	0	0	0
NITROBENZENE Total	0	0	0	0	0	0	0	0	0	0
N-METHYL-2-PYRROLIDONE										
AIR LIQUIDE - MEDAL	136,802	0	15,680	0	0	152,482	0	0	0	0
BASF NEWPORT	14,692	31,451	0	0	0	46,143	0	0	11	11
ROHM & HAAS B5 B6	0	58,620	0	2,475	0	61,095	0	0	0	0
ROHM & HAAS B7 B15	0	9,500	0	458	0	9,958	0	0	0	0
N-METHYL-2-PYRROLIDONE Total	151,494	99,571	15,680	2,933	0	269,678	0	0	11	11
OCTACHLOROSTYRENE										
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	0	0
OCTACHLOROSTYRENE Total	0	0	0	0	0	0	0	0	0	0
P-CHLOROANILINE										
BASF NEWPORT	2,987	0	9,286	11,195	0	23,468	0	0	389	389
P-CHLOROANILINE Total	2,987	0	9,286	11,195	0	23,468	0	0	389	389
PENTACHLOROBENZENE										
DUPONT EDGE MOOR	0	0	0	0	1	1	0	0	0	0
PENTACHLOROBENZENE Total	0	0	0	0	1	1	0	0	0	0

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
PERACETIC ACID										
MOUNTAIRE FARMS - SELBYVILLE	0	0	0	0	0	0	0	0	64,234	64,234
MOUNTAIRE FARMS OF DELAWARE	0	0	0	0	0	0	0	0	74,753	74,753
NORAMCO	35,948	0	0	0	0	35,948	0	0	0	0
PERDUE MILFORD	13	0	0	0	0	13	0	0	26,184	26,184
PERACETIC ACID Total	35,961	0	0	0	0	35,961	0	0	165,171	165,171
PHENANTHRENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	41	41
PHENANTHRENE Total	0	0	0	0	0	0	0	0	41	41
PHENOL										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	48,299	267,004	315,303
PHENOL Total	0	0	0	0	0	0	0	48,299	267,004	315,303
PHOSGENE										
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	165,815	165,815
PHOSGENE Total	0	0	0	0	0	0	0	0	165,815	165,815
POLYCHLORINATED BIPHENYLS										
DUPONT EDGE MOOR	0	0	0	0	2	2	0	0	0	0
POLYCHLORINATED BIPHENYLS Total	0	0	0	0	2	2	0	0	0	0
POLYCYCLIC AROMATIC COMPOUNDS										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	389	389
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0	0	0	0
HONEYWELL	0	0	0	0	0	0	0	0	0	0
IKO	0	140	0	0	1	141	545	0	0	545
POLYCYCLIC AROMATIC COMPOUNDS Total	0	140	0	0	1	141	545	0	389	934
PROPYLENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
PROPYLENE Total	0	0	0	0	0	0	0	0	0	0
PROPYLENE OXIDE										
CRODA	0	0	0	0	0	0	0	0	0	0
PROPYLENE OXIDE Total	0	0	0	0	0	0	0	0	0	0

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2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
STYRENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	1,211	1,211
JUSTIN TANKS	0	0	0	202	0	202	22,680	0	0	22,680
STYRENE Total	0	0	0	202	0	202	22,680	0	1,211	23,891
SULFURIC ACID										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
DUPONT RED LION PLANT	0	0	0	0	0	0	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	1,014,437	1,014,437
SULFURIC ACID Total	0	0	0	0	0	0	0	0	1,014,437	1,014,437
TETRACHLOROETHYLENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
TETRACHLOROETHYLENE Total	0	0	0	0	0	0	0	0	0	0
TITANIUM TETRACHLORIDE										
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	1,236,493	1,236,493
TITANIUM TETRACHLORIDE Total	0	0	0	0	0	0	0	0	1,236,493	1,236,493
TOLUENE										
AGILENT TECHNOLOGIES	0	0	149,733	110	0	149,843	0	0	0	0
DELAWARE CITY REFINERY	0	28	0	35	0	63	0	0	224,834	224,834
DENTSPLY WEST PLANT	0	0	12,328	0	0	12,328	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	94	94	0	0	0	0
NORAMCO	8,691	0	860,419	0	0	869,110	0	0	869,110	869,110
SERVICE ENERGY DOVER	0	0	0	0	0	0	0	0	0	0
VP RACING FUELS	0	0	0	0	0	0	0	0	0	0
TOLUENE Total	8,691	28	1,022,480	145	94	1,031,438	0	0	1,093,944	1,093,944
TOLUENE DIISOCYANATE (MIXED ISOMERS)										
AEARO TECHNOLOGIES	0	0	0	3,558	0	3,558	0	0	0	0
MACDERMID	0	0	0	0	0	0	0	0	0	0
TOLUENE DIISOCYANATE (MIXED ISOMERS) Total	0	0	0	3,558	0	3,558	0	0	0	0
TRICHLOROETHYLENE										
HANDYTUBE	0	0	0	9,100	0	9,100	0	0	0	0
TRICHLOROETHYLENE Total	0	0	0	9,100	0	9,100	0	0	0	0

APPENDIX G

APPENDIX G

2014 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

CHEMICAL/FACILITY	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
VANADIUM COMPOUNDS										
DUPONT EDGE MOOR	0	0	0	0	150,855	150,855	0	0	0	0
VANADIUM COMPOUNDS Total	0	0	0	0	150,855	150,855	0	0	0	0
VINYL ACETATE										
FORMOSA PLASTICS	0	0	0	0	0	0	0	0	0	0
VINYL ACETATE Total	0	0	0	0	0	0	0	0	0	0
VINYL CHLORIDE										
FORMOSA PLASTICS	0	226	0	0	44	270	0	0	289,794	289,794
VINYL CHLORIDE Total	0	226	0	0	44	270	0	0	289,794	289,794
XYLENE (MIXED ISOMERS)										
BASF NEWPORT	214	0	328	0	0	542	0	0	4,333	4,333
DELAWARE CITY REFINERY	0	244	0	58	2	303	0	0	220,049	220,049
DOVER AFB	0	0	0	0	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING	0	0	0	0	0	0	0	0	0	0
VP RACING FUELS	0	0	0	0	0	0	0	0	0	0
ROGERS CORP (formerly ARLON)	0	0	0	3,300	0	3,300	0	0	116,000	116,000
XYLENE (MIXED ISOMERS) Total	214	244	328	3,358	2	4,145	0	0	340,382	340,382
ZINC COMPOUNDS										
ALLEN HARIM FARMS - SEAFORD	0	0	0	0	0	0	0	0	0	0
AMICK FARMS	0	0	0	0	0	0	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	29,716	29,716	0	0	0	0
HANESBRANDS	553	0	0	0	3	556	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	0	0	0	0	0	0	0	0	0	0
ORIENT CORP	0	0	0	0	0	0	0	0	0	0
PERDUE BRIDGEVILLE	0	0	0	0	0	0	0	0	0	0
PPG INDUSTRIES	3,702	0	0	561	1,574	5,837	0	0	0	0
V&S DELAWARE GALVANIZING	0	137,419	0	0	37,645	175,064	237,553	0	0	237,553
ZINC COMPOUNDS Total	4,255	137,419	0	561	68,939	211,173	237,553	0	0	237,553
STATE TOTALS	934,025	7,384,097	2,005,555	314,129	2,356,053	12,993,859	11,636,106	15,930,970	470,213,664	497,780,740

APPENDIX G

APPENDIX H

2014 ON-SITE RELEASE SUMMARY BY CHEMICAL

CHEMICAL - RANKED BY TOTAL ON-SITE RELEASE	ON-SITE RELEASES			TOTAL	TRANSFERS OFF-SITE	ON-SITE WASTE MGMT.
	TO AIR	TO WATER	TO LAND			
NITRATE COMPOUNDS	0	2,911,359	0	2,911,359	86,558	0
SULFURIC ACID	298,445	0	0	298,445	0	1,014,437
CARBONYL SULFIDE	225,270	0	0	225,270	0	15,127,359
VINYL CHLORIDE	49,262	0	0	49,262	270	289,794
AMMONIA	34,748	4,685	0	39,433	124	15,653,547
METHANOL	29,270	5	0	29,275	672,848	4,101,230
HYDROGEN SULFIDE	28,932	1	0	28,932	0	433,593,974
N-HEXANE	20,096	5	0	20,101	0	2,562,122
BARIIUM COMPOUNDS	79	3,291	13,662	17,031	7,377	0
TOLUENE	12,944	5	0	12,949	1,031,438	1,093,944
VINYL ACETATE	12,523	0	0	12,523	0	0
STYRENE	9,813	5	202	10,020	202	23,891
MANGANESE COMPOUNDS	249	8,942	0	9,191	1,746,885	0
ETHYLENE	8,135	0	0	8,135	0	0
XYLENE (MIXED ISOMERS)	8,058	5	0	8,063	4,145	340,382
BENZENE	7,213	11	0	7,224	84	410,041
CERTAIN GLYCOL ETHERS	7,065	0	0	7,065	4,192	0
PROPYLENE	6,529	0	0	6,529	0	0
TRICHLOROETHYLENE	6,331	0	0	6,331	9,100	0
HYDROCHLORIC ACID	4,516	0	0	4,516	0	7,286,478
N,N-DIMETHYLFORMAMIDE	4,181	0	0	4,181	1,273,504	4,175,261
N-METHYL-2-PYRROLIDONE	4,172	0	0	4,172	269,678	11
CUMENE	3,029	5	0	3,034	0	3,606
CYCLOHEXANE	2,787	5	0	2,792	54,490	10,824
CHLORINE	2,754	0	0	2,754	0	1,982,489
ETHYLENE OXIDE	2,688	0	0	2,688	0	0
CREOSOTE	398	0	2,253	2,651	26,732	0
ETHYLBENZENE	2,449	5	0	2,454	809	81,457
NAPHTHALENE	2,209	0	0	2,209	420	11,526
METHYL METHACRYLATE	1,424	0	0	1,424	74	0
LEAD COMPOUNDS	250	90	1,061	1,401	5,025,659	0
POLYCYCLIC AROMATIC COMPOUNDS	709	4	615	1,327	141	934
HYDROGEN FLUORIDE	1,327	0	0	1,327	10	58,177
1,2,4-TRIMETHYLBENZENE	1,297	5	0	1,302	0	59,876
CARBON DISULFIDE	1,229	0	0	1,229	0	4,193,136
NICKEL COMPOUNDS	6	1,080	0	1,086	257,142	0
HYDROGEN CYANIDE	724	212	0	936	0	298,734
ZINC COMPOUNDS	527	248	0	774	211,173	237,553
PROPYLENE OXIDE	582	0	0	582	0	0
1,3-BUTADIENE	581	0	0	581	0	0
PERACETIC ACID	484	0	0	484	35,961	165,171
BORON TRIFLUORIDE	435	0	0	435	0	131,153
DICHLOROMETHANE	428	0	0	428	58,508	58,508
CRESOL (MIXED ISOMERS)	0	345	0	345	0	337,467
PHOSGENE	329	0	0	329	0	165,815
PHENOL	151	173	0	324	0	315,303
2,4-DIMETHYLPHENOL	0	173	0	173	0	242,243
CYANIDE COMPOUNDS	0	152	0	152	0	15,051
MERCURY COMPOUNDS	59	2	81	142	3	0
VANADIUM COMPOUNDS	1	121	0	122	150,855	0
ANILINE	97	0	0	97	34,737	1,761,121

APPENDIX H

2014 ON-SITE RELEASE SUMMARY BY CHEMICAL

CHEMICAL - RANKED BY TOTAL ON-SITE RELEASE	ON-SITE RELEASES			TOTAL	TRANSFERS OFF-SITE	ON-SITE WASTE MGMT.
	TO AIR	TO WATER	TO LAND			
BIPHENYL	90	0	0	90	251,859	2,321
ACETONITRILE	71	0	0	71	17,271	0
ARSENIC COMPOUNDS	0	61	0	61	172	0
LEAD	8	7	37	52	4,360	2,025
CHROMIUM COMPOUNDS	6	36	0	42	355,384	0
N-BUTYL ALCOHOL	31	0	0	31	708,266	708,266
TITANIUM TETRACHLORIDE	30	0	0	30	0	1,236,493
MERCURY	20	0	0	19.62	1,003	0
ANTHRACENE	10	5	0	15	0	0
MOLYBDENUM TRIOXIDE	15	0	0	15	0	0
COBALT COMPOUNDS	0	15	0	15	30,490	0
FORMIC ACID	11	0	0	11	25,320	0
ETHYLENE GLYCOL	10	0	0	10	8,861	0
COPPER	10	0	0	10	1,510	0
DIISOCYANATES	7	0	0	7	48,228	0
PHENANTHRENE	1	5	0	6	0	41
P-CHLOROANILINE	6	0	0	6	23,468	389
TOLUENE DIISOCYANATE (MIXED ISOMERS)	5	0	0	5	3,558	0
TETRACHLOROETHYLENE	5	0	0	5	0	0
BENZO(G,H,I)PERYLENE	0	5	0	5	0	473
DIETHANOLAMINE	4	0	0	4	23	0
NITROBENZENE	2	0	0	2	0	0
NICKEL	1	0	0	1	101,865	0
CHROMIUM	1	0	0	1	226,470	0
OCTACHLOROSTYRENE	0.0006	0.3830	0.0000	0.3836	0.3	0
PENTACHLOROBENZENE	0.1011	0.2190	0.0000	0.3201	0.7	0
HEXACHLOROBENZENE	0.0909	0.0480	0.0000	0.1389	12	0
4,4'-METHYLENEBIS(2-CHLOROANILINE)	0	0	0	0	2,206	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0.0081	0.0187	0.0000	0.0269	0.3	0
POLYCHLORINATED BIPHENYLS	0.0050	0.0049	0.0000	0.0099	2.2	0
HYDRAZINE SULFATE	0	0	0	0	0	0
ASBESTOS (FRIABLE)	0	0	0	0	166,240	0
NITRIC ACID	0	0	0	0	0	28,117
ANTIMONY COMPOUNDS	0	0	0	0	13,022	0
HYDRAZINE	0	0	0	0	0	0
COPPER COMPOUNDS	0	0	0	0	37,203	0
MANGANESE	0	0	0	0	3,942	0
STATE TOTALS	805,127	2,931,067	17,910	3,754,104	12,993,859	497,780,740

APPENDIX I

2014 PBT RELEASE AND TRANSFER DETAIL

PBT CHEMICAL / FACILITY	ON-SITE RELEASES				TRANSFERS	ON-SITE
	AIR	WATER	LAND	TOTAL	OFF SITE	WASTE MGMT.
BENZO(G,H,I)PERYLENE						
DELAWARE CITY REFINERY	0.00	5.00	0.00	5.00	0.00	473.00
BENZO(G,H,I)PERYLENE Total	0.00	5.00	0.00	5.00	0.00	473.00
DIOXIN AND DIOXIN-LIKE COMPOUNDS						
DELAWARE CITY REFINERY	0.00	0.00	0.00	0.00	0.00	0.00
DUPONT EDGE MOOR	0.00	0.02	0.00	0.02	0.30	0.00
EDGE MOOR/HAY ROAD ENERGY CENTERS	0.01	0.00	0.00	0.01	0.00	0.00
FORMOSA PLASTICS	0.00	0.00	0.00	0.00	0.00	0.00
DIOXIN AND DIOXIN-LIKE COMPOUNDS Total	0.008148	0.018742	0.000000	0.026889	0.2998	0.001281
HEXACHLOROBENZENE						
DUPONT EDGE MOOR	0.09	0.05	0.00	0.14	12.29	0.00
HEXACHLOROBENZENE Total	0.09	0.05	0.00	0.14	12.29	0.00
LEAD						
HMA - HERITAGE CONCRETE BEAR	0.00	0.00	8.92	8.92	0.00	0.00
HMA - HERITAGE CONCRETE CHESWOLD	0.00	0.00	8.56	8.56	0.00	0.00
HMA - HERITAGE CONCRETE HEALD STREET	0.00	0.00	19.41	19.41	0.00	0.00
V&S DELAWARE GALVANIZING	7.90	6.80	0.00	14.70	4,360.40	2,025.00
LEAD Total	7.91	6.80	36.89	51.60	4,360.40	2,025.00
LEAD COMPOUNDS						
DELAWARE CITY REFINERY	104.00	2.50	0.00	106.50	40.63	0.00
DUPONT EDGE MOOR	0.00	78.14	0.00	78.14	13,462.45	0.00
INDIAN RIVER GENERATING STATION	25.61	0.00	1,061.30	1,086.91	0.00	0.00
JOHNSON CONTROLS BATTERY PLANT	119.50	9.40	0.00	128.90	3,340,955.40	0.00
JOHNSON CONTROLS DISTRIBUTION CENTER	0.00	0.00	0.00	0.00	1,671,199.45	0.00
VP RACING FUELS	1.00	0.00	0.00	1.00	1.00	0.00
LEAD COMPOUNDS Total	250.11	90.04	1,061.30	1,401.45	5,025,658.93	0.00
MERCURY						
DENTSPLY MAIN PLANT	0.31	0.00	0.00	0.31	1,002.60	0.00
EDGE MOOR/HAY ROAD ENERGY CENTERS	19.30	0.01	0.00	19.31	0.12	0.00
MERCURY Total	19.61	0.01	0.00	19.62	1,002.72	0.00
MERCURY COMPOUNDS						
DELAWARE CITY REFINERY	56.00	1.60	0.00	57.60	1.05	0.00
DUPONT EDGE MOOR	1.15	0.01	0.00	1.16	1.42	0.00
INDIAN RIVER GENERATING STATION	2.10	0.00	80.70	82.80	0.00	0.00
INTERVET	0.00	0.00	0.00	0.00	0.57	0.00
MERCURY COMPOUNDS Total	59.25	1.61	80.70	141.56	3.04	0.00
OCTACHLOROSTYRENE						
DUPONT EDGE MOOR	0.00	0.38	0.00	0.38	0.25	0.00
OCTACHLOROSTYRENE Total	0.00	0.38	0.00	0.38	0.25	0.00
PENTACHLOROBENZENE						
DUPONT EDGE MOOR	0.10	0.22	0.00	0.32	0.65	0.00
PENTACHLOROBENZENE Total	0.10	0.22	0.00	0.32	0.65	0.00

APPENDIX I

2014 PBT RELEASE AND TRANSFER DETAIL

PBT CHEMICAL / FACILITY	ON-SITE RELEASES				TRANSFERS	ON-SITE
	AIR	WATER	LAND	TOTAL	OFF SITE	WASTE MGMT.
POLYCHLORINATED BIPHENYLS						
DUPONT EDGE MOOR	0.00	0.00	0.00	0.01	2.20	0.00
POLYCHLORINATED BIPHENYLS Total	0.00	0.00	0.00	0.01	2.20	0.00
POLYCYCLIC AROMATIC COMPOUNDS						
DELAWARE CITY REFINERY	240.00	3.90	0.00	243.90	0.00	389.00
DUPONT EDGE MOOR	69.82	0.00	614.56	684.37	0.00	0.00
EDGE MOOR/HAY ROAD ENERGY CENTERS	0.40	0.18	0.00	0.58	0.00	0.00
HONEYWELL	398.00	0.00	0.00	398.00	0.00	0.00
IKO	0.37	0.00	0.00	0.37	141.20	545.30
POLYCYCLIC AROMATIC COMPOUNDS Total	708.59	4.08	614.56	1,327.22	141.20	934.30
STATE PBT TOTALS	1,045.67	108.21	1,793.45	2,947.33	5,031,181.98	3,432.30

APPENDIX J

2014 CARCINOGEN RELEASE AND TRANSFER DETAIL

CARCINOGEN / FACILITY	TOTAL ON-SITE RELEASES				TRANSFERS	ON-SITE
	AIR	WATER	LAND	TOTAL	OFF SITE	WASTE MGMT.
1,3-BUTADIENE						
DELAWARE CITY REFINERY	581.00	0.00	0.00	581.00	0.00	0.00
1,3-BUTADIENE Total	581.00	0.00	0.00	581.00	0.00	0.00
4,4'-METHYLENEBIS(2-CHLOROANILINE)						
ROHM & HAAS B5 B6	0.04	0.00	0.00	0.04	2,206.00	0.00
4,4'-METHYLENEBIS(2-CHLOROANILINE) Total	0.04	0.00	0.00	0.04	2,206.00	0.00
ARSENIC COMPOUNDS						
DUPONT EDGE MOOR	0.08	60.59	0.00	60.66	172.27	0.00
ARSENIC COMPOUNDS Total	0.08	60.59	0.00	60.66	172.27	0.00
ASBESTOS (FRIABLE)						
DELAWARE CITY REFINERY	0.00	0.00	0.00	0.00	166,240.00	0.00
ASBESTOS (FRIABLE) Total	0.00	0.00	0.00	0.00	166,240.00	0.00
BENZENE						
DELAWARE CITY REFINERY	7,213.00	11.00	0.00	7,224.00	84.22	410,041.00
BENZENE Total	7,213.00	11.00	0.00	7,224.00	84.22	410,041.00
CHROMIUM COMPOUNDS						
BALTIMORE AIRCOIL	5.00	0.00	0.00	5.00	212,501.00	0.00
DUPONT EDGE MOOR	0.51	36.18	0.00	36.69	142,883.40	0.00
ORIENT CORP	0.00	0.00	0.00	0.00	0.00	0.00
CHROMIUM COMPOUNDS Total	5.51	36.18	0.00	41.69	355,384.40	0.00
COBALT COMPOUNDS						
BALTIMORE AIRCOIL	0.00	0.00	0.00	0.00	26,100.00	0.00
DUPONT EDGE MOOR	0.05	14.77	0.00	14.82	4,389.95	0.00
COBALT COMPOUNDS Total	0.05	14.77	0.00	14.82	30,489.95	0.00
CREOSOTE						
DELAWARE CITY REFINERY	398.00	0.00	2,253.00	2,651.00	26,732.00	0.00
CREOSOTE Total	398.00	0.00	2,253.00	2,651.00	26,732.00	0.00
DICHLOROMETHANE						
NORAMCO	428.00	0.00	0.00	428.00	58,508.00	58,508.00
DICHLOROMETHANE Total	428.00	0.00	0.00	428.00	58,508.00	58,508.00
ETHYLBENZENE						
DELAWARE CITY REFINERY	1,909.00	5.00	0.00	1,914.00	59.33	52,457.00
DOVER AFB	40.00	0.00	0.00	40.00	0.00	0.00
ROGERS CORP (formerly ARLON)	500.00	0.00	0.00	500.00	750.00	29,000.00
ETHYLBENZENE Total	2,449.00	5.00	0.00	2,454.00	809.33	81,457.00
ETHYLENE OXIDE						
CRODA	2,688.10	0.00	0.00	2,688.10	0.00	0.00
ETHYLENE OXIDE Total	2,688.10	0.00	0.00	2,688.10	0.00	0.00
HEXACHLORO BENZENE						
DUPONT EDGE MOOR	0.09	0.05	0.00	0.14	12.29	0.00
HEXACHLORO BENZENE Total	0.09	0.05	0.00	0.14	12.29	0.00
HYDRAZINE						
DUPONT RED LION PLANT	0.00	0.00	0.00	0.00	0.00	0.00
HYDRAZINE Total	0.00	0.00	0.00	0.00	0.00	0.00
HYDRAZINE SULFATE						
DUPONT RED LION PLANT	0.00	0.00	0.00	0.00	0.00	0.00
HYDRAZINE SULFATE Total	0.00	0.00	0.00	0.00	0.00	0.00
LEAD						
HMA - HERITAGE CONCRETE BEAR	0.00	0.00	8.92	8.92	0.00	0.00
HMA - HERITAGE CONCRETE CHESWOLD	0.00	0.00	8.56	8.56	0.00	0.00
HMA - HERITAGE CONCRETE HEALD STREET	0.00	0.00	19.41	19.41	0.00	0.00
V&S DELAWARE GALVANIZING	7.90	6.80	0.00	14.70	4,360.40	2,025.00
LEAD Total	7.91	6.80	36.89	51.60	4,360.40	2,025.00
LEAD COMPOUNDS						
DELAWARE CITY REFINERY	104.00	2.50	0.00	106.50	40.63	0.00
DUPONT EDGE MOOR	0.00	78.14	0.00	78.14	13,462.45	0.00
INDIAN RIVER GENERATING STATION	25.61	0.00	1,061.30	1,086.91	0.00	0.00
JOHNSON CONTROLS BATTERY PLANT	119.50	9.40	0.00	128.90	3,340,955.40	0.00
JOHNSON CONTROLS DISTRIBUTION CENTER	0.00	0.00	0.00	0.00	1,671,199.45	0.00
VP RACING FUELS	1.00	0.00	0.00	1.00	1.00	0.00
LEAD COMPOUNDS Total	250.11	90.04	1,061.30	1,401.45	5,025,658.93	0.00

APPENDIX J

2014 CARCINOGEN RELEASE AND TRANSFER DETAIL

CARCINOGEN / FACILITY	TOTAL ON-SITE RELEASES				TRANSFERS	ON-SITE
	AIR	WATER	LAND	TOTAL	OFF SITE	WASTE MGMT.
NAPHTHALENE						
CRODA	2.00	0.00	0.00	2.00	420.00	0.00
DELAWARE CITY REFINERY	2,164.00	0.00	0.00	2,164.00	0.00	11,526.00
DOVER AFB	43.00	0.00	0.00	43.00	0.00	0.00
GRIFFITH ENERGY - CARL KING	0.00	0.00	0.00	0.00	0.00	0.00
NAPHTHALENE Total	2,209.00	0.00	0.00	2,209.00	420.00	11,526.00
NICKEL						
DUHADAWAY TOOL & DIE SHOP	0.00	0.00	0.00	0.00	11,349.00	0.00
HANDYTUBE	0.00	0.00	0.00	0.00	31,544.00	0.00
METAL MASTERS	0.50	0.00	0.00	0.50	58,972.00	0.00
NICKEL Total	0.50	0.00	0.00	0.50	101,865.00	0.00
NICKEL COMPOUNDS						
BALTIMORE AIRCOIL	5.00	0.00	0.00	5.00	243,821.00	0.00
DUPONT EDGE MOOR	1.02	1,079.52	0.00	1,080.54	13,320.52	0.00
PRINCE MINERALS	0.00	0.00	0.00	0.00	0.00	0.00
NICKEL COMPOUNDS Total	6.02	1,079.52	0.00	1,085.54	257,141.52	0.00
NITROBENZENE						
ORIENT CORP	2.00	0.00	0.00	2.00	0.00	0.00
NITROBENZENE Total	2.00	0.00	0.00	2.00	0.00	0.00
P-CHLOROANILINE						
BASF NEWPORT	6.00	0.00	0.00	6.00	23,468.15	389.00
P-CHLOROANILINE Total	6.00	0.00	0.00	6.00	23,468.15	389.00
POLYCHLORINATED BIPHENYLS						
DUPONT EDGE MOOR	0.00	0.00	0.00	0.01	2.20	0.00
POLYCHLORINATED BIPHENYLS Total	0.00	0.00	0.00	0.01	2.20	0.00
POLYCYCLIC AROMATIC COMPOUNDS						
DELAWARE CITY REFINERY	240.00	3.90	0.00	243.90	0.00	389.00
DUPONT EDGE MOOR	69.82	0.00	614.56	684.37	0.00	0.00
EDGE MOOR/HAY ROAD ENERGY CENTERS	0.40	0.18	0.00	0.58	0.00	0.00
HONEYWELL	398.00	0.00	0.00	398.00	0.00	0.00
IKO	0.37	0.00	0.00	0.37	141.20	545.30
POLYCYCLIC AROMATIC COMPOUNDS Total	708.59	4.08	614.56	1,327.22	141.20	934.30
PROPYLENE OXIDE						
CRODA	582.20	0.00	0.00	582.20	0.00	0.00
PROPYLENE OXIDE Total	582.20	0.00	0.00	582.20	0.00	0.00
STYRENE						
DELAWARE CITY REFINERY	11.00	5.00	0.00	16.00	0.00	1,211.00
JUSTIN TANKS	9,802.00	0.00	202.00	10,004.00	202.00	22,680.00
STYRENE Total	9,813.00	5.00	202.00	10,020.00	202.00	23,891.00
TETRACHLOROETHYLENE						
DELAWARE CITY REFINERY	5.00	0.00	0.00	5.00	0.00	0.00
TETRACHLOROETHYLENE Total	5.00	0.00	0.00	5.00	0.00	0.00
TOLUENE DIISOCYANATE (MIXED ISOMERS)						
AEARO TECHNOLOGIES	5.40	0.00	0.00	5.40	3,558.00	0.00
MACDERMID	0.00	0.00	0.00	0.00	0.00	0.00
TOLUENE DIISOCYANATE (MIXED ISOMERS) Total	5.40	0.00	0.00	5.40	3,558.00	0.00
TRICHLOROETHYLENE						
HANDYTUBE	6,331.00	0.00	0.00	6,331.00	9,100.00	0.00
TRICHLOROETHYLENE Total	6,331.00	0.00	0.00	6,331.00	9,100.00	0.00
VINYL ACETATE						
FORMOSA PLASTICS	12,523.00	0.00	0.00	12,523.00	0.00	0.00
VINYL ACETATE Total	12,523.00	0.00	0.00	12,523.00	0.00	0.00
VINYL CHLORIDE						
FORMOSA PLASTICS	49,262.00	0.00	0.00	49,262.00	270.41	289,794.00
VINYL CHLORIDE Total	49,262.00	0.00	0.00	49,262.00	270.41	289,794.00
STATE TOTAL	95,475	1,313	4,168	100,955	6,066,826	878,565



APPENDIX K

Glossary and Acronyms

GLOSSARY AND ACRONYMS

Accidental Release – The amount released to the environment as a result of catastrophic events, remedial actions, or one-time events not associated with production processes.

Aerosol - A gaseous form of a chemical, which includes mists, vapors, gases, and fogs, would be considered an aerosol. Hydrochloric and sulfuric acid aerosols are the reportable form of these two chemicals. These acids in aqueous solutions are no longer reportable under TRI, but an aerosol that is generated from a solution is reportable.

Air Releases - Point and non-point air emissions, or releases to air. Point releases are those chemicals released through **stacks**, vents, or other confined spaces and are usually regulated by permit. Non-point, or **fugitive**, releases include chemical leaks from valves, pump seals, etc., evaporative losses from surface impoundments (ponds) or spills, or releases from building ventilation systems.

ARP - DNREC's Accidental Release Program - Formerly known as the Industrial Disaster Prevention program, ARP provides protection for the lives and health of the citizens of Delaware by ensuring that companies with extremely hazardous substances have proper control plans and operations in place to prevent disasters.

Article - The term "Article" in 40 CFR Section 372.3, is defined as a manufactured item: (1) which is formed to a specific shape or design during manufacture; (2) which has end use functions dependent in whole or in part upon shape or design; and (3) which does not release an EPCRA section 313 chemical under normal conditions of processing or use of that item at the facility or establishment.

ATSDR - Agency for Toxic Substances and Disease Registry – A federal public health agency of the U.S. Department of Health and Human Services. ATSDR serves the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances.

Bioaccumulate - Bioaccumulate means to increase the concentration of a chemical in a biological organism such as humans over time, compared to the chemical's concentration in the environment. Compounds accumulate in living things any time they are taken up and stored faster than they are broken down or excreted.

Bottom Ash - Ash that falls to the bottom of the combustion chamber in a process burning fuels like coal and oil. Bottom ash is removed for disposal on a regular basis. Also see **Fly Ash**.

BTU – British Thermal Unit – A unit of heat; the amount of heat required to raise one pound of water one Fahrenheit degree (39°F to 40°F). TBTU = one trillion BTUs.

CAA - Clean Air Act - The Clean Air Act is the law that defines EPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer. The last major change in the law was enacted by Congress in 1990. Legislation passed since then has made several minor changes.

Carcinogen - A carcinogen is a substance that can cause cancer of some form.

CEM - Continuous Emissions Monitoring - A continuous emission monitoring system



APPENDIX K

Glossary and Acronyms

(CEMS) is the total equipment necessary for the determination of a gas or particulate matter concentration or emission rate using continuous pollutant analyzer measurements. CEMS are required under some of the EPA regulations for either continual compliance determinations or determination of when standards have been exceeded.

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act - The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. The Superfund Amendments and Reauthorization Act (SARA) amended CERCLA on October 17, 1986. SARA made several important changes and additions to the program, including provision for the TRI Program in the Emergency Planning and Community Right-to-Know Act. (See **EPCRA** and **SARA** below).

Chemical Abstracts Service (CAS) Registry Number - A numerical identification given to each unique chemical, which aids in the identification of a chemical with multiple synonyms (e.g., CAS 78-93-3 - methyl ethyl ketone, is also known as 2-butanone). Chemical categories under TRI do not possess a CAS numbers and are assigned category codes by the EPA. Lead compounds, for example, is category code N420.

DeMinimis Concentration – The concentration below which a chemical does not need to be considered when it is present in mixtures. The deminimis concentration is 1.0%, or 0.1% if the chemical meets the OSHA carcinogen standard.

Disposal - Any underground injection, placement in landfills/surface impoundments, land treatment, or other intentional land disposal.

DNREC - Delaware Department of Natural Resources and Environmental Control – The State agency in Delaware that is responsible for environmental concerns. It has seven divisions, and the Cabinet Secretary reports to the Governor. The Division of Waste and Hazardous Substances is responsible for this report, and the Divisions of Air Quality, Watershed Stewardship, Parks and Recreation, Water, Fish and Wildlife, and the Office of the Secretary complete the Department.

Emission Factors – An Emission factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. Emission factors are published emission rates of chemicals in particular processes, which are based on averaging a large sampling of representative processes.

Energy Recovery - The use of a waste product to create and utilize energy to generate steam, electricity, etc. A TRI chemical in waste must contain enough heating value to sustain the combustion process; otherwise it is considered only treatment or incineration of the waste.

Environmental Fate - The disposition, over time, of a chemical in the environment. The bioaccumulation of a chemical in fish and the decomposition of a chemical when exposed to sunlight are examples of environmental fate.

EPA - United States Environmental Protection Agency.

EPCRA - Emergency Planning and Community Right-to-Know Act. Congress enacted the Emergency Planning and Community Right to Know Act as Title III of the Superfund Amendments and Reauthorization Act (**SARA**) of 1986. This act includes the TRI program, and more information can be found in Appendix A of this report.



APPENDIX K

Glossary and Acronyms

EPCRA Section 313 Chemical - A chemical or chemical category listed in 40 CFR Section 372.65 (40 CFR Section 372.3) - see **Toxic Chemical and Modified Chemicals** below.

Facility - All buildings, equipment, structures, and other stationary items that are located on a single site or on contiguous or adjacent sites and are owned or operated by the same person (or by any person that controls, is controlled by, or under common control with such person). A facility may contain more than one establishment, or distinct business unit.

Fluid Bed - A fluid bed process uses a gas introduced under a bed of fine solid material to separate and fluidize the material, creating a condition of rapid mixing. The bed has the appearance of a vigorously boiling liquid, and the bed of material takes on many of the properties of a fluid. It exerts pressure and the material will flow through a hole in the vessel and over or under a weir within the bed. The fluid bed process is used to improve reaction time, heat transfer, processing uniformity, and process yield or conversions.

Fluid Catalytic Cracker - In petroleum chemistry, cracking is the process whereby complex organic molecules are converted to simpler molecules (light hydrocarbons) by the breaking of carbon-carbon bonds. Fluid Catalytic Cracking (FCC) produces a high yield of gasoline and LPG from heavier crude oil distillation fractions and residues. FCC uses a very active hot catalyst where it contacts the heavy feed material in a reactor, vaporizes it, and the cracking reactions break down the high molecular weight oil into lighter components including LPG, gasoline, and diesel fuel.

Fluid Coker - Used in refineries, fluid coking is a continuous fluid bed technology that thermally converts heavy hydrocarbons to lighter products.

Fly Ash - Ash that becomes airborne and escapes in the exhaust air from a combustion process that burns fuels like coal or oil. Fly ash can be controlled with air pollution control devices like precipitators and filters. Also see **Bottom Ash**.

FOIA - Freedom of Information Act - Originally signed into law on July 4, 1966 and amended in 1996, 2002 and 2007. This act allows for the full or partial disclosure of previously unreleased information and documents controlled by the United States Government. The Act defines agency records subject to disclosure, outlines disclosure procedures and grants some exemptions to the statute. Many states, including Delaware, have their own FOIA statutes.

Form A - A two-page report that a facility may use when certain criteria are met for a given chemical that must be reported. Refer to page 2 in this report for general reporting requirements, and pages 3-4 for details on eligibility and a description of the Form A data elements. The Form A provides basic facility information and the chemical identity, but does not provide other data that is given on the Form R. The Form A form is shown in Appendix N.

Form R - A five-page report that a facility must use (except when Form A eligibility applies) for reporting on each TRI chemical that the facility exceeds an applicable threshold. The Form R form is shown in Appendix M.

Fugitive Emissions - See **Air Releases**.

Hazardous Air Pollutants (HAPs) - Air pollutants that are not covered by ambient air quality standards but which, as defined in the Clean Air Act, may present a threat of adverse human health effects or adverse environmental effects. Such pollutants include asbestos, beryllium, mercury, benzene, coke oven emissions, radionuclides, and vinyl chloride.

IARC - International Agency for Research on Cancer (IARC) - IARC is part of the World Health Organization. IARC coordinates and conducts research on the causes of human cancer, the mechanisms of carcinogenesis, and develops scientific strategies for cancer



APPENDIX K

Glossary and Acronyms

control.

Import - To cause a chemical to be imported into the customs territory of the United States. For purposes of the definition, "to cause" means to intend that the chemical be imported and to control the identity of the imported chemical and the location and amount of the imported chemical. For TRI reporting purposes, "import" is the same as "manufacture", as in either case the facility has caused the chemical to become present at the facility.

LEPC - Local Emergency Planning Committee (LEPC). Each LEPC has specific duties to fulfill, and the State Emergency Response Commission (SERC) supervises and coordinates those activities. The LEPC's are required to have broad representation from many groups including state and local officials, media, law enforcement, fire service, EMS and health care, environmental, community groups and citizens and industrial facilities that use hazardous materials. The SERC also receives various reports from businesses that use or store hazardous chemicals, or that experience an emergency release of a hazardous substance, and must establish procedures for receiving and processing requests for information from the public. See **SERC** for more information.

Manufacture - To produce, prepare, compound or import a TRI chemical, including the coincidental production of the chemical as an intermediate, a by-product, or an impurity.

Mass Balance Calculation - A method of calculating amounts and concentrations at a point in a process based on known amounts and concentrations at other points in the process. The basic Mass Balance equation is: $\text{Input} + \text{Generation} = \text{Output} + \text{Consumption}$.

MSDS - Material Safety Data Sheet - A Material Safety Data Sheet (MSDS) is prepared by the manufacturer of a product. The purpose of the form is to provide information on the safe use, handling and potential hazards of a product. The form is required to be developed under 29 CFR Section 1910.1200(g). This form lists important attributes, including toxicity and safety information that a user or handler of the chemical is required to know about.

NAAQS - National Ambient Air Quality Standards - The Clean Air Act required EPA to set National Ambient Air Quality Standards (40 CFR Part 50) for pollutants considered harmful to public health and the environment. The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards for six principal pollutants, which are called "criteria" pollutants. They are: Carbon monoxide, lead, nitrogen dioxide, particulate matter (10 and 2.5 microns), ozone, and sulfur dioxide. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

NAICS - North American Industrial Classification System - This is a systematic classification system, which assigns a six-digit number to each commercial and industrial facility. It expands the four-digit classification categories used by the **Standard Industrial Classification (SIC)** codes. It is used by government, industry, and sales organizations to reach targeted industries for data collection, enforcement, and sales. The TRI program converted to NAICS starting with the 2006 reporting year. The covered SIC codes were codes 10 (except 1011, 1081, and 1094), 12 (except 1241), or 20-39; industry codes 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce); or 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C, or 5169, or 5171, or 7389 (limited to facilities



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primarily engaged in solvent recovery services on a contract or fee basis). The NAICS codes are not directly translatable from the SIC codes, so a reference document is usually required to translate or compare the codes. The intent in converting to the NAICS codes was to more precisely define the TRI reporting universe without adding to or subtracting from it. Also see **SIC – Standard Industrial Classification**.

NESHAP - National Emissions Standards for Hazardous Air Pollutants - The Clean Air Act (CAA) requires the U. S. Environmental Protection Agency (EPA) to develop and enforce regulations to protect the general public from exposure to hazardous air pollutants (HAPs).

NPDES - National Pollutant Discharge Elimination System - The Clean Water Act (CWA) requires that all discharges of pollutants to surface waters (streams, rivers, lakes, bays, and oceans) must be authorized by a permit issued under the National Pollutant Discharge Elimination System (NPDES) program.

Off-site Transfers - Waste that is transferred off-site to another facility for the purpose of treatment, recycling, energy recovery, or disposal.

On-site Releases - Emissions from a facility to the environment as a result of normal operations or accidents. This includes emissions to the air, discharges to surface waters, disposal onto or in the ground, and underground injection. Underground injection is not an approved method of hazardous waste disposal in Delaware.

On-site Waste Management - Wastes that are treated, recycled, or recovered for energy at the facility. The disposal of a waste into an on-site landfill is considered a release by EPA, and thus is not included in this category.

OSHA - Occupational Safety and Health Administration - The Federal agency that has the responsibility to ensure a safe and healthful work environment.

Otherwise Use - Encompasses any activity involving a TRI chemical that does not fall under the definition of manufacture or process. A chemical that is not intentionally incorporated into a product, like a solvent used for cleaning, falls under the otherwise use category.

P2 - Pollution Prevention - Pollution Prevention (P2) means "source reduction," as defined under the Pollution Prevention Act and other practices that reduce or eliminate the creation of pollutants. This EPA program was created to encourage, assist and lead others to prevent pollution at the source. Improved operation and maintenance, material substitution, process and equipment modification, conservation practices, product modification, and in-process recycling are examples of pollution prevention. EPA provides incentives to businesses, including public recognition, tools, and technical assistance. Since reduction of waste at its source is emphasized, recycling, energy recovery, treatment, and disposal are not included within the definition of pollution prevention. Also see **Waste Management** below.

PAC - Polycyclic Aromatic Compounds - PACs are multi-numbered benzene-ring compounds. PACs contain polycyclic aromatic hydrocarbons (PAHs), substituted PAHs, and PAH derivatives.

PAH - Polynuclear Aromatic Hydrocarbon - Polynuclear aromatic hydrocarbons (PAHs) are hydrocarbon compounds with multiple benzene rings. PAHs are typical components of



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asphalts, fuels, oils, and greases. They are also called Polycyclic Aromatic Hydrocarbons. They are of concern because some of these compounds have been identified as carcinogens.

PCB - Polychlorinated Biphenyls - A group of toxic, persistent chemicals used in electrical transformers and capacitors for insulating purposes, and in gas pipeline systems as lubricants. The sale and new use of these chemicals were banned by law in 1979.

PBT - Persistent Bioaccumulative Toxin - PBT pollutants are chemicals that are toxic, persist in the environment and bioaccumulate (are not broken down or excreted), and thus pose risks to human health and ecosystems. The biggest concerns about PBT's are that they transfer rather easily among air, water, and land, and span boundaries of geography and generations.

PEL - Permissible Exposure Limit - OSHA sets permissible exposure limits (PELs) to protect workers against the health effects of exposure to hazardous substances. PELs are regulatory limits on the amount or concentration of a substance in the air. PELs are enforceable. OSHA PELs are based on an 8-hour time weighted average (TWA) exposure.

pH - pH is a measure of the acidity in a liquid and is based on the concentration of hydrogen ions in a water solution. High acid content will be indicated by a pH of less than 7.0, and low acidity, called alkalinity, is indicated by a pH higher than 7.0. Although the pH scale is 0-14, it is a logarithmic scale and the range is based on powers of 10. In the case of pH, the range is 1×10^{-7} to 1×10^7 (0.0000001 to 10,000,000).

PM - Particulate Matter - Tiny particles of solid or liquid suspended in a gas or liquid. Sources of particulate matter can be man-made or natural. Some particulates occur naturally, originating from volcanoes, dust storms, forest and grassland fires, living vegetation, and sea spray. Human activities, such as the burning of fossil fuels in vehicles, power plants and various industrial processes also generate significant amounts of particulates. Increased levels of fine particles in the air are linked to health hazards such as heart disease, altered lung function and lung cancer. The notation PM_{10} is used to describe particles of 10 micrometers or less and $PM_{2.5}$ represents particles less than 2.5 micrometers in diameter. One micrometer is one millionth of a meter, or about 0.00004 inches.

POTW - Publicly Owned Treatment Works - Usually a municipal wastewater treatment facility.

PPA - Pollution Prevention Act of 1990 - Pollution prevention became a national policy with the Pollution Prevention Act of 1990. The Act established the waste management hierarchy whereby wastes should be prevented or reduced at the source whenever feasible, and safe disposal is the option of last resort.

Process - To prepare a TRI chemical, after its manufacture, for distribution into commerce. Processing includes intentionally incorporating the chemical into a product or the reaction of the chemical to form another chemical or product.

RCRA - Resource Conservation and Recovery Act - The Resource Conservation and Recovery Act - commonly referred to as RCRA - is our nation's primary law governing the disposal of solid and hazardous waste. Congress passed RCRA on October 21, 1976 to address the increasing problems the nation faced from our growing volume of municipal and industrial waste. RCRA, which amended the Solid Waste Disposal Act of 1965, set national goals for:



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- Protecting human health and the environment from the hazards of waste disposal.
- Conserving energy and natural resources.
- Reducing the amount of waste generated.
- Ensuring that wastes are managed in an environmentally-sound manner.

Recycle - The process of capturing a useful product from a waste stream. Solvent recovery, metals recovery, and acid regeneration are examples of recycling.

Regulation 1146 (7 DE Admin Code 1146) - This Delaware regulation establishes Nitrogen Oxides (NO_x), Sulfur Dioxide (SO₂), and mercury emissions limits to achieve reductions of those pollutants from Delaware's large electric generation units. The reduction in NO_x, SO₂, and mercury emissions will: 1) reduce the impact of those emissions on public health; 2) aid in Delaware's attainment of the State and National Ambient Air Quality Standard (NAAQS) for ground level ozone and fine particulate matter; 3) help address local scale fine particulate and mercury problems attributable to coal and residual oil-fired electric generating units, 4) satisfy Delaware's obligations under the Clean Air Mercury Rule (CAMR), and 5) improve visibility and help satisfy Delaware's EGU-related regional haze obligations.

Release - Any spilling, leaking, pumping, pouring, emitting, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, including the abandonment or discarding of barrels, containers, and other closed receptacles of any EPCRA Section 313 chemicals.

SARA - Superfund Amendments and Reauthorization Act of 1986 (SARA Title III), also known as The Emergency Planning and Community Right-to-Know Act (EPCRA), was enacted in 1986. This law provides an infrastructure at the state and local levels to plan for chemical emergencies. Facilities that store, use, or release certain chemicals, may be subject to various reporting requirements. Reported information is then made publicly available through the **Toxics Release Inventory** and other programs so that interested parties may become informed about potentially dangerous chemicals in their community.

Selective Catalytic Reduction (SCR) - Nitrogen oxides (NO_x) emissions in boiler exhaust gas are converted into elemental nitrogen and water by injecting a nitrogen-based chemical reagent, most commonly ammonia, into the gas and then passing the gas through a catalyst bed where the NO_x and ammonia react to form nitrogen and water vapor. Also see **SNCR** below.

Selective Non-Catalytic Reduction (SNCR) - Nitrogen oxides (NO_x) emissions in boiler exhaust gas are converted into elemental nitrogen and water by injecting a nitrogen-based chemical reagent, most commonly urea or ammonia into the gas in the furnace. The SNCR method does not require a catalyst, but has lower conversion efficiency than the SCR method. Also see **SCR** above.

SERC - State Emergency Response Commission – The SERC's were created in response to the federal Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986, and are comprised of representatives from various state and local government organizations and industry. The primary focus of a SERC is to enhance state and local emergency response and preparedness capabilities through better coordination and planning. See **LEPC (Local Emergency Planning committee)** for more information.

Standard Industrial Classification (SIC) Code - A four-digit code established by the Federal Office of Management and Budget used to describe the type of activity(s) at a facility. Facilities that engage in a variety of activities may possess multiple codes. Also see **North**



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American Industrial Classification System (NAICS). The TRI program converted to NAICS starting with the 2006 reporting year.

Stack Test - A process of sampling an exhaust stack to determine the contents, usually in percent concentration and cubic feet per hour. Sampling is usually done through a port or series of ports at an elevated point on the stack.

Teratogen - Any agent that can disturb the development of an embryo or fetus. Teratogens may cause a birth defect in the child. Or a teratogen may halt the pregnancy outright. The classes of teratogens include radiation, maternal infections, chemicals, and drugs.

TSCA - Toxic Substance Control Act – TSCA was enacted to provide information about all chemicals and to control the production of new chemicals that might present an unreasonable risk of injury to health or the environment. TSCA authorizes the Environmental Protection Agency to require testing of chemical substances. TSCA also provides authority to regulate the manufacturing, processing, import and use of chemicals. The manufacture use, and/or disposal of chemicals are covered in virtually every environmental law and in OSHA and DOT regulations, and TSCA fills the gaps in other laws and supplements sections of existing laws. EPA maintains and publishes the TSCA Inventory, which includes a list of chemicals manufactured, imported, or processed for commercial purposes in the United States. The TSCA Inventory is voluminous, with more than 75,000 chemical substances.

Toxic Chemical - A chemical or chemical category listed in 40 CFR Section 372.65 (40 CFR Section 372.3); causing acute human health risks, cancer or chronic (non-cancer) human health effects, and/or environmental effects.

Treatment - The removal, destruction, alteration, or stabilization of the waste. Biological treatment, incineration, and neutralization are examples of waste treatment. Wastewater treatment plants and hazardous waste incinerators are examples of treatment facilities.

TRI - The Toxics Release Inventory (TRI) is a publicly available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990.

TSDF - Treatment, Storage, and Disposal Facility - A site where a hazardous substance is treated, stored or disposed of. TSDF facilities are regulated by EPA and states under the **Resource Conservation and Recovery Act (RCRA)**.

VOC - Volatile Organic Compounds - Chemical compounds containing carbon and hydrogen that readily evaporate at room temperature.

Waste Management - EPA interprets waste management to include the following activities: recycling, combustion for energy recovery, treatment for destruction, waste stabilization, and release, including disposal. Waste management does not include the storage, container transfer, or tank transfer if no recycling, combustion for energy, treatment for destruction, waste stabilization, or release of the chemical occurs at the facility.

More terms and acronyms can be found at: <http://www.epa.gov/OCEPAterms/intro.htm> .



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Sample Form R
For Reporting year 2014

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<b style="font-size: 1.2em;">EPA United States Environmental Protection Agency		<b style="font-size: 1.2em;">FORM R Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, also Known as Title III of the Superfund Amendments and Reauthorization Act		TRI Facility ID Number <input style="width: 100%;" type="text"/>	
				Toxic Chemical, Category, or Generic Name <input style="width: 100%;" type="text"/>	
This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank.		Revision (Enter up to two code(s)) <input style="width: 30px;" type="text"/> <input style="width: 30px;" type="text"/>		Withdrawal (Enter up to two code(s)) <input style="width: 30px;" type="text"/> <input style="width: 30px;" type="text"/>	
IMPORTANT: See instructions to determine when "Not Applicable (NA)" boxes should be checked.					
PART I. FACILITY IDENTIFICATION INFORMATION					
SECTION 1. REPORTING YEAR <input style="width: 50px;" type="text"/>					
SECTION 2. TRADE SECRET INFORMATION					
2.1 Are you claiming the toxic chemical identified on page 2 as a trade secret? <input type="checkbox"/> Yes (Answer question 2.2; attach substantiation forms)		<input type="checkbox"/> No (Do not answer 2.2; go to Section 3)		2.2 Is this copy <input type="checkbox"/> Sanitized <input type="checkbox"/> Unsanitized (Answer only if "Yes" in 2.1)	
SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.) I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.					
Name and official title of owner/operator or senior management official:			Signature:		Date signed:
SECTION 4. FACILITY IDENTIFICATION					
Facility or Establishment Name		TRI Facility ID Number			
Physical Street Address		Mailing Address (if different from physical street address)			
City/County/Tribe/State/ZIP Code		City/State/ZIP Code		Country (Non-US)	
4.2 This report contains information for: (Important: Check a or b; check c or d if applicable)					
		a. <input type="checkbox"/> An entire facility	b. <input type="checkbox"/> Part of a facility	c. <input type="checkbox"/> A federal facility	d. <input type="checkbox"/> GOCO
4.3 Technical Contact Name				Telephone Number (include area code and ext.)	
Email Address					
4.4 Public Contact Name				Telephone Number (include area code and ext.)	
Email Address					
4.5 NAICS Code(s) (6 digits)		Primary	a.	b.	c.
			d.	e.	f.
4.6 Dun & Bradstreet Number(s) (9 digits)		a.	b.		
SECTION 5. Parent Company Information					
5.1 Name of U.S. Parent Company (for TRI Reporting purposes)				No U.S. Parent Company (for TRI Reporting purposes) <input type="checkbox"/>	
5.2 Parent Company's Dun & Bradstreet Number		NA <input type="checkbox"/>			

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Sample Form R
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FORM R		TRI Facility ID Number		
Part II. CHEMICAL-SPECIFIC INFORMATION		Toxic Chemical, Category, or Generic Name		
SECTION 1. TOXIC CHEMICAL IDENTITY (Important: DO NOT complete this section if you are reporting a mixture component in Section 2 below.)				
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)			
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)			
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)			
SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1.)				
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)			
SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY (Important: Check all that apply.)				
3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:		
a. <input type="checkbox"/> Produce b. <input type="checkbox"/> Import If Produce or Import c. <input type="checkbox"/> For on-site use/processing d. <input type="checkbox"/> For sale/distribution e. <input type="checkbox"/> As a byproduct f. <input type="checkbox"/> As an impurity	a. <input type="checkbox"/> As a reactant b. <input type="checkbox"/> As a formulation component c. <input type="checkbox"/> As an article component d. <input type="checkbox"/> Repackaging e. <input type="checkbox"/> As an impurity	a. <input type="checkbox"/> As a chemical processing aid b. <input type="checkbox"/> As a manufacturing aid c. <input type="checkbox"/> Ancillary or other use		
SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR				
4.1	<input style="width: 40px; height: 15px;" type="text"/> (Enter two digit code from instruction package.)			
SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE				
		A. Total Release (pounds/year*) (Enter a range code** or estimate)	B. Basis of Estimate (Enter code)	C. Percent from Stormwater
5.1	Fugitive or non-point air emissions	NA <input type="checkbox"/>		
5.2	Stack or point air emissions	NA <input type="checkbox"/>		
5.3	Discharges to receiving streams or water bodies (Enter one name per box)	NA <input type="checkbox"/>		
	Stream or Water Body Name	Reach Code (optional)		
5.3.1				
5.3.2				
5.3.3				
If additional pages of Part II, Section 5.3 are attached, indicate the total number of pages in this box <input style="width: 40px;" type="text"/> and indicate the Part II, Section 5.3 page number in this box. <input style="width: 40px;" type="text"/> (Example: 1, 2, 3, etc.)				

EPA form 9350-1 (Rev. 06/2014) – Previous editions are obsolete.

*For Dioxin or Dioxin-like compounds, report in grams/year.
**Range Codes: A= 1-10 pounds; B= 11-499 pounds; C= 500-999 pounds.



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FORM R		TRI Facility ID Number	
Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)		Toxic Chemical, Category, or Generic Name	
SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE (continued)			
		NA	A. Total Release (pounds/year*) (Enter a range code*** or estimate)
5.4-5.5 Disposal to land on-site			B. Basis of Estimate (Enter code)
5.4.1	Class I Underground Injection Wells	<input type="checkbox"/>	
5.4.2	Class II-V Underground Injection Wells	<input type="checkbox"/>	
5.5.1A	RCRA Subtitle C landfills	<input type="checkbox"/>	
5.5.1B	Other landfills	<input type="checkbox"/>	
5.5.2	Land treatment/application farming	<input type="checkbox"/>	
5.5.3A	RCRA Subtitle C surface impoundments	<input type="checkbox"/>	
5.5.3B	Other surface impoundments	<input type="checkbox"/>	
5.5.4	Other disposal	<input type="checkbox"/>	
SECTION 6. TRANSFER(S) OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS			
6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)		NA	<input type="checkbox"/>
6.1.	POTW Name		
POTW Address			
City	County	State	ZIP
A. Quantity Transferred to this POTW (pounds/year*) (Enter range code*** or estimate)		B. Basis of Estimate (Enter code)	
If additional pages of Part II, Section 6.1 are attached, indicate the total number of pages in this box <input type="text"/>			
and indicate the Part II, Section 6.1 page number in this box. <input type="text"/> (Example: 1, 2, 3, etc.)			
SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS		NA	<input type="checkbox"/>
6.2.	Off-Site EPA Identification Number (RCRA ID No.)		
Off-Site Location Name:			
Off-Site Address:			
City	County	State	ZIP
		Country (non-US)	
Is this location under control of reporting facility or parent company? <input type="checkbox"/> Yes <input type="checkbox"/> No			

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*For Dioxin or Dioxin-like compounds, report in grams/year.
***Range Codes: A= 1-10 pounds; B= 11-499 pounds; C= 500-999 pounds.



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FORM R						TRI Facility ID Number
Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)						Toxic Chemical, Category, or Generic Name
SECTION 6.2. TRANSFERS TO OTHER OFF-SITE LOCATION (CONTINUED)						
A. Total Transfer (pounds/year*) (Enter a range code*** or estimate)		B. Basis of Estimate (Enter code)		C. Type of Waste Treatment/Disposal/Recycling/Energy Recovery (Enter code)		
1.		1.		1. M		
2.		2.		2. M		
3.		3.		3. M		
4.		4.		4. M		
6.2 Off-Site EPA Identification Number (RCRA ID No.)						
Off-Site Location Name:						
Off-Site Address:						
City		County		State		ZIP Country (non-US)
Is this location under control of reporting facility or parent company? <input type="checkbox"/> Yes <input type="checkbox"/> No						
A. Total Transfer (pounds/year*) (Enter a range code*** or estimate)		B. Basis of Estimate (Enter code)		C. Type of Waste Treatment/Disposal/Recycling/Energy Recovery (Enter code)		
1.		1.		1. M		
2.		2.		2. M		
3.		3.		3. M		
4.		4.		4. M		
SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY						
<input type="checkbox"/> Not Applicable (NA) - Check here if no on-site waste treatment method is applied to any waste stream containing the toxic chemical or chemical category.						
a. General Waste Stream (Enter code)		b. Waste Treatment Method(s) Sequence (Enter 3- or 4-character code(s))			c. Waste Treatment Efficiency (Enter 2 character code)	
7A.1a	7A.1b	1	2	7A.1c		
	3	4	5			
	6	7	8			
7A.2a	7A.2b	1	2	7A.2c		
	3	4	5			
	6	7	8			
7A.3a	7A.3b	1	2	7A.3c		
	3	4	5			
	6	7	8			
7A.4a	7A.4b	1	2	7A.4c		
	3	4	5			
	6	7	8			
7A.5a	7A.5b	1	2	7A.5c		
	3	4	5			
	6	7	8			
If additional pages of Part II, Section 6.2/7.A are attached, indicate the total number of pages in this <input type="text"/> box and indicate the Part II, Section 6.2/7.A page number in this box. <input type="text"/> (Example: 1, 2, 3, etc.)						

EPA form 9350-1 (Rev. 06/2014) - Previous editions are obsolete.

*For Dioxin or Dioxin-like compounds, report in grams/year.
***Range Codes: A= 1-10 pounds; B= 11-499 pounds; C= 500-999 pounds.



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FORM R		TRI Facility ID Number			
Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)		Toxic Chemical, Category, or Generic Name			
SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES					
<input type="checkbox"/> NA Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.					
Energy Recovery Methods (Enter 3-character code(s))					
1	2	3			
SECTION 7C. ON-SITE RECYCLING PROCESSES					
<input type="checkbox"/> NA Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.					
Recycling Methods (Enter 3-character code(s))					
1.	2.	3.			
SECTION 8. SOURCE REDUCTION AND WASTE MANAGEMENT					
	Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)	
8.1 – 8.7 Production-Related Waste Managed					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills				
8.1b	Total other on-site disposal or other releases				
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills				
8.1d	Total other off-site disposal or other releases				
8.2	Quantity used for energy recovery on-site				
8.3	Quantity used for energy recovery off-site				
8.4	Quantity recycled on-site				
8.5	Quantity recycled off-site				
8.6	Quantity treated on-site				
8.7	Quantity treated off-site				
8.8	Non-production-related waste managed***				
8.9	<input type="checkbox"/> Production ratio or <input type="checkbox"/> Activity ratio (select one and enter value to right)				
8.10	Did your facility engage in any newly implemented source reduction activities for this chemical during the reporting year? If so, complete the following section; if not, check NA. NA <input type="checkbox"/>				
	Source Reduction Activities (Enter code(s))	Methods to Identify Activity (Enter code(s))		Estimated annual reduction (Enter code(s)) (optional)	
8.10.1		a.	b.	c.	d.
8.10.2		a.	b.	c.	d.
8.10.3		a.	b.	c.	d.
8.10.4		a.	b.	c.	d.

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*For Dioxin or Dioxin-like compounds, report in grams/year.

***Includes quantities released to the environment or transferred off-site as a result of remedial actions, catastrophic events, or other one-time events not associated with production processes



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FORM R		TRI Facility ID Number
Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)		Toxic Chemical, Category, or Generic Name
SECTION 8.11. DISPOSAL OR OTHER RELEASES, SOURCE REDUCTION, AND RECYCLING ACTIVITIES		
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, provide it here.	
SECTION 9. MISCELLANEOUS INFORMATION		
9.1	If you wish to submit any miscellaneous, additional, or optional information regarding your Form R submission, provide it here.	

EPA form 9350 -1 (Rev. 06/2014) – Previous editions are obsolete.



APPENDIX M

TRI REPORTING FORMS - FORM A

Sample Form A Page 1
For Reporting year 2014

Form Approved OMB Number: 2025-0009
Approval Expires: 11/30/2017

Page 1 of

 United States Environmental Protection Agency		TOXICS RELEASE INVENTORY FORM A			
					TRI Facility ID Number
This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank.		Revision (Enter up to two code(s)) <input type="text"/> <input type="text"/>		Withdrawal (Enter up to two code(s)) <input type="text"/> <input type="text"/>	
IMPORTANT: See instructions to determine when "Not Applicable (NA)" boxes should be checked.					
PART I. FACILITY IDENTIFICATION INFORMATION					
SECTION 1. REPORTING YEAR _____					
SECTION 2. TRADE SECRET INFORMATION					
2.1 Are you claiming the toxic chemical identified on page 2 as a trade secret? <input type="checkbox"/> Yes (Answer question 2.2; attach substantiation forms)		<input type="checkbox"/> No (Do not answer 2.2; go to Section 3)		2.2 Is this copy <input type="checkbox"/> Sanitized <input type="checkbox"/> Unsanitized (Answer only if "Yes" in 2.1)	
SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)					
I hereby certify that to the best of my knowledge and belief, for each toxic chemical listed in this statement, the annual reportable amount as defined in 40 CFR 372.27(a), did not exceed 500 pounds for this reporting year and that the chemical was manufactured, processed, or otherwise used in an amount not exceeding 1 million pounds during this reporting year.					
Name and official title of owner/operator or senior management official:			Signature:		Date signed:
SECTION 4. FACILITY IDENTIFICATION					
4.1		Facility or Establishment Name		TRI Facility ID Number	
		Physical Street Address		Mailing Address (if different from physical street address)	
		City/County/Tribe/State/ZIP Code		Country (Non-US)	
4.2		This report contains information for: (Important: Check c or d if applicable)			
		c. <input type="checkbox"/> A Federal facility		d. <input type="checkbox"/> GOCO	
4.3		Technical Contact Name		Telephone Number (include area code and ext.)	
		Email Address			
4.4		Public Contact Name		Telephone Number (include area code and ext.)	
		Email Address			
4.5		NAICS Code(s) (6 digits)			
		Primary			
		a.	b.	c.	d.
4.6		Dun & Bradstreet Number(s) (9 digits)			
		a.			
		b.			
SECTION 5. PARENT COMPANY INFORMATION					
5.1		Name of U.S. Parent Company (for TRI Reporting purposes)			No U.S. Parent Company (for TRI Reporting purposes) <input type="checkbox"/>
5.2		Parent Company's Dun & Bradstreet Number		NA <input type="checkbox"/>	

EPA Form 9350 -2 (Rev. 06/2014) - Previous editions are obsolete.



APPENDIX M

TRI REPORTING FORMS – FORM A

Sample Form A Page 2
For Reporting year 2014

Form Approved OMB Number: 2025-0009
Approval Expires: 10/31/

Page ___ of ___

EPA FORM A		TRI Facility ID Number
PART II. CHEMICAL IDENTIFICATION		
Do not use this form for reporting PBT chemicals, including Dioxin and Dioxin-like Compounds*		
SECTION 1. TOXIC CHEMICAL IDENTITY		Report ___ of ___
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)	
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)	
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)	
SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above)		
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)	
SECTION 1. TOXIC CHEMICAL IDENTITY		Report ___ of ___
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)	
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)	
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)	
SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above)		
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)	
SECTION 1. TOXIC CHEMICAL IDENTITY		Report ___ of ___
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)	
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)	
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)	
SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above)		
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)	
SECTION 1. TOXIC CHEMICAL IDENTITY		Report ___ of ___
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)	
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)	
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)	
SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above)		
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)	

*See the TRI Reporting Forms and Instructions manual for the list of PBT Chemicals (including Dioxin and Dioxin-like Compounds)

APPENDIX N TRI REPORTING FORMS DIOXIN SCHEDULE 1

EPA United States Environmental Protection Agency		FORM R Schedule 1				TRI Facility ID Number
PART II. CHEMICAL-SPECIFIC INFORMATION (continued)						
SECTION 5. QUANTITY OF DIOXIN AND DIOXIN-LIKE COMPOUNDS ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE						
D. Mass (grams) of each compound in the category (1-17)	5.1 NA	5.2 NA	5.3 5.3	5.3.1	5.3.2	5.3.3
	Fugitive or non-point air emissions	Stack or point air emissions	Discharges to receiving streams or water bodies (Enter data for one stream or water body per box)	NA	NA	NA
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

If additional pages of Section 5.3 are attached, indicate the total number of pages in this box

and indicate the Section 5.3 page number in this box (Example: 1, 2, 3, etc.)

APPENDIX N TRI REPORTING FORMS DIOXIN SCHEDULE 1

FORM R Schedule 1		TRI Facility ID Number						
PART II. CHEMICAL-SPECIFIC INFORMATION (continued)								
SECTION 5. QUANTITY OF DIOXIN AND DIOXIN-LIKE COMPOUNDS ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE								
5.4 - 5.5 Disposal to land on-site								
C. Mass (grams) of each compound in the category (1-17)	5.4.1	5.4.2	5.5.1.A	5.5.1.B	5.5.2	5.5.3A	5.5.3B	5.5.4
	NA	NA	NA	NA	NA	NA	NA	NA
	Class I Underground Injection Wells	Class II-V Underground Injection Wells	RCRA Subtitle C landfills	Other landfills	Land treatment/ application farming	RCRA Subtitle C surface impoundments	Other surface impoundments	Other disposal
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								

APPENDIX N

TRI REPORTING FORMS

DIOXIN SCHEDULE 1

FORM R Schedule 1										TRI Facility ID Number						
PART II. CHEMICAL-SPECIFIC INFORMATION (continued)																
SECTION 6. TRANSFERS OF DIOXIN AND DIOXIN-LIKE COMPOUNDS IN WASTES TO OFF-SITE LOCATIONS																
6.1. DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs) NA <input type="text"/>																
C. Mass (grams) of Each Compound in the Category (1-17)																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
6.2. TRANSFERS TO OTHER OFF-SITE LOCATIONS NA <input type="text"/>																
D. Mass (grams) of each compound in the category (1-17)																
1.																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17								
2.																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17								
3.																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17								
4.																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17								
6.2. TRANSFERS TO OTHER OFF-SITE LOCATIONS NA <input type="text"/>																
D. Mass (grams) of each compound in the category (1-17)																
1.																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17								
2.																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17								
3.																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17								
4.																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17								

If additional pages of Section 6.1 or 6.2 are attached, indicate the total number of pages in this box and indicate the Section 6.1 or 6.2 page number in this box (Example: 1, 2, 3, etc.)

APPENDIX N

TRI REPORTING FORMS

DIOXIN SCHEDULE 1

FORM R Schedule 1													TRI Facility ID Number	
PART II. CHEMICAL-SPECIFIC INFORMATION (continued)														
SECTIONS 8.1-8.8. WASTE MANAGEMENT QUANTITIES FOR DIOXIN AND DIOXIN-LIKE COMPOUNDS (current year only)														
8.1-8.7 Production-related waste managed														
8.1a	8.1b	8.1c	8.1d	8.2	8.3	8.4	8.5	8.6	8.7	8.8				
Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	Total other on-site disposal or other releases	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	Total other off-site disposal or other releases	Quantity used for energy recovery on-site	Quantity used for energy recovery off-site	Quantity recycled on-site	Quantity recycled off-site	Quantity treated on-site	Quantity treated off-site	Non-production related waste managed*				
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														

Column F, Mass (grams) of each compound in the category (1-17)

*Includes quantities released to the environment or transferred off-site as a result of remedial actions, catastrophic events, or other one-time events not associated with production processes