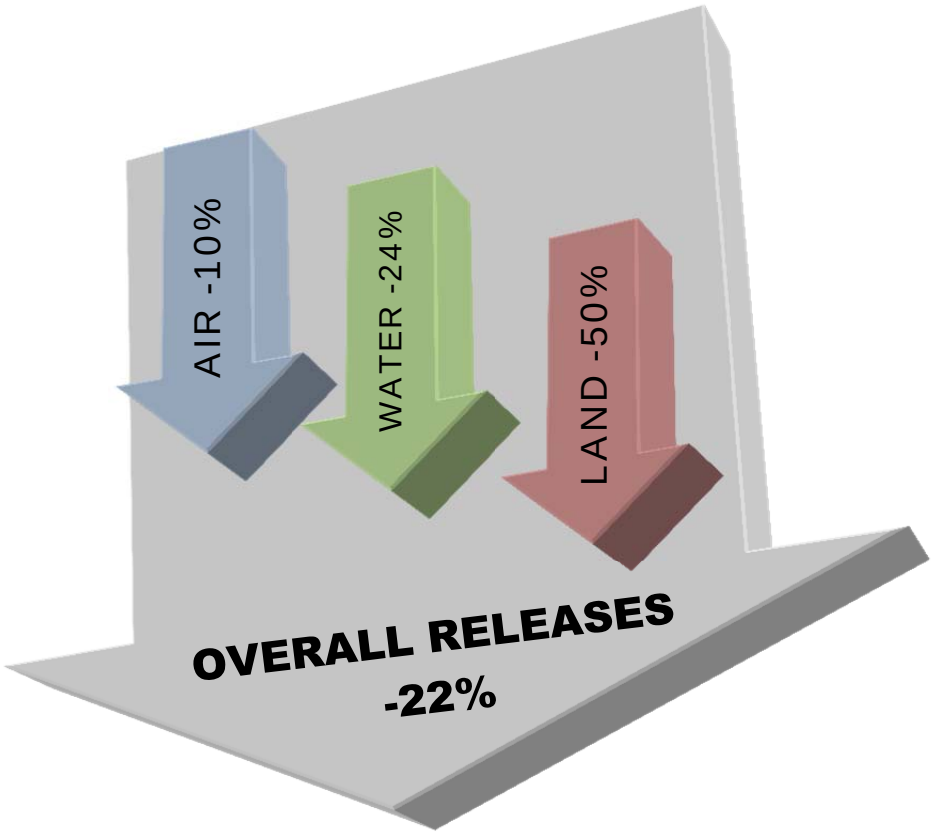
TOXICS RELEASE INVENTORY

DELAWARE TOXICS RELEASE INVENTORY REPORT

2013



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

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Jack Markell
Governor

David Small
Secretary, DNREC

Ali Mirzakhalili
Director, Division of Air Quality

Virgil Holmes
Director, Division of Water

Marjorie A. Crofts
Director, Division of Waste and Hazardous Substances

Jamie Bethard
Program Manager, Emergency Prevention and Response Section

This report was prepared with the assistance of numerous individuals in the Department of Natural Resources and Environmental Control. Any questions or comments regarding this report should be directed to the principal author:

Brian Lutes
TRI Coordinator
EPCRA Reporting Program, DNREC
655 South Bay Rd., Suite 5N
Dover, DE 19901
Tel. (302) 739-9405, Fax (302) 739-3106
e-mail: brian.lutes@state.de.us

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 2012. Total on-site releases are down 22% or 1.1 million pounds, with releases to air down 10% (110,000 pounds), releases to water down 24% (900,000 pounds), and releases to land down 50% (150,000 pounds) compared to 2012.*

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Executive Summary

The 2013 Toxics Release Inventory data set marks 27 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.

Overall on-site releases reported in Delaware decreased by 1,161,000 pounds (22%) for 2013 compared to 2012. Significant changes impacting on-site releases for 2013 were reductions reported by Delaware City Refinery (DCR) and Perdue Georgetown for the release of nitrate compounds to water. Total releases reported by DCR were down 650,000 pounds and total releases reported by Perdue Georgetown were down 173,000 pounds compared to 2012. The results from the 2013 TRI data are covered in greater detail throughout this report. Additional detailed 2013 TRI information for each reporting facility in Delaware is also presented via the ***TRI Facility Profiles*** (see the ***Access to TRI Files*** section under ***For Further Information*** on page 46). These profiles are a new feature this year that allow the public to more easily access information about the TRI facilities in their community.

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

- The total amount released on-site to water decreased by 896,000 pounds (24%) compared to 2012. This was largely due to reductions in releases of nitrate compounds reported by the Delaware City Refinery and the Perdue Georgetown facility. Excluding nitrate compounds, releases to water have trended downward over the last 10 years, with releases being down by 80% compared to 2003. (See ***Releases to Water*** on page 9 for additional information.)
- The total amount of TRI chemicals reported as released on-site to air for 2013 decreased by 110,000 pounds (10%), compared to 2012. 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 86%. (See ***Releases to Air*** on page 8 for additional information.)
- The total amount released on-site to land decreased by 155,000 pounds (50%) compared to 2012. This was primarily the result of Indian River Generating Station reporting a reduction of 90,000 pounds in the release of barium compounds to land. Releases to land have trended downward 88% since 2003. (See ***Releases to Land*** on page 10 for additional information.)
- The trend for on-site release of carcinogens decreased by 59,000 pounds (30%) for 2013, and has declined 717,000 pounds, or 84%, since 1998. Decreases in on-site releases for 2013 were reported for vinyl acetate, vinyl chloride, and lead compounds. (See ***Carcinogenic TRI Chemicals*** on page 25 for additional information.)
- The trend for on-site release of persistent bioaccumulative toxins (PBTs) decreased by 3,700 pounds (30%) for 2013. 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 19 for additional information.)
- Total TRI waste, including releases on-site, transfers off-site for treatment and disposal, and waste management on-site, decreased by 0.4%, or 1.9 million pounds from 2012. On-site release amounts, reported above, were down 22%. Transfers off-site decreased 12%, primarily the result of decreases in off-site disposal and energy recovery. Waste managed on-site increased by 0.3%, primarily due to increases in on-site recycling.

TOXICS RELEASE INVENTORY

Introduction

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 2013 included 593 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 27 years of reported data. Most releases reported under TRI are also regulated through Federal and/or State permits.

This report contains detail from every 2013 TRI report or report revision from Delaware facilities received by DNREC as of October 1, 2014. 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 46 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 19).

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 2013, 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 2013 is shown in Table 5 on page 15. NAICS codes were used in TRI starting in 2006 to provide more discrimination between the various industry sectors reporting to TRI.

TABLE 1
COVERED INDUSTRIES

NAICS CODES	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
331	Primary Metal Manufacturing
332	Fabricated Metal Product Mfg.
334	Computer and Electronic Product Mfg.
335	Electrical Equipment Mfg.
337	Furniture Manufacturing
339	Misc. Manufacturing
424	Wholesalers, Non-Durable Goods
454	Non-Store Retailers
928	National Security

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, 14% of the TRI reports were filed as Form A for 2013. 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 for 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.

TOXICS RELEASE INVENTORY

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 (NH_3) and volatile organic compounds (VOCs), for 2008. NH_3 and many VOCs are also TRI chemicals. See page 6, which shows that total TRI on-site releases for 2013 are 4,032,792 pounds, or 2,016 tons, about 26% of the on-road vehicle amount for these TRI chemicals.

- **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 2013, 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 - Hydrogen Sulfide and PACs.** 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, accounting for 84%. 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 2013. PACs are reported as a category, so it is not possible to determine if any of the 8 facilities reporting PACs reported any of the four new PAC chemicals.

- **Upcoming Changes -** For the 2014 reporting year, O-nitrotoluene is being added to the list of reportable TRI chemicals. EPA published the final rule for the addition of this chemical on November 7, 2013. Reports for the chemical will be due July 1, 2015. Per the National Toxicology Program (NTP), o-nitrotoluene has been classified as “reasonably anticipated to be a human carcinogen”.

2013 Data Summary

TABLE 2
2013 TRI DATA SUMMARY
(IN POUNDS)

	2012	2013
No. of Facilities	60	61
No of Form As	33	33
No of Form Rs	202	195
No. of Chemicals	88	89
On-site Releases		
Air	1,109,211	998,934
Water	3,777,904	2,881,677
Land	306,702	151,956
Total On-Site Releases	5,193,817	4,032,567
Off-Site Transfers		
POTW's	814,866	935,842
Recycle	9,383,706	9,009,366
Energy Recovery	2,556,954	1,874,068
Treatment	196,890	251,834
Disposal	2,419,683	1,506,791
Total Off-Site Transfers	15,372,098	13,577,900
On-Site Waste Mgmt.		
Recycle	9,326,213	11,642,121
Energy Recovery	16,227,012	15,659,902
Treatment	376,100,649	375,430,183
Total On-Site Mgmt.	401,653,874	402,732,206
Total Waste	422,219,789	420,342,673

Delaware 2013 and 2012 TRI totals for on-site releases, off-site transfers, and wastes managed on-site are displayed in Table 2 for direct comparisons. For 2013, 61 facilities submitted 228 reports for 89 different chemicals. Total on-site releases were lower by 22% (1,161,000 pounds). This decrease was primarily driven by reductions in releases of nitrate compounds to water reported by the Delaware City Refinery and Perdue Georgetown, down 775,029 pounds and 141,578 pounds respectively. Off-site transfers were down 12%, with significant reductions in off-site energy recovery and off-site disposal. On-site waste management activities increased by 0.3% compared to 2012. Decreases in on-site energy recovery and on-site treatment were offset by increases in on-site recycling.

Types of Data

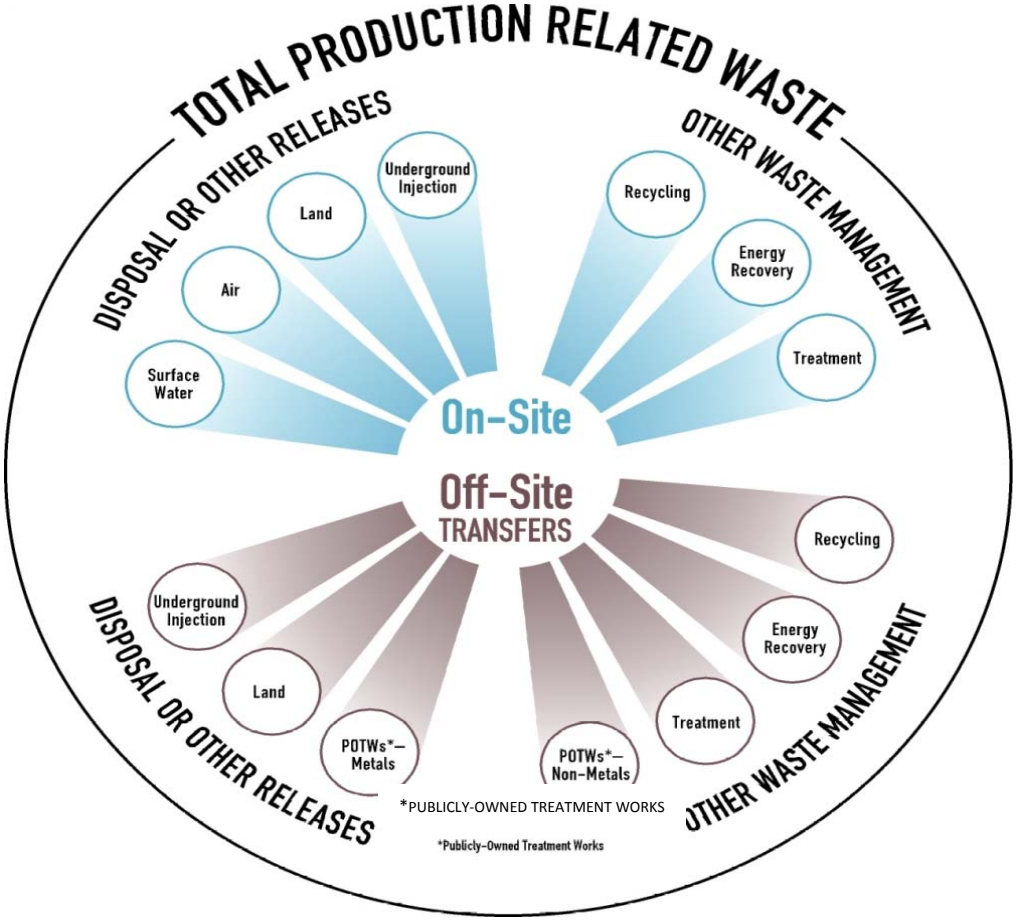
Table 2 lists the categories of data reported to Delaware and the EPA under the TRI program. Within the reports received from facilities, the data is broken down into additional sub-categories. For ease of presentation in this report, the data has been grouped into these categories as described below.

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.

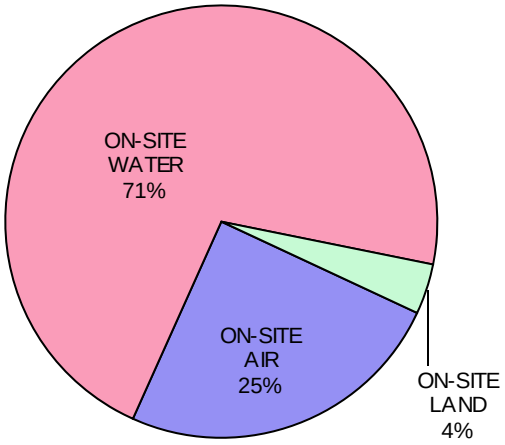


Amounts Reported: The amounts reported are in pounds per year, with a few exceptions, such as dioxins and dioxin like compounds, which are reported in grams. Certain chemical compounds have only the weight of the specific ion or elemental form reported instead of the entire compound, such as nitrate 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

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 2013 made up 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
2013 ON-SITE RELEASES



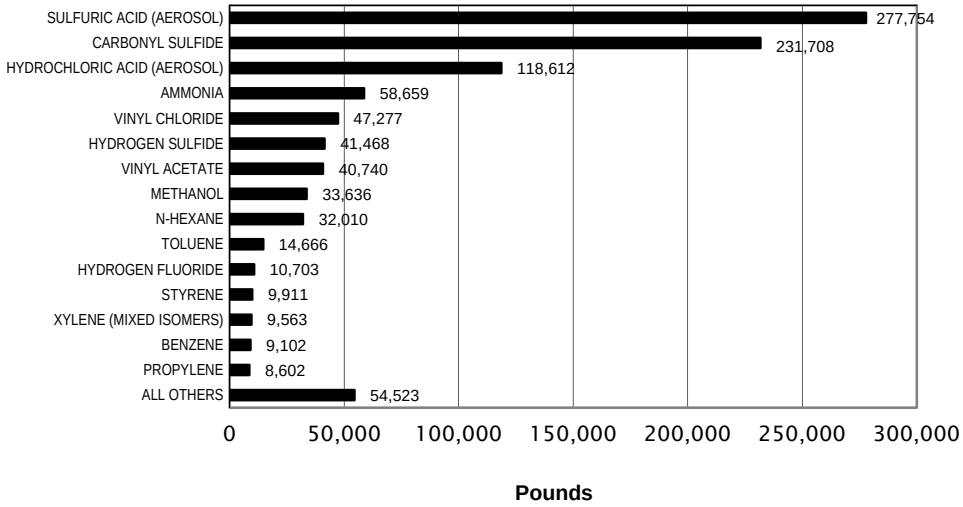
TOTAL REPORTED
4,032,792 POUNDS

Figure 1 shows the totals of on-site releases reported in Delaware. A large portion, 71% 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 2003-2013 for all reported on-site releases is on page 32, and a trend graph for the top five chemicals is on page 33. 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 2013. Sulfuric Acid aerosol (gas) releases, which make up 28% 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 66% compared to 2012, with the refinery being in full operation. The second largest air-release, carbonyl sulfide (23%), is mostly released by the DuPont Edge

FIGURE 2
TOP 15 CHEMICALS RELEASED TO AIR



Moor facility as a gas by-product of the titanium dioxide production process. Hydrochloric acid aerosol (gas) releases, which rank third in releases to air (12%), are primarily formed as a result of impurities being released within coal and oil used during the combustion process, typically from large electric generating facilities. Hydrochloric acid releases were reduced by 55,937 pounds or 33% compared to 2012 and by almost 1.5 million pounds compared to 2011 or 93%, mainly due to reductions made by the Indian River Generating Station. Ammonia, which ranks fourth in releases to air (8.5%), can be used as a refrigerant for petrochemical, food processing, and chemical facilities and is also a by-product of air pollution control activities. Seven facilities reported releases of ammonia, with Delaware City Refinery releasing the largest amount to air at 51% of the total or 29,968 pounds. Formosa Plastics reported all of the releases to air of vinyl acetate and vinyl chloride, which made up 4.1% and 4.7%, respectively. Vinyl Acetate is a raw material used in certain products, while vinyl chloride is used in the manufacture of polyvinylchloride (PVC). Hydrogen sulfide, which accounted for 4.2% of all on-site releases to air, was predominantly released to air by the Delaware City Refinery (50%) and by the Perdue Georgetown facility (43%). Methanol releases, 3.4% of all releases to air, were reported by nine facilities with BASF Newport reporting the highest amount, 21,996 pounds, or 65%. N-hexane accounted for 3.2% of all releases to air, with the Delaware City Refinery the largest amount, 30,085 pounds or 94%. The remaining chemicals in Figure 2 were each less than 2.0% of total on-site releases to air.

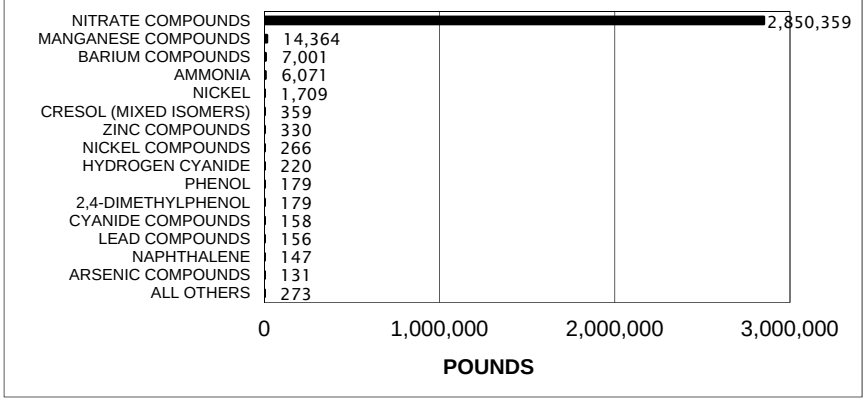
Releases to Water

Releases to water made up the largest portion of on-site releases at 71%. 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 78 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.

TABLE 3
TRI CHEMICALS RELEASED TO WATER BY WATER BODY IN 2013

WATER BODY	NO. OF FACILITIES	NO. OF REPORTS	**RELEASE** (IN POUNDS)
ARMY CREEK	2	3	**90**
CHRISTINA RIVER	2	8	**0**
DELAWARE RIVER	5	52	**2,662,551**
DRAWYER CREEK TRIBUTARY	1	2	**14**
ISLAND CREEK	1	5	**0**
MUDDY RUN	1	1	**0**
NAAMANS CREEK	1	6	**246**
SAVANNAH DITCH	1	1	**219,000**
STATE TOTAL		78	**2,881,902**

FIGURE 3
TOP 15 CHEMICALS RELEASED TO WATER



The Delaware River received 92% of all releases to water, the Savannah Ditch 8%, and

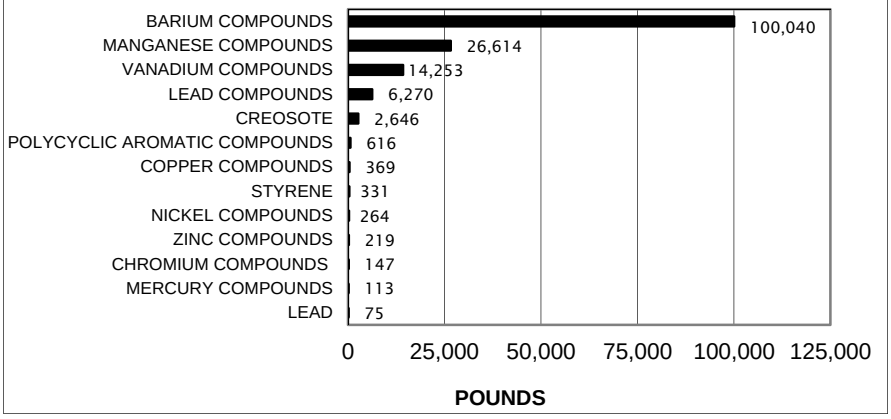
all the others combined were less than 0.1%. Figure 3 shows the relative relationship of the top 15 TRI chemicals to all other chemicals (30) reported as released to water. This clearly shows the influence that nitrate compounds have on the total. The nitrate compounds category was the top chemical released, (98.9% of the total release to water), followed by manganese compounds (0.50%), barium compounds (0.24%), and ammonia (0.21%). 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 2,631,359 pounds of nitrate compounds to water for 2013, and Perdue Georgetown reported 219,000 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, Evraz Claymont Steel, Johnson Controls Battery Plant, and V&S Delaware Galvanizing are the facilities reporting releasing of these metal compounds to water. DuPont Edge Moor reported 99.9% of the manganese compounds and 100% of the barium compounds released to water.

Table 4 shows the total amount of TRI chemicals for 2013 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 decreased by 896,000 pounds in 2013, largely the result of decreases in the reported release of nitrate compounds by the Delaware City Refinery and the Perdue Georgetown Facility. Additional discussion about these releases can be found in the ***Trend Analysis*** section starting on page 29.

TABLE 4
TRI CHEMICALS
RELEASED TO WATER BY BASIN

BASIN	RELEASE (IN POUNDS)	PERCENT
CHESAPEAKE	0	0.0%
DELAWARE BAY	2,859,565	99.2%
INLAND BAYS	0	0.0%
PIEDMONT	22,336	0.8%
STATE TOTAL	2,881,902	100.0%

FIGURE 4
13 CHEMICALS RELEASED TO LAND



Releases to Land

Releases to land are shown in Table 2 on page 6. These releases are relatively small, amounting to 4% of total on-site releases. Figure 4 shows the contribution for the 13 chemicals reported as being released to land. Nearly all the releases to land

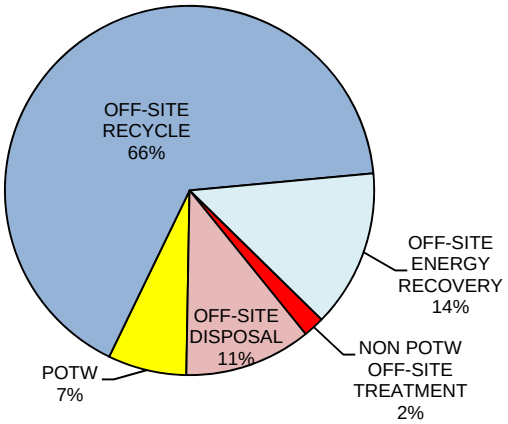
are metals and metal compounds except for creosote, polycyclic aromatic compounds (PACs), and styrene. Most of the metals and metal compounds reported are formed during combustion from metal impurities that exist in coal or oil, or in the base metal from metal working processes. Barium compounds, manganese compounds, vanadium compounds, and lead compounds, the top 4 metals and metal compounds reported, accounted for 97% of all on-site releases to land and were primarily released by the Indian River Generating Station. Creosote accounts for 2% of all on-site releases to land and was released by Delaware City Refinery. All other chemicals accounted for approximately 1% 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 29.

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 ***TRI Facility Profiles,*** see ***Access to TRI Files*** under the ***Further Information Section*** on page 46.

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 12% (1,794,194 pounds) since 2012. Off-site transfers account for 3% of total TRI waste and are 3 times larger than the amount released on-site. Overall increases occurred in treatment and POTWS, and reductions occurred in recycling, energy recovery, and disposals. The largest reductions include Dupont Edge Moor reporting a decrease of 817,090 pounds of manganese compounds being transferred off-site for disposal and the 756,100 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 522,534 pounds in off-site recycling of lead compounds by reported by the Johnson Controls Battery Plant. 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.

FIGURE 5
2013 OFF-SITE TRANSFERS



TOTAL REPORTED: 13,577,900 POUNDS

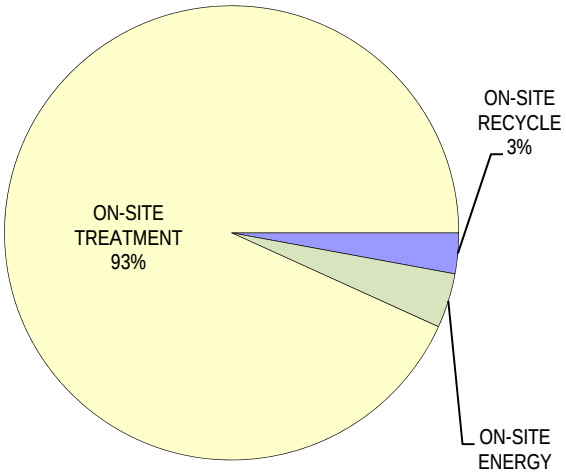
TRI chemicals in wastes are transported by various means from Delaware to their final destinations, many of which

are out-of-state. For 2013, TRI chemicals were sent to 20 states, some as far away as Missouri and Texas, in addition to locations in Delaware. Over 90% 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 66% of the amounts within the five categories in off-site transfers, while energy recovery accounted for 13.8%, disposals accounted for 11.1% of the transfers, transfers to POTWs accounted for 6.9%, and non-POTW treatment was 1.9%. Ninety-three percent of the transfers to POTWs were to the City of Wilmington POTW, and all but 10,555 pounds of the 935,842 pounds treated at all POTWs were treated at Delaware POTW facilities. BASF Newport and Air Liquide-Medal combined for 74% of the total TRI chemical transfers to the Wilmington POTW. See page 38 for more information on Delaware facilities receiving TRI chemicals from other Delaware TRI facilities and from out-of-state TRI facilities.

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. 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 95.8% 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 ***TRI Facility Profiles,*** see ***Access to TRI Files*** under the ***Further Information Section*** on page 46.

FIGURE 6
2013 ON-SITE WASTE MANAGEMENT



TOTAL REPORTED:
402,732,206 POUNDS

Waste Treatment (375,430,183 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 355,588,228 pounds (95%) of the TRI waste treated on-site. Treatment of hydrogen sulfide at the Delaware City Refinery in the amount of 336,215,341 pounds was the highest single on-site treatment amount.

Recycled waste (11,642,121 pounds) is the quantity of toxic material recovered at the facility and made available for further use. Rohm & Haas

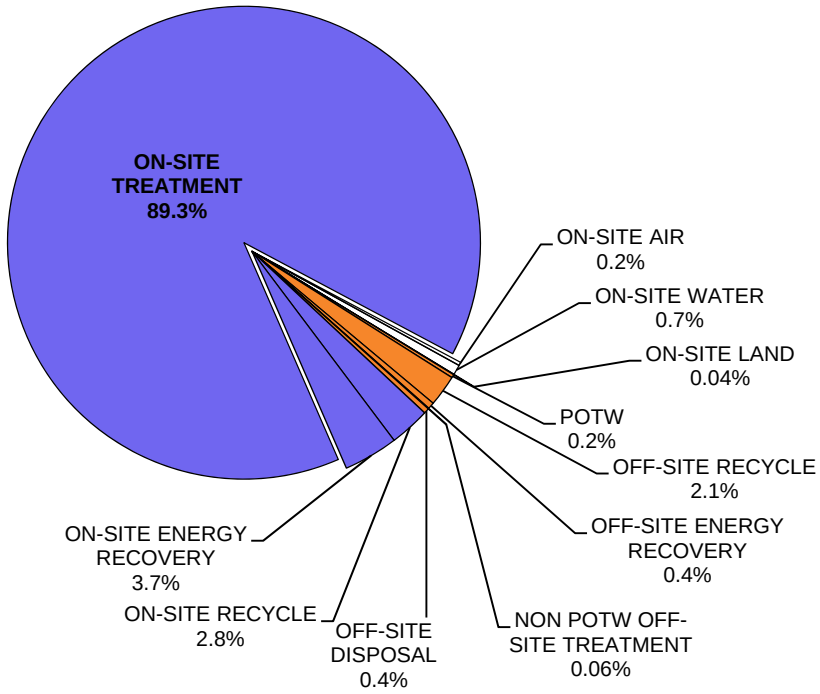
(B2, B3, B8) recycled n,n-dimethylformamide, Air Liquide-Medal recycled methanol and n-hexane, and Orient recycled aniline, with these facilities combining to report 92% of the total amount recycled on-site.

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 2013, the refinery reported 15,659,902 pounds of TRI chemicals processed on-site for energy recovery, with ammonia accounting for 96% or 15.1 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, 3% is transferred off-site for treatment or disposal, and about 96% 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 2013 TRI CHEMICAL MANAGEMENT
TOTAL REPORTED: 420,342,898 POUNDS



TOXICS RELEASE INVENTORY

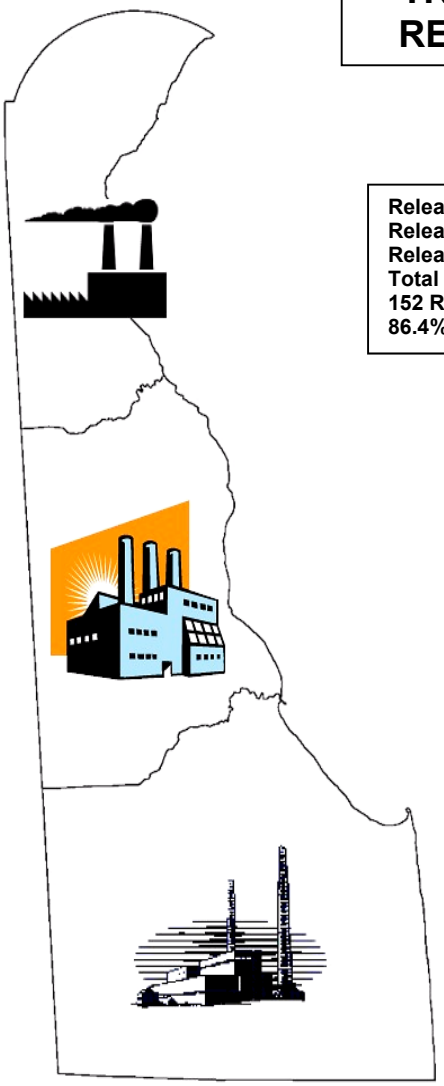
2013 Data Detail

On-Site Releases by County

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

FIGURE 8

TRI ON-SITE RELEASES REPORTED BY COUNTY



NEW CASTLE

Releases to Air = 805,665 Pounds
Releases to Water =2,662,902 Pounds
Releases to Land = 14,222 Pounds
Total On-Site Releases = 3,482,789 Pounds
152 Reports, 32 Facilities
86.4% of Statewide Releases

KENT

Releases to Air = 17,711 Pounds
Releases to Water = 0 Pounds
Releases to Land = 14 Pounds
Total On-Site Releases = 17,725 Pounds
29 Reports, 12 Facilities
0.4% of Statewide Releases

SUSSEX

Releases to Air = 175,558 Pounds
Releases to Water = 219,000 Pounds
Releases to Land = 137,720 Pounds
Total On-Site Releases = 532,278 Pounds
47 Reports, 17 Facilities
13.2% of Statewide Releases

Source: DNREC 2013 TRI Database 10-1-14

Facility Locations and Information

The facility key map in the ***TRI Facility Profiles*** (see ***Access to TRI Files*** under the ***Further Information Section*** on page 46) 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. The facility profiles provide a facility overview and the corresponding TRI information for each facility reporting in Delaware.

NAICS Industry Groups

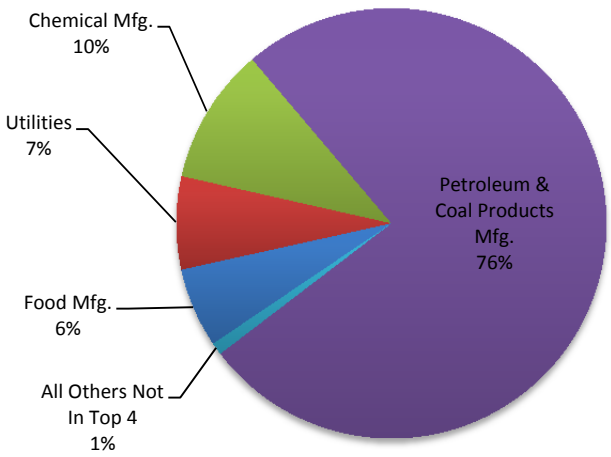
Table 5 provides a description of each North American Industrial Classification System (NAICS) industry group and the number of facilities in each group that reported in Delaware, along with the total reported amounts for each NAICS code. This table also provides on-site releases, off-site transfers,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

TABLE 5
2013 TRI DATA BY PRIMARY NAICS GROUP
(in pounds)

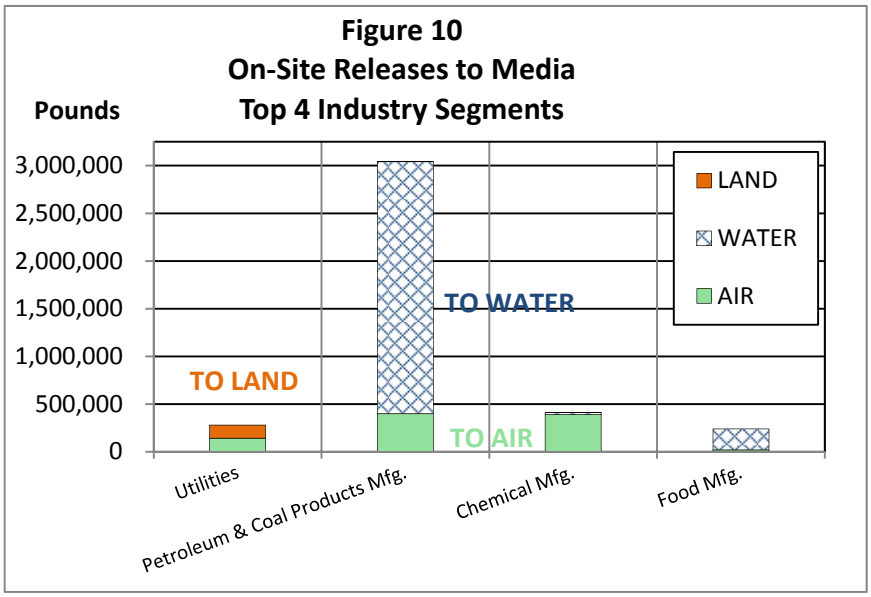
NAICS CODE	INDUSTRY GROUP	REPORTS	FACILITIES	FORM A	FORM R	ON-SITE RELEASE	OFF-SITE TRANSFERS	ON-SITE WASTE MGMT.
212	Mining	4	1	2	2	168	0	0
221	Utilities	15	2	1	14	280,114	31	3,372,390
311	Food Mfg.	21	9	15	6	240,317	0	236,265
313	Textile Products Mfg.	9	4	1	8	7,129	1,865,692	4,041,314
324	Petroleum & Coal Products Mfg.	44	4	4	40	3,043,549	179,538	371,248,681
325	Chemical Mfg.	79	17	5	74	411,982	3,822,505	17,958,427
326	Plastics & Rubber Mfg.	11	4	0	11	17,715	309,747	5,677,613
327	Non-metalic Mineral Product Mfg.	4	4	0	4	75	0	0
331	Primary Metal Mfg.	12	2	0	12	19,627	1,950,002	0
332	Fabricated Metal Product Mfg.	7	4	0	7	352	415,145	197,516
333	Equipment Mfg.	3	1	0	3	10	577,618	0
334	Computer and Electronic Product Mfg.	1	1	0	1	0	212	0
335	Electrical Equipment Mfg.	3	2	0	3	155	4,433,080	0
337	Furniture Manufacturing	1	1	0	1	5,717	0	0
339	Misc. Manufacturing	4	2	0	4	5,584	24,330	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	298	0	0
	TOTAL	**228**	**61**	**33**	**195**	**4,032,792**	**13,577,900**	**402,732,206**

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 56,830 pounds of on-site releases, or 1.4% of the 2013 on-site release total.

FIGURE 9
TOP 4 NAICS INDUSTRIES FOR 2013
PERCENT ON-SITE RELEASE



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 51% of the releases to air and 49% of the releases to land. Chemical manufacturing reported most of their releases were to air at 95%. 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 3,820,076 pounds, or 95% of all on-site releases. Of the 4,032,792 pounds that were reported as released on-site by all 61 facilities Statewide, the top 15 facilities accounted for total releases of 4,009,773 pounds, or 99% of the total on-site releases.

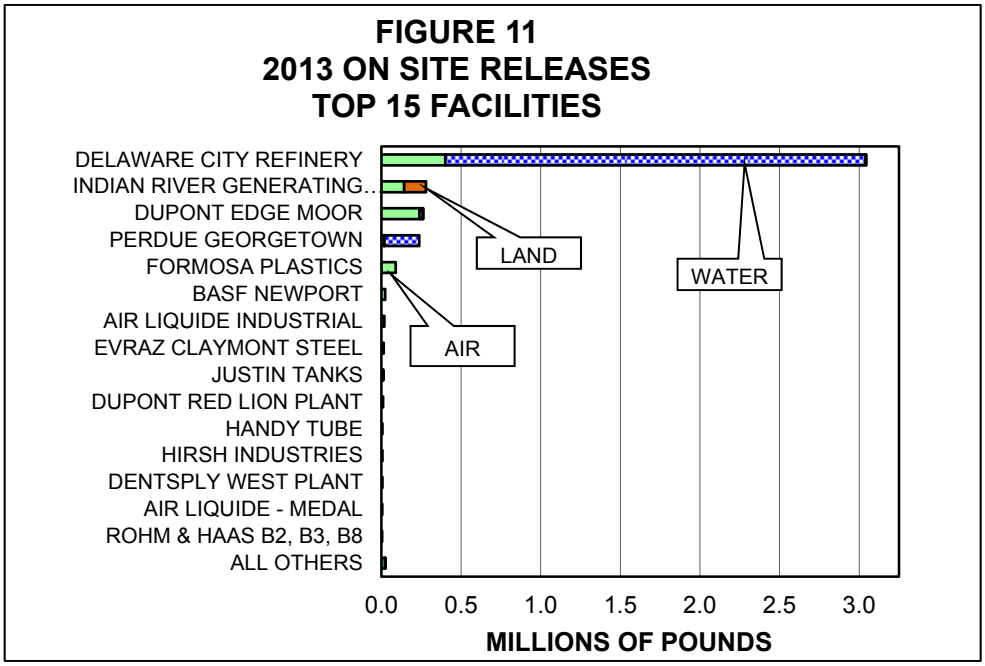


TABLE 6
TOP 15 FACILITIES 2012 AND 2013 RANKING BY ON-SITE RELEASE
(in pounds)

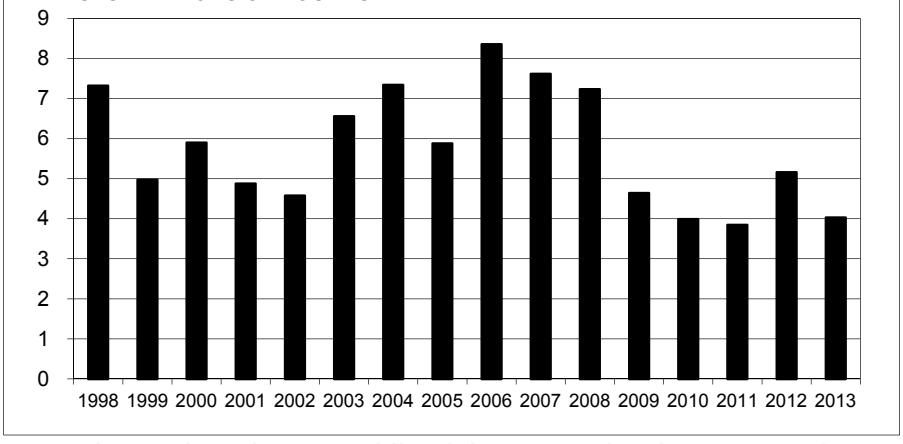
2012 RANK	2013 RANK	FACILITY	2013 TOTAL AIR	2013 TOTAL WATER	2013 TOTAL LAND	2013 ON-SITE RELEASE	2012 ON-SITE RELEASE	2012 TO 2013 CHANGE IN RELEASES	
1	1	DELAWARE CITY REFINERY	400,441	2,640,461	2,646	3,043,548	3,690,000	(646,451)	-18%
2	2	INDIAN RIVER GENERATING STATION	141,970	0	137,384	279,354	489,676	(210,322)	-43%
4	3	DUPONT EDGE MOOR	237,528	22,030	616	260,174	217,157	43,018	20%
3	4	PERDUE GEORGETOWN	18,000	219,000	-	237,000	409,792	(172,792)	-42%
5	5	FORMOSA PLASTICS	89,502	-	-	89,502	150,868	(61,366)	-41%
8	6	BASF NEWPORT	23,279	-	-	23,279	19,645	3,634	18%
DNR	7	AIR LIQUIDE INDUSTRIAL	17,792	-	-	17,792	DNR	-	-
9	8	EVRAZ CLAYMONT STEEL	2,370	306	10,905	13,581	18,032	(4,451)	-25%
10	9	JUSTIN TANKS	9,688	-	331	10,019	12,555	(2,536)	-20%
13	10	DUPONT RED LION PLANT	9,325	-	-	9,325	8,499	826	10%
NR	11	HANDY TUBE	6,046	-	-	6,046	4,610	1,436	31%
NR	12	HIRSH INDUSTRIES	5,717	-	-	5,717	3,925	1,792	46%
15	13	DENTSPLY WEST PLANT	5,584	-	-	5,584	4,929	655	13%
12	14	AIR LIQUIDE - MEDAL	4,694	-	-	4,694	8,668	(3,974)	-46%
NR	15	ROHM & HAAS B2, B3, B8	4,157	-	-	4,157	4,161	(4)	0%
		ALL OTHERS	**22,840**	**104**	**75**	**23,019**	**151,301**	**(110,489)**	**-85%**
		TOP 15	**976,094**	**2,881,797**	**151,882**	**4,009,773**	**5,042,516**	**(1,050,536)**	**-20%**
		STATE TOTALS, ALL FACILITIES	**998,934**	**2,881,902**	**151,956**	**4,032,792**	**5,193,817**	**(1,161,025)**	**-22%**

NR- Not ranked in the top 15 for 2012
DNR- Did not report in 2012
Source: 2012 and 2013 DNREC TRI Databases, October 2014

Table 6 shows the 2013 ranking of the top 15 facilities along with their 2012 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 2012 to 2013 is also shown, and some of these changes are significant.

Figure 12 shows the totals for reported on-site releases for the top 15 facilities during 1998-2013. The total on-site release trend for these 15 facilities is down 1,161,025 pounds (22%) since 2012 and down 3.3 million pounds (44%) since 1998 after reaching a peak of 8.4 million pounds in 2006. These facilities reported 99% of the total on-site releases in the State for 2013, while the remaining 46 facilities reported 1%.

FIGURE 12
TOP 15 FACILITIES
ON-SITE RELEASE



Six facilities of the top 15 facilities reported an increase in on-site releases, while eight reported a decrease and one facility did not report release data for 2013. 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. Changes in production may also affect releases from a facility; seven of the top 15 facilities reported a decrease in production for 2013, and all but one of the seven showed a decrease in releases. The largest changes reported by the top 15 facilities in on-site releases were decreases in the release of nitrate compounds to water by the Delaware City Refinery and the Perdue Georgetown facility, down by 775,029 and 141,578 pounds respectively compared to 2012. Facility specific information is available via the ***TRI Facility Profiles,*** see ***Access to TRI Files*** under the ***Further Information Section*** on page 46.

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 3-4 facilities, offset by 1-2 new facilities that started to report each year. 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, 2003-2013

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
2013 DELAWARE PBT CHEMICALS AND REPORTING THRESHOLDS
(pounds/year)

Chemical or Chemical Category	Threshold (Pounds)	2013 REPORTS
Aldrin	100	0
Benzo[g,h,I]perylene	10	1
Chlordane	10	0
Dioxin and dioxin-like compounds category	0.1 grams	6
Heptachlor	10	0
Hexachlorobenzene	10	1
Isodrin	10	0
Lead	100	6
Lead and lead compounds	100	8
Mercury	10	2
Mercury compounds	10	5
Methoxychlor	100	0
Octachlorostyrene	10	1
Pendimethalin	100	0
Pentachlorobenzene	`	1
Polychlorinated biphenyls (PCBs)	10	1
Polycyclic aromatic compounds category (PACs)	100	6
Tetrabromobisphenol A	100	0
Toxaphene	10	0
Trifluralin	100	0

Table 7 provides a current list of the PBT chemicals and their thresholds, and the number of reports received for each chemical for 2013.

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 21-23 for additional detail on dioxins.

Table 8 shows the results of PBT reporting for 2011-2012 compared to total 2013 TRI data. The total count of PBT reports, 38, is lower than the counts of 48-49 for recent years. PBT on-site releases for 2013 comprise 0.22% of the total TRI on-site releases. Total PBT wastes are 1.08% of total TRI wastes. No PBT reports can be filed on Form A.

PBT on-site releases were lower for 2013 by 3,719 pounds (68%); with the greatest reduction coming from the Indian River Generating Station with lower lead compounds released to land by 4,158 pounds. Lead compounds, largely released from coal-fired power plants, made up 80% of the total on-site PBT releases for 2013. Since 2003, the trend of PBT on-site releases is down 68%.

TABLE 8
2013 TRI PBT DATA SUMMARY
(IN POUNDS)

	PBTs only 2011	PBTs only 2012	PBTs only 2013
No. of Facilities	26	21	21
No. of Form A's	NA	NA	NA
No. of Form R's	48	42	38
No. of Chemicals	12	11	11
On-Site Releases			
Air	1,180	1,333	1,499
Water	132	70	175
Land	11,212	11,062	7,073
On-Site Releases	12,523	12,466	8,747
Off-Site Transfers			
POTW's	8	1	3
Recycle	2,967,066	4,102,492	4,525,143
Energy Recovery	0	0	0
Treatment	0	0	0
Disposal	19,352	29,517	23,515
Total Transfers	2,986,426	4,132,010	4,548,661
On-Site Waste Mgmt.			
Recycle	280	1,385	2,220
Energy Recovery	0	0	0
Treatment	570	864	897
Total On-Site Mgmt.	850	2,249	3,117
Total PBT Waste	2,999,799	4,146,725	4,560,525

The total PBT waste amount increased by 413,800 pounds (10%) for 2013 compared to 2012. The primary reason for this increase was the increased transfers of lead compounds to off-site recycling by the Johnson Controls Distribution facility.

Table 9, on page 23, shows the amounts of each PBT chemical reported as released by the TRI reporting facilities in 2013. Honeywell reported the largest PBT release to air, 445 pounds of polycyclic aromatic compounds (PACs). Dupont Edge Moor reported the largest PBT release to water, 84 pounds of lead compounds. The Indian River Generating Station reported the largest release to land, 6,216 pounds of lead compounds. Over 96% of the PBT amounts transferred off-site for recycle was lead compounds from Johnson Controls Battery Plant and Distribution Center, and Evraz Claymont Steel recycled another 2.5%. Additional detail for mercury and mercury compounds, another important PBT, is in a separate section on page 23.

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 492 pounds of benzo(g,h,i)perylene and 405 pounds of polycyclic aromatic compounds (PACs) on-site. IKO recycled 551 pounds of PACs on-site and V&S Galvanizing recycled 1,669 pounds of lead on-site. ***Appendix I*** shows the PBT data detail, listing each PBT chemical and the facilities reporting on it.

TABLE 9
2013 PBT RELEASE SUMMARY
(REPORTED AMOUNTS IN POUNDS)

2013 PBT CHEMICAL	FORM R REPORTS	ON-SITE RELEASES				TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
		TOTAL AIR	TOTAL WATER	TOTAL LAND	ON-SITE TOTAL		
BENZO (G,H,I)PERYLENE	1	0.00	5.00	0.00	5.00	0.00	492.00
DIOXIN AND DIOXIN-LIKE COMPOUNDS	6	0.0200	0.0100	0.0000	0.0300	1.16	0.00
HEXACHLOROBENZENE	1	0.0800	0.5500	0.0000	0.6300	196.78	0.00
LEAD	6	5.61	6.80	74.81	87.22	4,871.80	1,669.00
LEAD COMPOUNDS	8	565.04	155.70	6,269.70	6,990.44	4,542,396.37	0.00
MERCURY	2	17.11	0.00	0.00	17.11	1,086.25	0.00
MERCURY COMPOUNDS	5	172.68	2.01	113.20	287.89	9.65	0.00
OCTACHLOROSTYRENE	1	0.00	0.35	0.00	0.35	4.25	0.00
PENTACHLOROBENZENE	1	0.09	0.09	0.00	0.1800	8.04	0.00
POLYCHLORINATED BIPHENYLS (PCB's)	1	0.00	0.00	0.00	0.0000	4.31	0.00
POLYCYCLIC AROMATIC COMPOUNDS	6	738.24	4.05	615.67	1,357.96	82.20	956.00
TOTALS	**38**	**1,499**	**175**	**7,073**	**8,747**	**4,548,661**	**3,117**

Source: 2013 DNREC TRI Database, October 2014
Dioxins are reportable in grams and have been converted to pounds for this report.
Four decimal places are used where small amountsa 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 2013, the amount was 13.7 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, the Indian River Generating Station reported dioxin number 7 (TEF = 0.003) as 57.75% of the total weight, but this was only 0.91% of the TEQ. The total on-site release amounts in pounds and their corresponding TEQ amounts reported by the six facilities that reported on dioxins in Delaware for 2013 were calculated and are presented in the Table 11. The 2013 total of 0.0303 pounds, or 13.7287 grams, was released on-site, which is up from the 2012 total of 0. 0.02754 pounds, or 12.4925 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 FACILITY	TOTAL ON-SITE TEQ, LBS.	ON-SITE TEQ RANK	TOTAL ON-SITE LBS. RELEASE	ON-SITE LBS. RANK
EVRAZ CLAYMONT STEEL	0.0012463	1	0.010087	1
EDGE MOOR/HAY ROAD POWER PLANTS	0.0002280	2	0.006811	2
DELAWARE CITY REFINERY	0.0001430	3	0.001168	4
DUPONT EDGE MOOR	0.0000323	4	0.011878	3
INDIAN RIVER POWER PLANT	0.0000059	5	0.000312	5
FORMOSA PLASTICS	0.0000005	6	0.000011	6
TOTALS	0.0016559		0.030267	

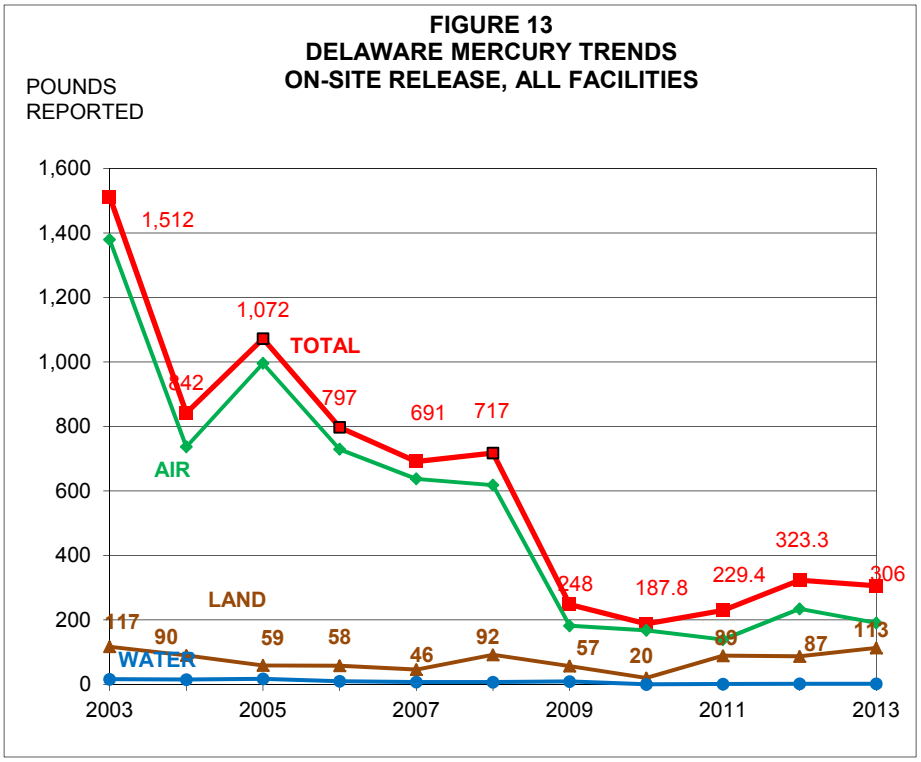
Mercury and Mercury Compounds

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 2013, total on-site releases of mercury and mercury compounds decreased 18 pounds (5%) to a total of 306 pounds. This was largely the result of decreases in releases to air by Evraz Claymont Steel. On-site releases of mercury and mercury compounds on a whole are down 80% since 2003.

Figure 13 shows the combined trend for mercury and mercury compounds, and how the trend is greatly influenced by on-site releases to air. The reduction from 2002-2004 was from reduced amounts reported by Occidental Chemical as it began closing its Delaware facility. Occidental reported a peak release of 1,097 pounds in 2000. As of 2012, Occidental fell below the reporting threshold.

FIGURE 13
DELAWARE MERCURY TRENDS
ON-SITE RELEASE, ALL FACILITIES

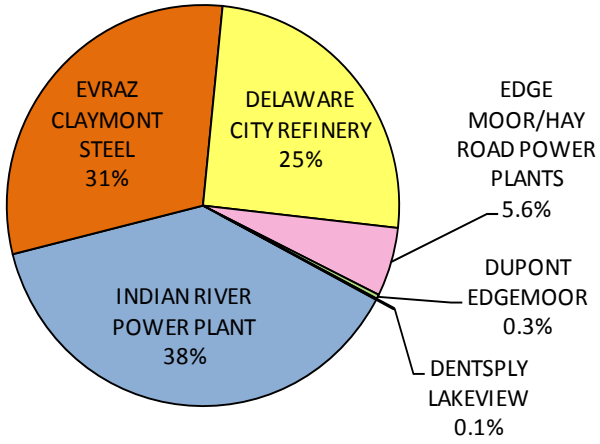


Indian River Generating was the largest contributor for on-site mercury releases in 2013, with the majority of releases to land. Evraz Claymont Steel facility reported the second highest release amount of mercury, with releases only to air.

Figure 14 shows the percentage contributed by each of the facilities that reported a mercury or mercury compound release in 2013. On-site release amounts for mercury and mercury compounds can also be found in ***Appendix F*** on page F-9 and ***Appendix I*** on page I-1.

Nationwide, the top three states releasing mercury and mercury compounds on-site for 2013 were: Nevada, 4,382,061 pounds mostly to on-site land from several mining facilities; Alaska, 406,360 pounds mostly to on-site land from several mining facilities; and Utah, 115,870 pounds mostly to on-site land from mining facilities. Delaware is #44 in the national rankings for total mercury and mercury compound releases (including on-site releases and off-site disposals) with 310 pounds.

FIGURE 14
2013 ON-SITE MERCURY RELEASES FROM DELAWARE FACILITIES



306 POUNDS REPORTED RELEASED ON-SITE

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 2013. 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 4.0 million pounds of TRI chemicals reported by facilities in Delaware as released on-site to the environment in 2013, 3.5% (139,449 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 47.

TABLE 12
CARCINOGENS REPORTED BY DELAWARE FACILITIES FOR 2013

CHEMICAL NAME	IARC	NO. OF REPORTS
4,4'-METHYLENEBIS(2-CHLOROANILINE)	1	2
ARSENIC COMPOUNDS	1	1
ASBESTOS (FRIABLE)	1	1
BENZENE	1	1
CHROMIUM COMPOUNDS	1	4
ETHYLENE OXIDE	1	1
NICKEL COMPOUNDS	1	4
VINYL CHLORIDE	1	1
1,3-BUTADIENE	2A	1
CREOSOTE	2A	1
HYDRAZINE SULFATE	2A	1
LEAD	2A	6
LEAD COMPOUNDS	2A	8
POLYCHLORINATED BIPHENYLS	2A	1
TRICHLOROETHYLENE	2A	1
2,4-DIMETHYLPHENOL	2B	1
COBALT COMPOUNDS	2B	1
DICHLOROMETHANE	2B	1
ETHYLBENZENE	2B	3
HEXACHLOROBENZENE	2B	1
HYDRAZINE	2B	1
NAPHTHALENE	2B	5
NICKEL	2B	4
NITROBENZENE	2B	1
P-CHLOROANILINE	2B	1
POLYCYCLIC AROMATIC COMPOUNDS	2B	6
PROPYLENE OXIDE	2B	1
STYRENE	2B	3
TETRACHLOROETHYLENE	2B	1
TOLUENE DIISOCYANATE (MIXED ISOMERS)	2B	3
VINYL ACETATE	2B	1
CHEMICALS = **31**	REPORTS = **68**	

Source: 2013 DNREC TRI Database, October 2014

Carcinogen Trends, 2003-2013

Thirty-seven facilities reported on carcinogens for 2013, two more than in 2012. The number of carcinogen reports increased by two to 68 in 2013, and the total number of reported carcinogenic chemicals was increased by two to 31. On-site releases of all carcinogens decreased 30% (58,643 pounds) compared to 2012, and have decreased 84% (717,462 pounds) since the peak in 1998. The large decrease in on-site releases was primarily due to Formosa Plastics, who made adjustments in their release calculations for vinyl acetate. Other carcinogens saw smaller increases in releases, with some facilities reporting decreases.

Table 13 shows amounts released on-site for carcinogens from 2003-2013, and Figure 15 shows the trend, which has been generally down during this time period.

TABLE 13
2003-2013 TRI CARCINOGENS
REPORTED ON-SITE RELEASES, NOT ADJUSTED

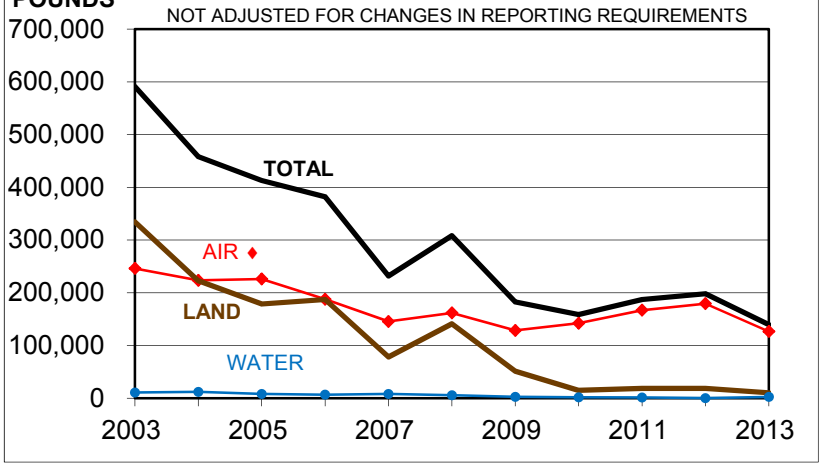
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KNOWN											
AIR	123,191	96,562	98,107	66,475	56,287	69,781	60,664	63,975	70,033	73,545	58,914
WATER	9,339	9,817	4,643	5,222	6,435	4,452	2,059	576	1,318	121	429
LAND	312,576	173,414	134,194	143,115	46,021	104,112	26,843	8,843	552	558	411
KNOWN TOTAL	445,106	279,793	236,944	214,812	108,743	178,345	89,567	73,394	71,903	74,224	59,753
PROBABLE											
AIR	24,216	27,417	23,600	18,946	18,628	14,604	11,112	15,175	16,040	7,008	7,480
WATER	4	4	4	4	4	5	5	1,146	124	58	163
LAND	0	0	0	0	8,212	8,661	7,115	5,404	17,458	17,017	8,991
PROBABLE TOTAL	24,220	27,421	23,604	18,950	26,845	23,270	18,232	21,725	33,623	24,083	16,633
POSSIBLE											
AIR	98,699	99,543	104,480	102,414	70,722	77,436	56,817	63,059	80,974	98,864	60,152
WATER	1,431	2,308	3,416	1,544	1,655	1,170	522	38	25	20	2,053
LAND	21,714	49,266	44,500	44,251	24,005	28,203	17,459	615	562	901	947
POSSIBLE TOTAL	121,844	151,117	152,396	148,210	96,382	106,809	74,798	63,713	81,561	99,785	63,152
TOTAL AIR	246,106	223,522	226,188	187,836	145,637	161,821	128,593	142,210	167,047	179,417	126,545
TOAL WATER	10,773	12,129	8,062	6,770	8,094	5,627	2,586	1,761	1,468	199	2,555
TOTAL LAND	334,290	222,680	178,694	187,366	78,238	140,976	51,417	14,862	18,572	18,476	10,348
GRAND TOTAL	591,169	458,331	412,943	381,972	231,970	308,424	182,596	158,832	187,087	198,092	139,449

For 2013, on-site releases of all carcinogens are down 30%, or 58,643 pounds. Figure 15 shows a trend for each of the category releases by media and the total reported carcinogen release. As in Figure 15, the general trend has been down. Releases to air and land largely influenced the total, depending on the year, while releases to 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 reported 43% of the total on-site carcinogen releases for 2013. 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 are down 14,470 pounds (20%) since 2012, largely a result of the decrease in release of vinyl chloride to air at Formosa Plastics. On-site releases of known carcinogens are down 523,380 pounds (89.8%) since 1998.

FIGURE 15
AIR, WATER, AND LAND
ALL CARCINOGENS
NOT ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS

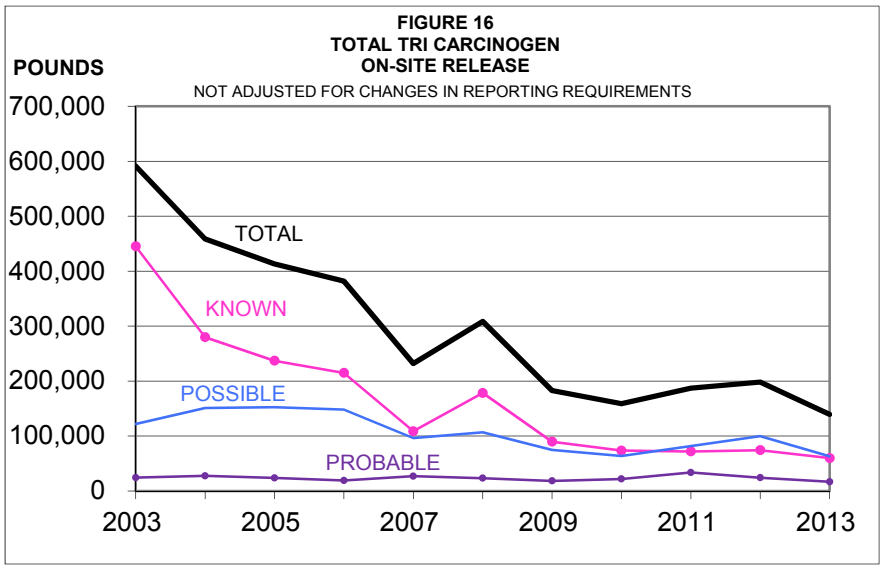


About 98.6% of the total known carcinogen amount was reported released on-site to air, 0.7% to land, and 0.7% to water for 2013. Releases to air of known carcinogens are 43% of all carcinogen on-site releases to air. Reported releases to air of known carcinogens

decreased by 20% (14,631 pounds) in 2013, and are down 90% from the amount reported in 1998.

Vinyl chloride, with a total release to air of 47,277 pounds and only reported by Formosa Plastics, is the highest (79%) of the total releases in the known carcinogen category and also the highest of all 31 carcinogens reported. Vinyl chloride contributed 80% of the known carcinogen category releases to air in 2013, 37% of all carcinogen releases to air, and 34% of carcinogen total on-site releases in 2013. The second highest known carcinogen in 2013 was benzene. Benzene, largely released to air, and all from the Delaware City Refinery, has declined 84% from 57,959 pounds released in 1995 (from the Delaware City Refinery and the now closed Metachem facility) to 9,113 pounds in 2013. Benzene made up 15% of the known carcinogen releases to air for 2013, down from 23% for 1995.

FIGURE 16
TOTAL TRI CARCINOGEN
ON-SITE RELEASE
NOT ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS



Ethylene oxide, all of which was released to air (2,432 pounds), ranks third in total on-site releases in the known carcinogen category. Croda reported all of the ethylene oxide releases on-site for 2013, up from 2,245 pounds reported for 2012.

Nickel compounds rank fourth in total on-site releases in the known carcinogen category at 556 pounds. The Evraz Claymont Steel facilities and DuPont Edge Moor reported most of the nickel compounds released for 2013. Total releases of nickel compounds include 4.7% released to air, 47.8% released to water, and 47.5% released to land. Nickel compounds contributed 62% (266 pounds) of all the known carcinogen releases to water, with arsenic compounds releases contributing 31% (131 pounds).

Probable Carcinogens

This category has the least number of chemicals (7) and amounts released on-site (12%), but has some important chemicals in it, such as lead, trichloroethylene (TCE), and polychlorinated biphenyls (PCBs). The majority (54%) of the six probable carcinogens reported was released on-site to land, while 45% was released to air, and 1% was released to water during 2013.

Lead compounds had the highest reported amount of on-site release of a probable carcinogen, with 6,990 pounds for 2013, a decrease from 11,239 pounds reported in 2012. The Indian River Generating Station reported the highest release, 6,217 pounds to land and 74 pounds released to air, or 90% of the 8 facilities reporting lead compounds. Evraz Claymont Steel facility was second, reporting 250 pounds released to air, 53 pounds released to land, and 54 pounds released to water. The remaining 9 facilities had smaller amounts

reported as released to air, water, or land.

TCE reported by Handy Tube was the second highest release of a probable carcinogen with 6,046 pounds reported as released to air. On-site releases increased 1,436 pounds (31%) from 2012. TCE releases have trended downward, declining by 79% from 1995-2013, down from 29,332 pounds reported for 1995 to 6,046 pounds for 2013.

The probable carcinogen on-site release total decreased by 7,450 pounds (31%) for 2012-2013 and is now at 16,663 pounds, 31% of the 1998 amount.

Possible Carcinogens

This category has the most chemicals, reports, and amounts, reporting 45% of all on-site release amounts for carcinogens. About 95% of the total possible carcinogen amount is reported as released on-site to air, 3% to land, and 1% to water. The trend for 2013 is down by 37%, or 36,633 pounds, and down 71%, or 157,068 pounds, since 1998. The highest chemical release in this category is vinyl acetate at 40,740 pounds, all of which was reported released to air by Formosa Plastics. Vinyl acetate makes up 65% of all possible carcinogen on-site releases. Reported on-site releases of vinyl acetate decreased by 38,254 pounds (48%) for 2013.

Styrene is the second highest release in the possible carcinogen category for 2013, with reports totaling 10,247 pounds, all but 336 pounds to air. Justin Tanks reported 9,688 pounds of styrene released to air and 331 pounds released to land, down from 12,555 pounds reported for 2012 and 98% of the total styrene release for 2013. The other facilities reporting styrene were BASF Seaford with 233 pounds and the Delaware City Refinery with 18 pounds. Reported styrene releases for 2013 increased by a total of 991 pounds (8.4%).

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, 1990-2013

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:

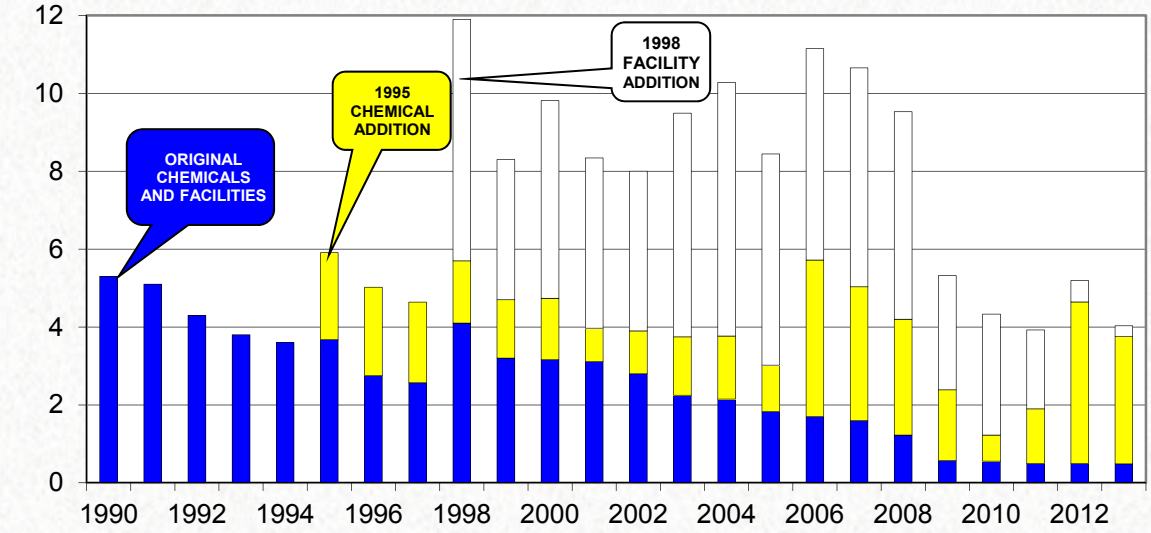
- **Chemical List Changes -1995**
  For reporting year 1995 and beyond, the EPA significantly expanded the list of chemicals. The list increased by 282 chemicals and chemical categories, added to the original list of 238 chemicals. Also during 1989-1995, other chemicals and categories were added or deleted, 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 33, 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 36. These additions bring the total chemical count to 593 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.

FIGURE 17
EFFECT OF CHEMICAL AND FACILITY GROUP ADDITIONS
1990-2013



Source: DNREC 2013 TRI Database, 10-1-14

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 2013 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 2013 would be 13.73 million pounds instead of the 4.0 million pounds actually reported for 2013. 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 9.70 million pounds, or 71%.

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

GROUP	STARTING YEAR AMOUNT Millions of Pounds	2013 AMOUNT Millions of Pounds	CHANGE SINCE STARTING Millions of Pounds	PERCENT CHANGE
Original Facilities and Chemicals	5.30	0.48	- 4.82	-91%
1995 Chemical Addition	2.23	3.27	1.04	47%
1998 Facility Addition	6.20	0.28	- 5.92	-95%
TOTAL	13.73	4.03	- 9.70	-71%

TABLE 15
2003-2013 TRI DATA SUMMARY
(IN POUNDS)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
No. of Facilities	85	74	73	70	69	69	63	61	63	60	62
No. of Form As	55	52	53	45	44	31	29	31	34	33	33
No. of Form Rs	327	310	294	287	295	288	227	197	209	202	195
No. of Chemicals	103	103	103	101	102	100	90	79	90	88	91
On-Site Releases											
Air	7,308,283	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
Water	918,650	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
Land	1,268,396	1,111,392	752,894	781,701	406,188	885,976	537,489	210,747	278,669	306,702	151,956
Unadjusted On-Site Release	9,495,329	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
Off-site Transfers											
POTWs	1,452,241	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
Recycle	8,376,865	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
Energy Recovery	2,834,075	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
Treatment	370,950	174,893	194,679	237,073	171,044	150,297	140,248	336,190	274,727	963,123	1,112,090
Disposal	4,084,899	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
Total Transfers	17,119,029	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
On-Site Waste Mgmt.											
Recycle	22,404,667	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
Energy Recovery	16,323,700	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
Treatment	30,443,585	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
Total On-Site Mgmt.	69,171,952	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
Total Waste	95,786,309	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

NOT ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS

SOURCE: DNREC 2013 DATABASE, OCTOBER 2014

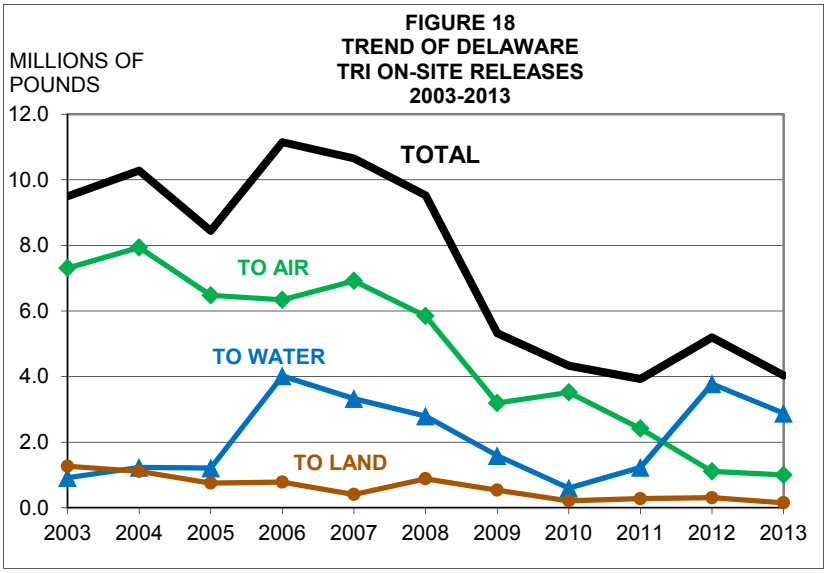
Release and Waste Management Trends, 2003-2013

Table 15 on page 31 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 2003 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 2009 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, 2003-2013

Figure 18 shows the on-site release trends during 2003-2013. 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 22.4% for 2013 (1,161,025 pounds) following a 32.3% increase (1,267,885 pounds) for 2012.



Significant changes in the amounts reported for 2012-2013 include the facilities and chemicals shown in Table 16 on the next page. To put the changes in perspective for 2013, there were 74 reports with a higher amount and 93 reports with a lower amount. There were 5 reports with an increase greater than 10,000 pounds and 14 reports with a decrease greater than 10,000 pounds.

TABLE 16
REPORTS OF MAJOR CHANGES IN ON-SITE RELEASES FOR 2013 FROM 2012

FACILITY	CHEMICAL	MEDIA	CHANGE IN ON-SITE RELEASES (pounds)
Delaware City Refinery	Nitrate compounds	Water	-775,000
Perdue Georgetown	Nitrate Compounds	Water	-142,000
Indian River Generating Station	Barium Compounds	Land	-91,000
Indian River Generating Station	Hydrochloric Acid	Air	-56,000
Dupont Edge Moor	Carbonyl Sulfide	Air	+32,000
Delaware City Refinery	Sulfuric Acid	Air	+110,000

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 2012-2013. Changes are also discussed in the ***Facilities No Longer Reporting Section*** on page 18. Facility specific information is available via the ***TRI Facility Profiles,*** see ***Access to TRI Files*** under the ***Further Information Section*** on page 46. In addition, you may contact a facility for a more in-depth discussion of the reasons for specific changes, and consult Table 15 on page 31 and the appendices in this report for the exact amounts that were reported.

Figure 19
On-Site Release Trend
Top 5 TRI Chemicals
2003-2013

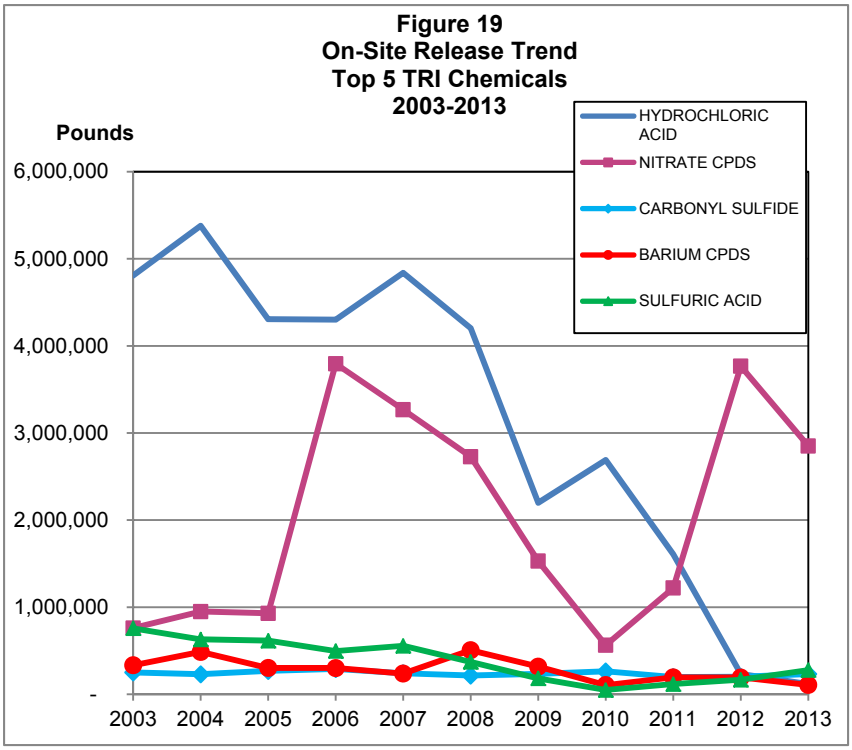
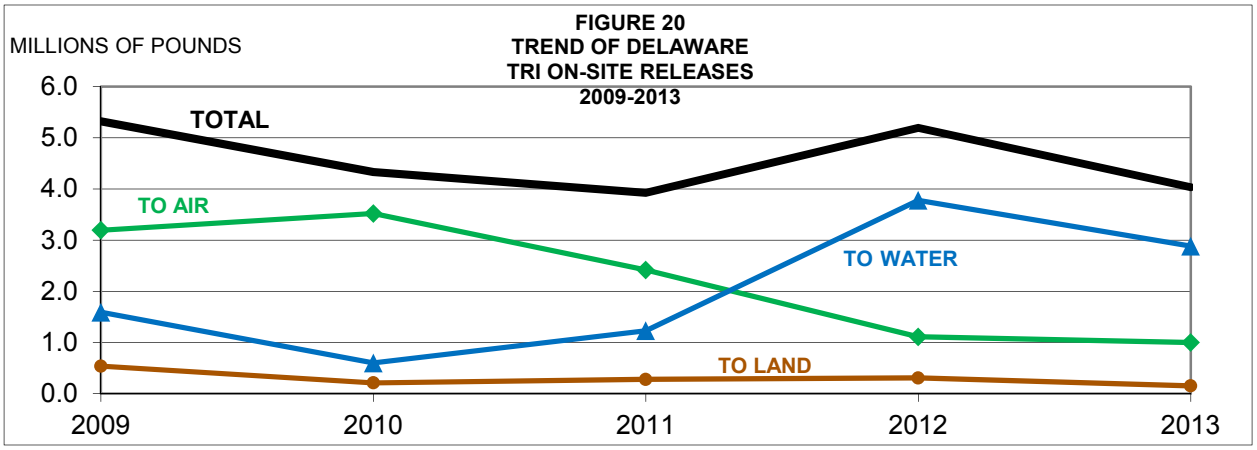
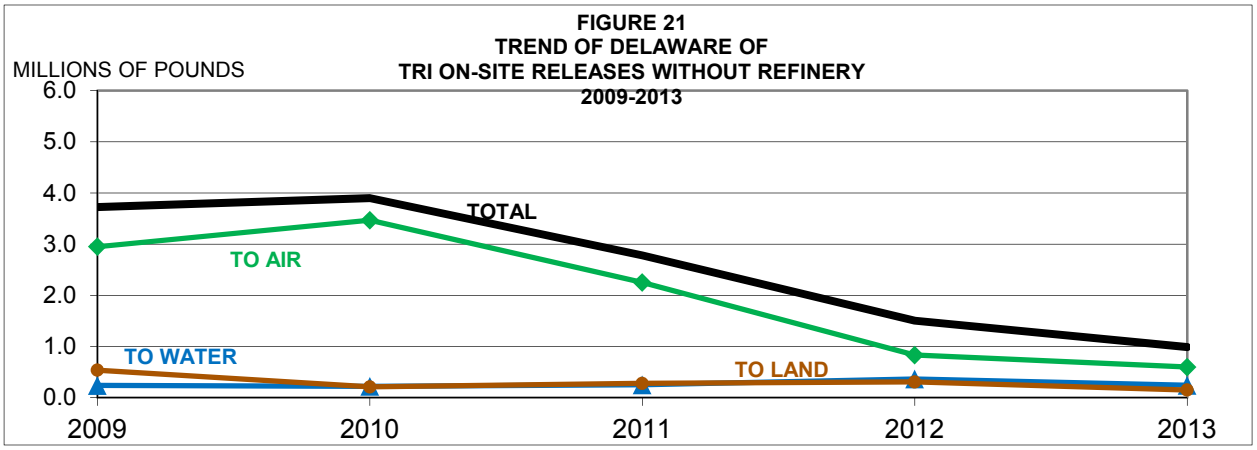


Figure 19 shows the trend since 2003 for the top five chemicals based on on-site release amounts reported for 2013 in Delaware. These five chemicals represent 89% of all on-site releases from the 89 chemicals reported in 2013. Nitrate compound releases trended downward from 2006 through 2010, when the 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 71% (2.8 millions pounds) of all on-site releases in 2013. Sulfuric acid ranked second in on-site releases, accounting for 7% (277,754 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. Carbonly sulfide ranked third in on-site releases, accounting for 6% (231,708 pounds). Dupont Edge Moor releases over 99% of the carbonly sulfide reported to air, with release amounts varying year to year. Hydrochloric acid accounted for 3% of the total in on-site releases. Releases of hydrochloric acid have trended down significantly since 2007. Part of the reason for this downward trend is Delaware Regulation 1146, which began to be implemented in 2009 at the electric generating facilities (see page 39 and page K-7 in ***Appendix K*** for details). The significant effects of the regulation can be seen at Indian River Generating Station, which reduced in hydrochloric acid releases by 95% (2.2 million pounds) since 2010. Barium compounds also accounted for 3% of the total in on-site releases, with releases trending downward since 2008.

Figure 20 shows the on-site releases to air, water and land over the last 5 reporting years from 2009 through 2013. 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 65% of all onsite releases in 2013. 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 73% (2.7 million pounds) since 2009, while total on-site releases, including the refinery releases, are down by 24% (1.3 million pounds) compared to 2009. With the refinery removed, releases follow the trend of releases to air, which have reduced significantly since 2009. As discussed on the

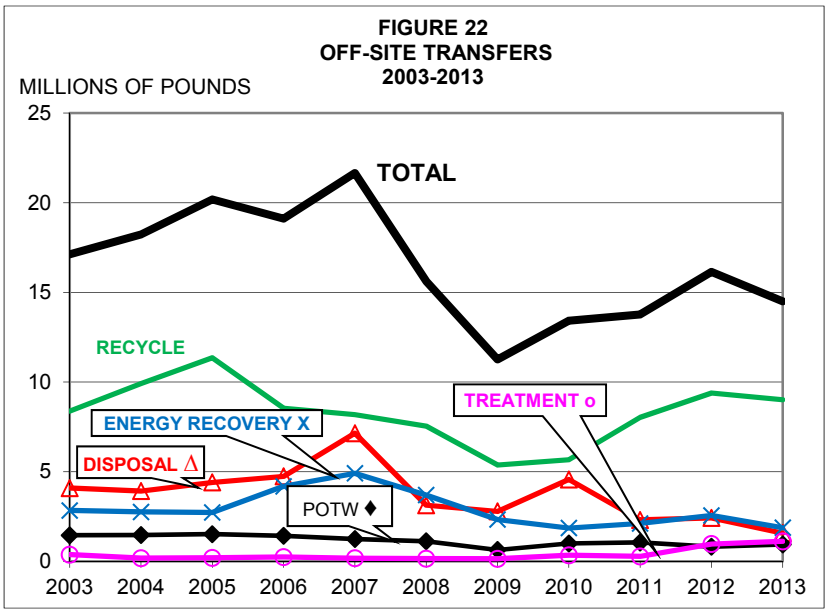


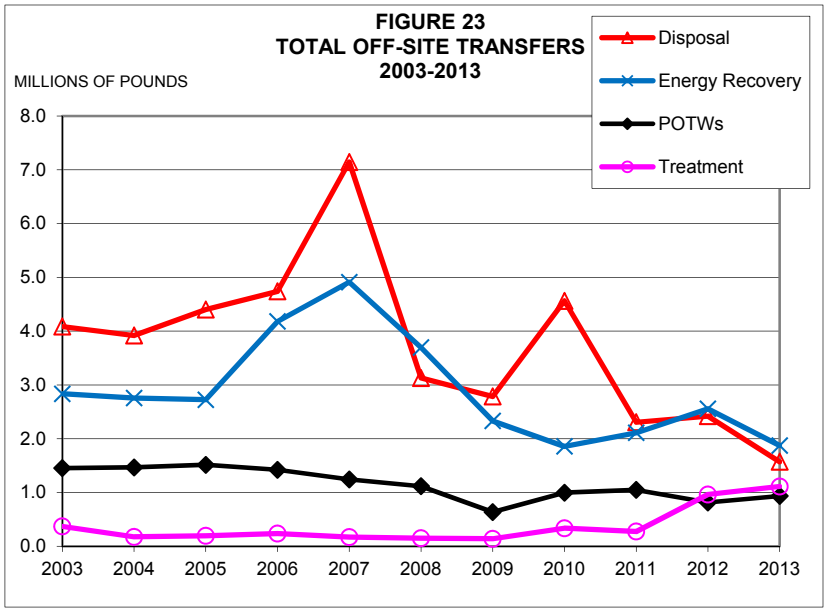


previously, Delaware Regulation 1146 was a major factor in onsite release reductions. Another reason for the decrease in on-site releases is the economy, which effects production at the facilities and ultimately many of their on-site releases have declined in recent years and indirectly caused part of the reduction.

Off-Site Transfers, 2003-2013

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 31, 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 2003. 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 12% (1,794,000 pounds) in 2013, driven by decreases in amounts sent off-site for recycle, energy recovery and disposal, but partially offset by an increase in POTW and off-site treatment amounts.

Table 17, on the following page, shows that the largest off-site transfer decrease was

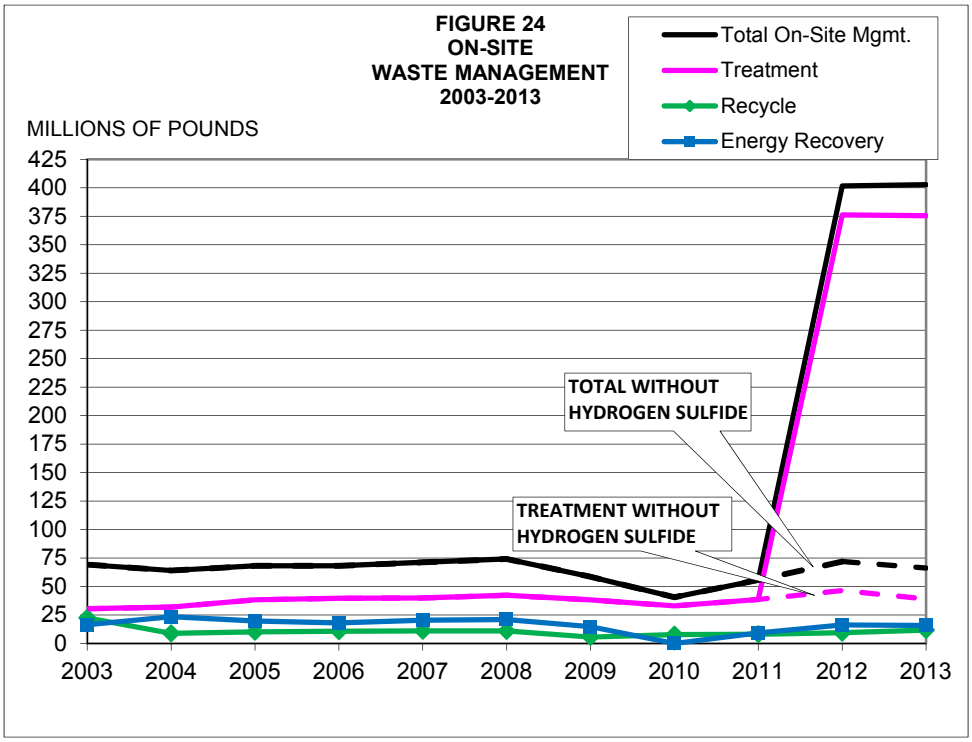
for manganese compounds sent off-site for disposal by DuPont Edge Moor, followed by the recycling of n,n-dimethylformamide by Rohm & Haas - B2 B3 B8. Noramco sent less toluene off-site for energy recovery and Evraz Claymont Steel sent less zinc compounds off-site for recycle. Johnson Controls Distribution Center sent more lead compounds off site for recycle, Noramco sent more n-butyl alcohol off site for energy recovery, BASF Newport sent more methanol for recycle in 2013, compared to 2012. Seventy-two reports showed decreases, while 46 reported increases for 2013.

TABLE 17
MAJOR CHANGES IN OFF-SITE TRANSFERS FOR 2013 FROM 2012

FACILITY	CHEMICAL	OFF-SITE METHOD	CHANGE (pounds)
DuPont Edge Moor	Manganese Compounds	Disposal	-817,000
Rohm&Haas - B2 B3 B8	N,N-dimethylformamide	Recycle	-756,000
Noramco	Toluene	Energy Recovery	-360,000
Evraz Claymont Steel	Zinc Compounds	Recycle	-350,000
BASF Newport	Methanol	Recycle	+143,000
Noramco	N-Butyl Alcohol	Energy Recovery	+175,000
Johnson Controls Battery Plant	Lead Compounds	Recycle	+522,000

On-Site Waste Management, 2003-2013

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, on the previous page, shows the trends for the three on-site waste management activities since 2003. Overall, on-site waste management amounts increased 0.3% (1,078,332 pounds) in 2013 compared to 2012. The on-site management of hydrogen sulfide accounted for 84% (336,501,000 pounds) of all on-site waste management activities, with the Delaware City Refinery treating the largest amount at 336,215,000 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 requirements. On-site energy recovery was down 27% (683,000 pounds) compared to 2012, with the refinery reporting benzene as having the largest decrease in energy recovery compared to 2012.

Changes greater than one million pounds reported in on-site waste management for 2013 are:

TABLE 18

MAJOR CHANGES IN ON-SITE WASTE MANAGEMENT FOR 2013 FROM 2012

FACILITY	CHEMICAL	ON-SITE WASTE MANAGEMENT METHOD	AMOUNT OF CHANGE (pounds)
DuPont Edge Moor	Hydrochloric Acid	Treatment	-5,375,000
Rohm & Haas B2,B3,B8	N,n-dimethylformamide	Recycle	-1,351,000
DuPont Edge Moor	Chlorine	Treatment	-1,268,000
Delaware City Refinery	Carbonyl Sulfide	Treatment	+1,028,000
Air Liquide – Medal	N-hexane	Recycle	+1,525,000
Air Liquide – Medal	Methanol	Recycle	+1,838,000
Delaware City Refinery	Hydrogen Sulfide	Treatment	+6,952,000

These changes were balanced by smaller increases and decreases from other reports. Thirty-eight reports showed an increase in a waste management amount, while 30 reports showed a decrease for 2013. Total pounds for on-site waste management, excluding the addition of hydrogen sulfide, have decreased by 2.9 million pounds, or 4%, over the last 10 years or since 2003. The on-site waste management amount totals are in Table 15 on page 33, and Figure 6 on page 12 shows the relative amounts.

Receiving TRI Chemicals in Wastes

When a facility transfers TRI chemical waste off-site, these wastes go to a receiving facility. Table 19 shows the total amounts of TRI chemicals reported as sent to 18 Delaware facilities from both in-state and out-of-state TRI facilities for 2013. The DNREC TRI program does not receive reports from any out-of-state TRI facilities that transfer wastes into Delaware; this data was obtained from the EPA.

TABLE 19
SUMMARY OF REPORTED TRI TRANSFERS
TO DELAWARE FACILITIES
FROM OTHER TRI FACILITIES IN 2013

(IN POUNDS)

DELAWARE RECEIVING FACILITY	TOTAL TRANSFERS TO DELAWARE FROM DELAWARE TRI FACILITIES	TOTAL TRANSFERS TO DELAWARE FROM OUT-OF-STATE TRI FACILITIES	TOTAL TRANSFERS RECEIVED BY DELAWARE FACILITIES
ASHWORKS		4,221	4,221
CIRILLO BROS		0	0
CLEAN EARTH OF DELAWARE	3	0	3
DELAWARE RECYCABLE PRODUCTS	10,820		10,820
DIAMOND STATE RECYCLING CORP.	367,094		367,094
DSWA CHERRY ISLAND LANDFILL	17,063		17,063
DSWA GEORGETOWN LANDFILL	1		1
DSWA SANDTOWN LANDFILL	8		8
DUPONT EXPERIMENTAL STATION		2,937	2,937
FCC ENVIRONMENTAL		11,676	11,676
INDUSTRIAL RESOURCE NETWORK		250	250
KENT COUNTY WASTEWATER TREATMENT PLANT	44,903		44,903
KENT SCRAP METAL	94,392		94,392
MIDDLETOWN-TOWNSEND-ODESSA TREATMENT PLANT	3		3
RECYCLERS OF DELAWARE		3,810	
SEAFORD WASTEWATER TREATMENT PLANT	1,856		1,856
WASTE MANAGEMENT OF DELAWARE	563		
WILMINGTON WASTEWATER TREATMENT PLANT	878,525		878,525
TOTAL TRI TRANSFERS REPORTED	**1,415,231**	**22,893**	**1,433,751**

Source: U.S. EPA 2013 Data Run, August 27, 2014

The top receiving facility is the Wilmington Wastewater Treatment Plant, receiving TRI chemicals in wastewater from regional customers. Diamond State Recycling Corp. received the second largest amount, for recycle, from two Delaware customers. Kent Scrap Metal received the third highest amount, from one facility. The fourth largest amount transferred to a Delaware facility was to the Kent County Wastewater Treatment Plant, receiving TRI chemicals for treatment from two facilities in the county. DSWA Cherry Landfill received the fifth highest amount, from three facilities in Delaware. These five receiving facilities accounted for 99% of all TRI chemicals received in Delaware from all in-state and out-of-state TRI facilities.

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 47 of this report.

In 2006, Delaware promulgated 7 DE Admin Code 1146, Electric Generating Unit (EGU) Multi-Pollutant Regulation, to establish sulfur dioxide (SO_2), nitrogen oxides (NOx), 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 NOx, SO_2 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 NOx, SO_2, 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.

National Perspective

The national 2013 TRI preliminary data was recently released by the EPA. Placing the 2013 Delaware reports alongside the 2013 EPA data yields some rankings that provide a perspective for Delaware in the national TRI picture. Changes in the 2013 final national values because of report additions or revisions may change these rankings.

TABLE 20

RANKING OF ON-SITE RELEASES FOR SELECT STATES

State	Rank, Based on Pounds	Total On-Site Release (Pounds)	Rank, Based on Release Per Person	Rank, Based on Pounds Release Per Square Mile
Alaska	1	970,183,000	1	9
Utah	2	521,218,000	2	1
Nevada	3	365,242,000	3	2
Texas	4	197,332,000	23	22
Delaware	44	4,033,000	32	6

The reported totals for seven states were each over 100 million pounds for 2013.

This data shows that Delaware ranks 44th in the nation in total on-site releases by state for all TRI chemicals. This is 0.11% of the total on-site release amounts nationwide. Rankings can also be based on other criteria. Because Delaware has a small population (#45) and area (#49), releases are spread over fewer people and a smaller area, increasing the ranking on a per-person or per-square mile basis. Although Alaska reports, by far, had the highest amount of on-site releases, this state only received 218 reports from 34 facilities, less than Delaware's 228 reports from 61 facilities. Alaska reports are largely from mining operations, with over 951 million pounds (98% of the state total) reported released on-site for just two chemicals; lead compounds and zinc compounds.

Figure 27 shows the amounts of TRI on-site releases reported by four nearby states for 2009 through 2013. Pennsylvania reported the highest amount in on-site releases for 2013 at 48.8 million pounds and Virginia reported the second highest at 39 million pounds. On-site releases for the region have trended downward over the 5 year span; however both Virginia and New Jersey had increases for 2013 compared to 2012. Overall on-site releases for the 5 states are down 53% (121 million pounds) compared to 2009.

FIGURE 25
TOTAL TRI ON-SITE RELEASE TRENDS
DELAWARE AND NEARBY STATES

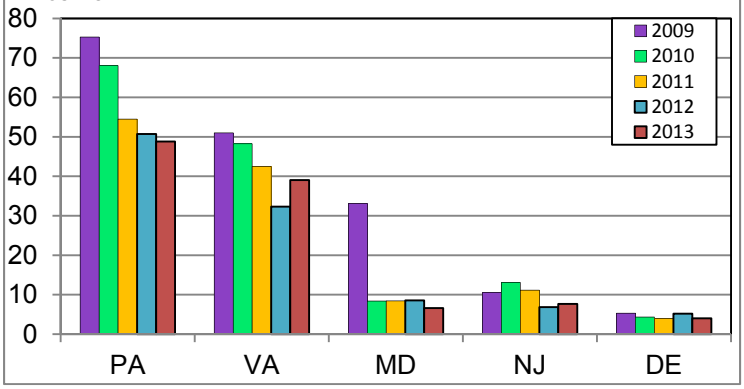


Table 21 shows that 97 facilities had more **total on-site releases** than all the facilities in Delaware combined.

TABLE 21
SELECT FACILITY TOTAL ON-SITE RELEASES COMPARED TO DELAWARE

Facility, State	Rank	Total On-Site Release (Pounds)
Red Dog Operations, Alaska	1	906,386,000
Kennecott Copper Mine, Utah	2	290,490,000
Kennecott Barneys Canyon Mining, Utah	3	193,037,000
All Facilities Combined, Delaware	Lower than #97	4,032,792

Ninety-nine facilities each reported over 4 million pounds released on-site for 2013.

Nationwide, 35 facilities each released more **dioxins* on-site** than all the facilities in Delaware combined. Table 22 shows the top three facilities in the nation compared to the Delaware total on-site release of dioxins.

TABLE 22
COMPARISON OF DIOXIN TOTALS FOR TOP 3 FACILITIES TO DELAWARE TOTAL

Facility, State	Rank	Total On-Site Dioxin Release (Grams)
Dow Chemical, Texas	1	6,615.9
US Magnesium, Utah	2	4,218.4
US Ecology, Texas	3	3730
All Facilities Combined, Delaware	36	13.73

Seventeen facilities each reported over 50 grams of dioxins* released on site for 2013 and four of these released over 1,000 grams. These amounts reported do not differentiate between the highly toxic and the less toxic dioxins and dioxin-like compounds in this group.

* See pages 3, 5, 23-24, 35-37 for notes on “Dioxins.”

TABLE 23

COMPARISON OF MERCURY TOTALS FOR TOP 3 FACILITIES TO DELAWARE TOTAL

Facility, State	Rank	Total On-Site Dioxin Release (Grams)
Dow Chemical, Texas	1	6,615.9
US Magnesium, Utah	2	4,218.4
US Ecology, Texas	3	3730
All Facilities Combined, Delaware	36	13.73

Some facilities in Delaware do rank near the top of the national rankings for specific categories. Relevant national rankings for facilities in Delaware for on-site releases and total waste reported are presented in the ***TRI Facility Profiles*** (see ***Access to TRI Files*** under the ***Further Information Section*** on page 46).

Nearby Facilities in Adjacent States

Some facilities, although not in Delaware, may be important to the environment in Delaware. These facilities are located near our border and may release TRI chemicals, particularly to the air or water, which may migrate into Delaware. Table 24 on the next page is a listing of some nearby facilities with significant TRI release amounts. This data is from EPA's preliminary 2013 TRI data set, which was gathered in September 2014.

TABLE 24

2013 On-Site Releases From Nearby Facilities in Adjacent States

Facility	State	Chemical	Media	Amount (Pounds)
DuPont Chambers Works, Deepwater 1 ★	New Jersey	Nitrate compounds	Water	2,315,714*
DuPont Chambers Works, Deepwater	New Jersey	Sodium nitrite	Water	68,032***
National Refrigerants, Rosenhayn 2 ★	New Jersey	HCFC-22	Air	68,639***
Paulsboro Refining, Paulsboro 3 ★	New Jersey	Hydrogen Cyanide	Air	244,870**
Paulsboro Refining, Paulsboro	New Jersey	Nitrate Compounds	Water	562,108*
QG, LLC, Altglen 4 ★	Pennsylvania	Toluene	Air	451,505**
PES Refinery, Philadelphia 5 ★	Pennsylvania	Benzene	Air	35,179**
PES Refinery, Philadelphia	Pennsylvania	Hydrogen Cyanide	Air	147,860**
PES Refinery, Philadelphia	Pennsylvania	N-hexane	Air	40,487**
PES Refinery, Philadelphia	Pennsylvania	Sulfuric Acid	Air	240,740**
Arkema, Bristol 6 ★	Pennsylvania	Methyl methacrylate	Air	29,000**
RR Donnelley, Lancaster 7 ★	Pennsylvania	Toluene	Air	328,113**
Montgomery Chem., Conshohocken 8 ★	Pennsylvania	Methanol	Air	8,360**
Plymouth Tube, Salisbury 9 ★	Maryland	Trichlorethylene	Air	57,435**
Grace Davison Curtis Bay Works, Baltimore 10 ★	Maryland	Ammonia	Air	106,354**
Crown Food Packaging, Baltimore 11 ★	Maryland	N- Butyl Alcohol	Air	81,624**
Salisbury Feed & Grain 12 ★	Maryland	N-Hexane	Air	140,000**
Brandon Shores Power Plant, Baltimore 13 ★	Maryland	Hydrochloric acid	Air	1,121,288**
Brandon Shores Power Plant, Baltimore	Maryland	Hydrogen Fluoride	Air	111,688**
Brandon Shores Power Plant, Baltimore	Maryland	Sulfuric Acid	Air	130,927*
Erachem, Baltimore 14 ★	Maryland	Nitrate Compounds	Water	576,079*
Perdue Farms, Accomac 15 ★	Virginia	Nitrate Compounds	Water	1,518,935*

* Delaware State total releases for this chemical are higher

** Exceeds the Delaware State total for this chemical

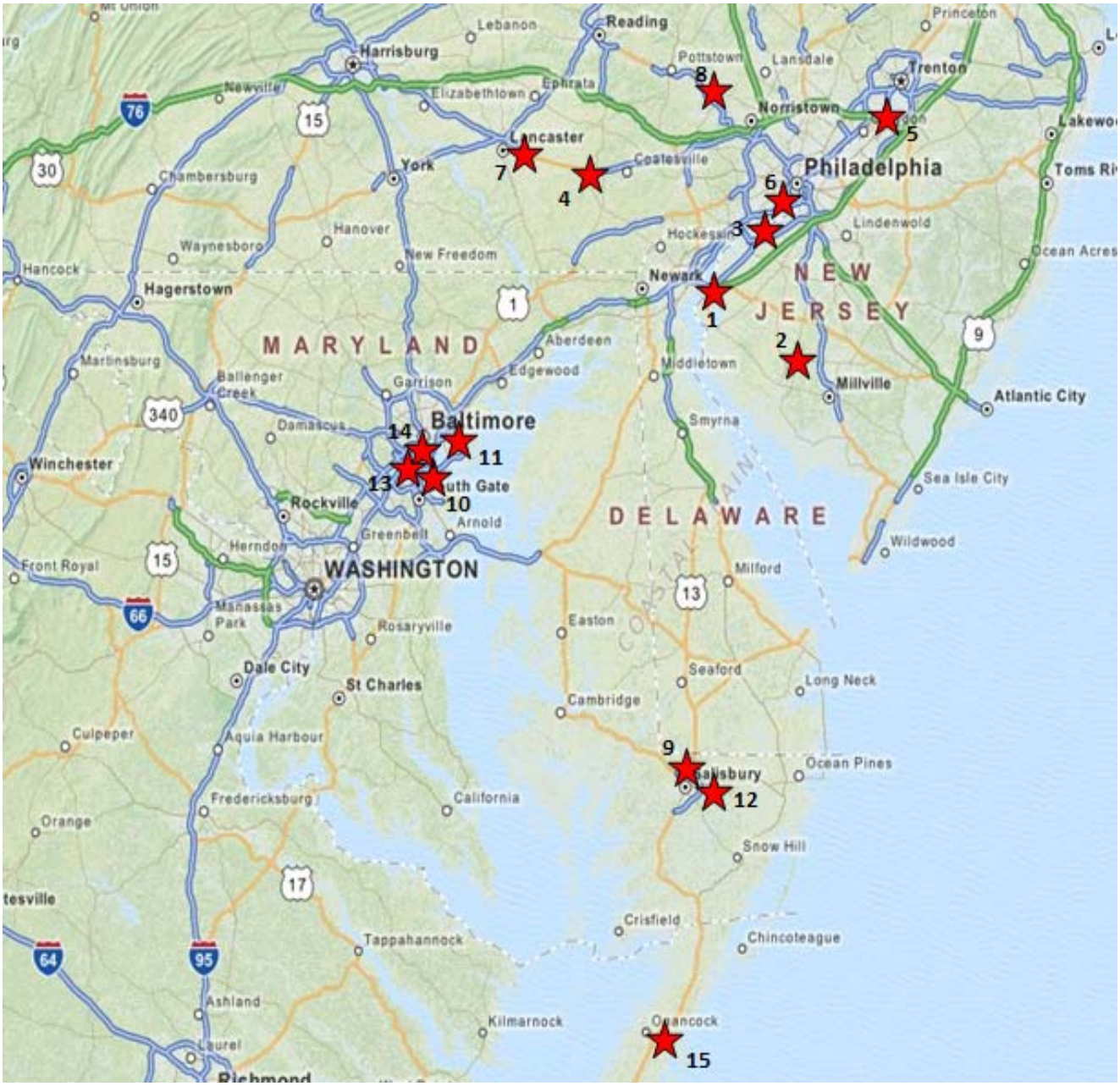
*** Chemical not reported in Delaware for 2013

★ See location number on the Figure 28 map on next page

As noted on pages 4-5, these amounts do not indicate the amount of human exposure. However, they do provide a comparison between releases in Delaware and some TRI chemicals released by nearby facilities in neighboring states.

Figure 26 shows the above nearby facilities and their proximity to Delaware. Each star represents a facility location that reported an on-site release for a TRI chemical.

FIGURE 26
FACILITIES IN NEARBY STATES

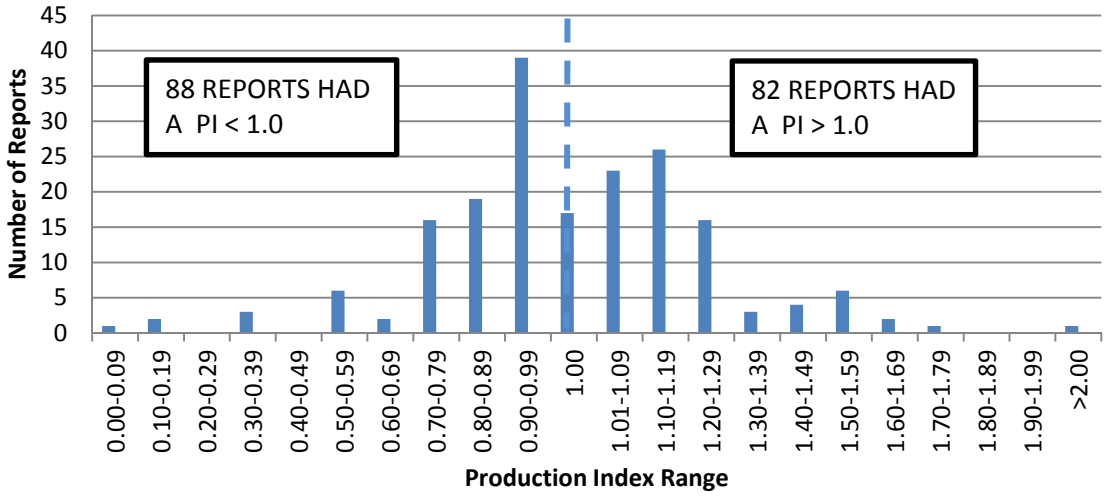


TRI and the Economy

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 2013, of the 187 reports with PIs, 82 reported increases in production and 88 reported decreases. The remaining 17 reports had a 2012 production level equal to the previous year. The average PI reported was 1.02 or a 2% increase compared to 2012's production level.

Figure 27:
2013 Production Index Distribution



TOXICS RELEASE INVENTORY

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 2013 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 655 South Bay Road, Suite 5N, 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 2012 national TRI data and later this year to the complete 2012 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://www2.epa.gov/toxics-release-inventory-tri-program/2011-tri-national-analysis The 2013 edition of this report will be available in early 2015. 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

Risk Screening Environmental Indicators (RSEI). This model was developed by the EPA's Office of Pollution Prevention & Toxics as a risk-screening tool that provides a relative comparison of TRI releases. This application is available by download through the Internet at: http://www.epa.gov/oppt/rsei/pubs/get_rsei.html#new.

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.awm.delaware.gov/AQM/Pages/AQMPublicationsandReports.aspx and air toxics information is at: http://www.awm.delaware.gov/AQM/Pages/DATAS1.aspx. The EPA site for additional air quality information is: http://www.epa.gov/oar/oaqps/publicat.html.

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:

Brian Lutes
TRI Coordinator
EPCRA Reporting Program
Emergency Prevention and Response Section
DNREC Division of Waste and Hazardous Substances
655 S. Bay Rd., Suite 5N
Dover, DE 19901
Tel. (302) 739-9405, Fax (302) 739-3106
E-mail: brian.lutes@state.de.us

APPENDICES 2013

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APPENDICES

2013

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

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 **For Further Information** 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

AIR LIQUIDE INDUSTRIAL
4442 WRANGLE HILL RD
DELAWARE CITY, DE 19706
WENDY D'ATTILIO
(713) 624-8131

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
JAY WALL
(302) 846-9511

ARLON
1100 GOVERNOR LEA RD
BEAR, DE 19701
ROBERT CARINI
(302) 834-2100

BALTIMORE AIRCOIL
1162 HOLLY HILL RD
MILFORD, DE 19963
DALE WAGNER
(910) 391-7933

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

BASF SEAFORD
100 INDUSTRIAL BLVD
SEAFORD, DE 19973
MAUREEN PAUKERT
(973) 245-6077

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

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

APPENDIX B

FACILITY CONTACT INFORMATION

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

DENTSPLY LAKE VIEW
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

DUHADAWAY TOOL AND DIE SHOP
801 DAWSON DRIVE
NEWARK, DE 19713
JOHN O'DONNELL
(302) 366-0113

DUPONT EDGE MOOR
104 HAY RD
EDGEMOOR, DE 19809
PETER J. CIOTTA
(716) 879-1846

DUPONT RED LION PLANT
766 GOVERNOR LEA RD
DELAWARE CITY, DE 19706
KRISTIN D. CECIL
(302) 999-6493

EDGE MOOR/HAY ROAD ENERGY CENTERS
200 HAY RD
WILMINGTON, DE 19809
NORMA DUNN
(713) 830-8833

EVRAZ CLAYMONT STEEL
4001 PHILADELPHIA PIKE
CLAYMONT, DE 19703-2794
TOMASZ WESOLOWSKI
(302) 792-5400

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

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

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

HANDY TUBE
124 VEPCO BOULEVARD
CAMDEN, DE 19934
JOHN P. COATES
(302) 697-9521

HANESBRANDS
631 RIDGELY ST - SUITE #1
DOVER, DE 19904-2772
TOMMY THOMPSON
(336) 519-2715

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

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

HERITAGE CONCRETE - FRANKFORD
29610 LAZY LAGOON ROAD
FRANKFORD, DE 19945
JOHN RICE
(717) 236-7023

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

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

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

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

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

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

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

JOHNSON CONTROLS DISTRIBUTION CENTER
50 PATRIOT DR
MIDDLETOWN, DE 19709
RICK THOMPSON
(302) 696-3209

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

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

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

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

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

MOTECH AMERICAS
231 LAKE DR PENCADER CORPORATE
NEWARK, DE 19702
DAVE HOLLERAN
(302) 323-1061

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

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

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

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

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

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

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

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

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

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

ROHM & HAAS B2, B3, B8
451 BELLEVUE RD
NEWARK, DE 19713
KELLY BLOCK
(302) 366-0500

APPENDIX B

FACILITY CONTACT INFORMATION

ROHM & HAAS B5, B6
351 BELLEVUE RD
NEWARK, DE 19713
KELLY BLOCK
(302) 366-0500

ROHM & HAAS B7, B15
50 BELLEVUE RD
NEWARK, DE 19713
KELLY BLOCK
(302) 366-0500

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

SPI PHARMA
40 CAPE HENLOPEN DR
LEWES, DE 19958-1196
PAUL LOPRESTO
(302) 576-8532

V&S DELAWARE GALVANIZING
511 CARROLL DRIVE
NEW CASTLE, DE 19720
JOHNNY ROIBU
(302) 322-1420

VP RACING FUELS
16 BROOKHILL DR
NEWARK, DE 19714
JIM KELLY
(302) 368-1500

APPENDIX C

2013 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
AEARO TECHNOLOGIES							
DIISOCYANATES	0	2	0	0	2	9,367	0
TOLUENE DIISOCYANATE (MIXED ISOMERS)	0	5	0	0	5	14,050	0
AEARO TECHNOLOGIES Total	0	7	0	0	7	23,417	0
AGILENT TECHNOLOGIES							
ACETONITRILE	0	36	0	0	36	15,558	0
METHANOL	0	1,139	0	0	1,139	37,273	0
TOLUENE	0	19	0	0	19	188,565	0
AGILENT TECHNOLOGIES Total	0	1,194	0	0	1,194	241,396	0
AIR LIQUIDE - MEDAL							
CYCLOHEXANE	0	954	0	0	954	17,234	0
METHANOL	0	505	0	0	505	86,496	3,016,630
N,N-DIMETHYLFORMAMIDE	0	25	0	0	25	25,230	0
N-HEXANE	0	1,925	0	0	1,925	0	2,506,103
N-METHYL-2-PYRROLIDONE	0	**1,285**	0	0	1,285	151,089	0
AIR LIQUIDE - MEDAL Total	0	4,694	0	0	4,694	280,049	5,522,733
AIR LIQUIDE INDUSTRIAL							
AMMONIA	0	17,792	0	0	17,792	0	0
AIR LIQUIDE INDUSTRIAL Total	0	17,792	0	0	17,792	0	0
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

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APPENDIX C

2013 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
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
ARLON							
COPPER	0	5	0	0	5	2,200	0
ETHYLBENZENE	0	590	0	0	590	750	27,000
XYLENE (MIXED ISOMERS)	0	2,400	0	0	2,400	3,000	108,000
ARLON Total	0	2,995	0	0	2,995	5,950	135,000
BALTIMORE AIRCOIL							
CHROMIUM COMPOUNDS	0	0	0	0	0	211,618	0
MANGANESE COMPOUNDS	0	5	0	0	5	125,000	0
NICKEL COMPOUNDS	0	5	0	0	5	241,000	0
BALTIMORE AIRCOIL Total	0	10	0	0	10	577,618	0
BASF NEWPORT							
ANILINE	0	30	0	0	30	44,116	1,211
BIPHENYL	0	97	0	0	97	105,037	2,321
CYCLOHEXANE	0	52	0	0	52	23,836	3,459
METHANOL	0	21,996	0	0	21,996	586,255	1,190,551
NITRATE COMPOUNDS	0	0	0	0	0	28,822	0
NITRIC ACID	0	0	0	0	0	0	29,286
N-METHYL-2-PYRROLIDONE	0	0	0	0	0	49,782	0
P-CHLOROANILINE	0	10	0	0	10	5,160	390
XYLENE (MIXED ISOMERS)	0	1,094	0	0	1,094	661	5,093
BASF NEWPORT Total	0	23,279	0	0	23,279	843,669	1,232,311

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APPENDIX C

2013 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
BASF SEAFORD							
AMMONIA	0	1,948	0	0	1,948	288	2,301
BUTYL ACRYLATE	0	146	0	0	146	61	58
CERTAIN GLYCOL ETHERS	0	5	0	0	5	271	0
METHYL METHACRYLATE	0	197	0	0	197	61	381
STYRENE	0	210	0	0	210	78	523
BASF SEAFORD Total	0	2,506	0	0	2,506	759	3,263
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
CARL KING Total	3	0	0	0	0	0	0
COLOR WORKS							
MANGANESE	0	0	0	0	0	1,094	0
COLOR WORKS Total	0	0	0	0	0	1,094	0
CRODA							
CERTAIN GLYCOL ETHERS	0	3	0	0	3	3,141	0
DIETHANOLAMINE	0	6	0	0	6	41	0
ETHYLENE OXIDE	0	2,432	0	0	2,432	0	0
METHANOL	0	652	0	0	652	16,019	0
NAPHTHALENE	0	2	0	0	2	420	0
PROPYLENE OXIDE	0	578	0	0	578	0	0
CRODA Total	0	3,673	0	0	3,673	19,621	0

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APPENDIX C

2013 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
DELAWARE CITY REFINERY							
1,2,4-TRIMETHYLBENZENE	0	1,203	5	0	1,208	0	63,921
1,3-BUTADIENE	0	396	0	0	396	0	0
2,4-DIMETHYLPHENOL	0	0	179	0	179	0	251,805
AMMONIA	0	29,968	6,071	0	36,039	0	15,158,543
ANTHRACENE	0	10	5	0	15	0	0
ASBESTOS (FRIABLE)	0	0	0	0	0	125,560	0
BENZENE	0	9,102	11	0	9,113	8	432,029
BENZO(G,H,I)PERYLENE	0	0	5	0	5	0	492
CARBON DISULFIDE	0	1,169	0	0	1,169	0	2,880,233
CARBONYL SULFIDE	0	668	0	0	668	0	13,667,098
CREOSOTE	0	467	0	2,646	3,113	17,061	0
CRESOL (MIXED ISOMERS)	0	0	359	0	359	0	331,741
CUMENE	0	3,192	5	0	3,197	0	3,318
CYANIDE COMPOUNDS	0	0	158	0	158	0	15,645
CYCLOHEXANE	0	1,840	5	0	1,845	0	7,379
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0
ETHYLBENZENE	0	2,082	5	0	2,087	0	51,655
ETHYLENE	0	1,920	0	0	1,920	0	341,214
HYDROCHLORIC ACID	0	192	0	0	192	0	123,871
HYDROGEN CYANIDE	0	1,280	220	0	1,500	0	281,878
HYDROGEN SULFIDE	0	20,891	0	0	20,891	0	336,299,859
LEAD COMPOUNDS	0	99	3	0	102	59	0
MERCURY COMPOUNDS	0	75	2	0	77	2	0
METHANOL	0	5,462	5	0	5,467	0	38,261
MOLYBDENUM TRIOXIDE	0	14	0	0	14	0	0
NAPHTHALENE	0	2,146	147	0	2,293	0	10,493
N-HEXANE	0	30,085	5	0	30,090	0	62,251
NICKEL	0	1,342	1,709	0	3,051	36,762	0
NITRATE COMPOUNDS	0	0	2,631,359	0	2,631,359	0	0
PHENANTHRENE	0	1	5	0	6	0	43
PHENOL	0	129	179	0	308	0	302,605
POLYCYCLIC AROMATIC COMPOUNDS	0	224	4	0	228	0	405
PROPYLENE	0	8,602	0	0	8,602	0	511,882
STYRENE	0	13	5	0	18	0	1,366
SULFURIC ACID	0	257,679	0	0	257,679	0	0
TETRACHLOROETHYLENE	0	6	0	0	6	0	0
TOLUENE	0	14,178	5	0	14,183	0	199,695
XYLENE (MIXED ISOMERS)	0	6,007	5	0	6,012	2	210,448
DELAWARE CITY REFINERY Total	0	400,441	2,640,461	2,646	3,043,548	179,454	371,248,130

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2013 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
DENTSPLY LAKE VIEW							
MERCURY	0	0	0	0	0	1,086	0
DENTSPLY LAKE VIEW Total	0	0	0	0	0	1,086	0
DENTSPLY WEST PLANT							
METHANOL	0	3,700	0	0	3,700	7,932	0
METHYL METHACRYLATE	0	1,607	0	0	1,607	68	0
TOLUENE	0	278	0	0	278	15,244	0
DENTSPLY WEST PLANT Total	0	5,584	0	0	5,584	23,245	0
DOVER AFB							
1,2,4-TRIMETHYLBENZENE	0	57	0	0	57	0	0
CUMENE	0	57	0	0	57	0	0
ETHYLBENZENE	0	59	0	0	59	0	0
NAPHTHALENE	0	63	0	0	63	0	0
XYLENE (MIXED ISOMERS)	0	62	0	0	62	0	0
DOVER AFB Total	0	298	0	0	298	0	0
DUHADAWAY TOOL AND DIE SHOP							
CHROMIUM	0	0	0	0	0	10,303	0
NICKEL	0	0	0	0	0	7,349	0
DUHADAWAY TOOL AND DIE SHOP Total	0	0	0	0	0	17,652	0

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2013 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
DUPONT EDGE MOOR							
ARSENIC COMPOUNDS	0	0	131	0	131	1,025	0
BARIUM COMPOUNDS	0	1	7,001	0	7,003	8,758	0
CARBONYL SULFIDE	0	231,040	0	0	231,040	0	0
CHLORINE	0	1,961	0	0	1,961	0	969,939
CHROMIUM COMPOUNDS	0	0	18	0	19	179,148	0
COBALT COMPOUNDS	0	0	4	0	4	3,099	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	1	0
HEXACHLOROBENZENE	0	0	1	0	1	197	0
HYDROCHLORIC ACID	0	4,026	0	0	4,026	0	11,027,384
LEAD COMPOUNDS	0	0	84	0	84	8,594	0
MANGANESE COMPOUNDS	0	1	14,349	0	14,350	759,187	0
MERCURY COMPOUNDS	0	1	0	0	1	1	0
NICKEL COMPOUNDS	0	1	246	0	247	9,156	0
OCTACHLOROSTYRENE	0	0	0	0	0	4	0
PENTACHLOROBENZENE	0	0	0	0	0	8	0
PHOSGENE	0	301	0	0	301	0	165,815
POLYCHLORINATED BIPHENYLS	0	0	0	0	0	4	0
POLYCYCLIC AROMATIC COMPOUNDS	0	69	0	616	685	0	0
TITANIUM TETRACHLORIDE	0	39	0	0	39	0	1,104,310
TOLUENE	0	78	0	0	78	0	0
VANADIUM COMPOUNDS	0	1	110	0	111	135,665	0
ZINC COMPOUNDS	0	9	86	0	95	14,374	0
DUPONT EDGE MOOR Total	0	237,528	22,030	616	260,174	1,119,221	13,267,448
DUPONT RED LION PLANT							
HYDRAZINE	0	0	0	0	0	0	0
HYDRAZINE SULFATE	0	0	0	0	0	0	0
HYDROGEN SULFIDE	0	160	0	0	160	0	0
SULFURIC ACID	0	9,165	0	0	9,165	0	0
DUPONT RED LION PLANT Total	0	9,325	0	0	9,325	0	0

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FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
EDGE MOOR/HAY ROAD ENERGY CENTERS							
AMMONIA	0	743	0	0	743	30	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0
MERCURY	0	17	0	0	17	0	0
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS Total	0	760	0	0	760	30	0
EVRAZ CLAYMONT STEEL							
CHROMIUM COMPOUNDS	0	76	3	147	226	20,170	0
COPPER COMPOUNDS	0	93	53	369	515	24,038	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0
LEAD COMPOUNDS	0	250	54	53	357	112,603	0
MANGANESE COMPOUNDS	0	293	15	9,853	10,161	192,775	0
MERCURY COMPOUNDS	0	93	0	0	93	2	0
NICKEL COMPOUNDS	0	20	20	264	304	3,448	0
ZINC COMPOUNDS	0	1,545	161	219	1,925	1,489,573	0
EVRAZ CLAYMONT STEEL Total	0	2,370	306	10,905	13,581	1,842,609	0
FORMOSA PLASTICS							
AMMONIA	0	1,485	0	0	1,485	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0
VINYL ACETATE	0	40,740	0	0	40,740	0	0
VINYL CHLORIDE	0	47,277	0	0	47,277	147	263,480
FORMOSA PLASTICS Total	0	89,502	0	0	89,502	147	263,480
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

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2013 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
HANDY TUBE							
CHROMIUM	0	0	0	0	0	45,133	0
MANGANESE	0	0	0	0	0	4,767	0
NICKEL	0	0	0	0	0	44,727	0
TRICHLOROETHYLENE	0	6,046	0	0	6,046	12,766	0
HANDY TUBE Total	0	6,046	0	0	6,046	107,393	0
HANESBRANDS							
NITRATE COMPOUNDS	0	0	0	0	0	44,740	0
HANESBRANDS Total	0	0	0	0	0	44,740	0
HERITAGE CONCRETE BEAR							
LEAD	0	0	0	18	18	0	0
HERITAGE CONCRETE BEAR Total	0	0	0	18	18	0	0
HERITAGE CONCRETE CHESWOLD							
LEAD	0	0	0	14	14	0	0
HERITAGE CONCRETE CHESWOLD Total	0	0	0	14	14	0	0
HERITAGE CONCRETE FRANKFORD							
LEAD	0	0	0	5	5	0	0
HERITAGE CONCRETE FRANKFORD Total	0	0	0	5	5	0	0
HERITAGE CONCRETE WILMINGTON							
LEAD	0	0	0	38	38	0	0
HERITAGE CONCRETE WILMINGTON Total	0	0	0	38	38	0	0
HIRSH INDUSTRIES							
CERTAIN GLYCOL ETHERS	0	5,717	0	0	5,717	0	0
HIRSH INDUSTRIES Total	0	5,717	0	0	5,717	0	0
HONEYWELL							
BORON TRIFLUORIDE	0	416	0	0	416	4	0
HYDROGEN FLUORIDE	0	543	0	0	543	0	84
METHANOL	0	4	0	0	4	1,080	0
POLYCYCLIC AROMATIC COMPOUNDS	0	445	0	0	445	0	0
HONEYWELL Total	0	1,408	0	0	1,408	1,084	84

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FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
IKO							
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	83	551
IKO Total	0	0	0	0	0	83	551
INDIAN RIVER GENERATING STATION							
AMMONIA	0	5,823	0	0	5,823	0	268,538
BARIUM COMPOUNDS	0	386	0	100,040	100,426	1	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0
HYDROCHLORIC ACID	0	114,394	0	0	114,394	0	1,246,982
HYDROGEN FLUORIDE	0	10,160	0	0	10,160	0	93,825
LEAD COMPOUNDS	0	74	0	6,217	6,291	0	0
MANGANESE COMPOUNDS	0	136	0	16,761	16,897	0	0
MERCURY COMPOUNDS	0	4	0	113	117	0	0
NAPHTHALENE	1	0	0	0	0	0	0
SULFURIC ACID	0	10,910	0	0	10,910	0	1,763,045
VANADIUM COMPOUNDS	0	83	0	14,253	14,336	0	0
INDIAN RIVER GENERATING STATION Total	1	141,970	0	137,384	279,354	1	3,372,390
INTERVET							
MERCURY COMPOUNDS	0	0	0	0	0	5	0
INTERVET Total	0	0	0	0	0	5	0
JOHNSON CONTROLS BATTERY PLANT							
ANTIMONY COMPOUNDS	0	0	0	0	0	11,943	0
LEAD COMPOUNDS	0	141	14	0	156	3,127,571	0
JOHNSON CONTROLS BATTERY PLANT Total	0	141	14	0	156	3,139,514	0
JOHNSON CONTROLS DIST. CENTER							
LEAD COMPOUNDS	0	0	0	0	0	1,293,566	0
JOHNSON CONTROLS DIST. CENTER Total	0	0	0	0	0	1,293,566	0
JUSTIN TANKS							
STYRENE	0	9,688	0	331	10,019	331	19,880
JUSTIN TANKS Total	0	9,688	0	331	10,019	331	19,880

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FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
KUEHNE							
CHLORINE	0	683	0	0	683	0	0
KUEHNE Total	0	683	0	0	683	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	170,893	0
NICKEL	0	1	0	0	1	55,802	0
METAL MASTERS Total	0	1	0	0	1	226,695	0
MOTECH AMERICAS							
LEAD	0	0	0	0	0	212	0
MOTECH AMERICAS Total	0	0	0	0	0	212	0
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 OF DELAWARE							
COPPER COMPOUNDS	1	0	0	0	0	0	0
HYDROGEN SULFIDE	0	2,417	0	0	2,417	0	58,265
MANGANESE COMPOUNDS	1	0	0	0	0	0	0
ZINC COMPOUNDS	1	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE Total	3	2,417	0	0	2,417	0	58,265

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NORAMCO							
DICHLOROMETHANE	0	1,874	0	0	1,874	58,083	58,083
ETHYLENE GLYCOL	0	10	0	0	10	11,316	0
FORMIC ACID	0	17	0	0	17	0	0
METHANOL	0	179	0	0	179	121,161	121,161
N-BUTYL ALCOHOL	0	111	0	0	111	834,212	834,212
PERACETIC ACID	0	10	0	0	10	9,960	0
TOLUENE	0	113	0	0	113	548,386	548,385
NORAMCO Total	0	2,314	0	0	2,314	1,583,118	1,561,841
ORIENT CORP							
ANILINE	0	74	0	0	74	1,689	1,630,000
CHROMIUM COMPOUNDS	0	0	0	0	0	0	0
NITROBENZENE	0	3	0	0	3	1	0
ZINC COMPOUNDS	0	0	0	0	0	0	0
ORIENT CORP Total	0	77	0	0	77	1,690	1,630,000
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	18,000	0	0	18,000	0	143,000
NITRATE COMPOUNDS	0	0	219,000	0	219,000	0	0
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	0	0
PERDUE GEORGETOWN Total	0	18,000	219,000	0	237,000	0	143,000
PERDUE MILFORD							
PERACETIC ACID	0	0	0	0	0	0	35,000
PERDUE MILFORD Total	0	0	0	0	0	0	35,000
PICTSWEET BRIDGEVILLE							
AMMONIA	0	900	0	0	900	0	0
PICTSWEET BRIDGEVILLE Total	0	900	0	0	900	0	0

Source: DNREC 2013 TRI Database, October, 2014
A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX C

2013 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
PPG INDUSTRIES							
CERTAIN GLYCOL ETHERS	0	5	0	0	5	5,139	0
ETHYLENE GLYCOL	0	10	0	0	10	1,932	0
ZINC COMPOUNDS	0	40	0	0	40	4,724	0
PPG INDUSTRIES Total	0	55	0	0	55	11,795	0
PRINCE MINERALS							
BARIUM COMPOUNDS	1	0	0	0	0	0	0
LEAD COMPOUNDS	0	0	0	0	0	0	0
MANGANESE COMPOUNDS	0	168	0	0	168	0	0
NICKEL COMPOUNDS	1	0	0	0	0	0	0
PRINCE MINERALS Total	2	168	0	0	168	0	0
ROHM & HAAS B2, B3, B8							
DIISOCYANATES	0	0	0	0	0	6,910	0
N,N-DIMETHYLFORMAMIDE	0	4,157	0	0	4,157	1,695,946	4,036,715
ROHM & HAAS B2, B3, B8 Total	0	4,157	0	0	4,157	1,702,856	4,036,715
ROHM & HAAS B5, B6							
4,4'-METHYLENEBIS(2-CHLOROANILINE)	0	0	0	0	0	1,507	0
DIISOCYANATES	0	2	0	0	2	22,612	0
N-METHYL-2-PYRROLIDONE	0	2,180	0	0	2,180	81,405	0
TOLUENE DIISOCYANATE (MIXED ISOMERS)	0	2	0	0	2	825	4,599
ROHM & HAAS B5, B6 Total	0	2,184	0	0	2,184	106,349	4,599
ROHM & HAAS B7, B15							
4,4'-METHYLENEBIS(2-CHLOROANILINE)	1	0	0	0	0	0	0
N-METHYL-2-PYRROLIDONE	0	788	0	0	788	11,747	0
ROHM & HAAS B7, B15 Total	1	788	0	0	788	11,747	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

Source: DNREC 2013 TRI Database, October, 2014
A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX C

2013 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	ON-SITE RELEASES TO WATER	ON-SITE RELEASES TO LAND	ON-SITE RELEASES TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
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	6	7	0	12	4,660	1,669
ZINC COMPOUNDS	0	255	83	0	338	165,044	195,847
V&S DELAWARE GALVANIZING Total	0	261	90	0	351	169,704	197,516
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	**33**	**998,934**	**2,881,902**	**151,956**	**4,032,792**	**13,577,900**	**402,732,206**

Source: DNREC 2013 TRI Database, October, 2014
A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX D

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
AEARO TECHNOLOGIES										
DIISOCYANATES	0	0	0	9,367	0	9,367	0	0	0	0
TOLUENE DIISOCYANATE (MIXED ISOMERS)	0	0	0	14,050	0	14,050	0	0	0	0
AEARO TECHNOLOGIES Total	0	0	0	23,417	0	23,417	0	0	0	0
AGILENT TECHNOLOGIES										
ACETONITRILE	0	0	15,558	0	0	15,558	0	0	0	0
METHANOL	0	0	37,215	58	0	37,273	0	0	0	0
TOLUENE	0	0	188,479	86	0	188,565	0	0	0	0
AGILENT TECHNOLOGIES Total	0	0	241,252	144	0	241,396	0	0	0	0
AIR LIQUIDE - MEDAL										
CYCLOHEXANE	0	0	17,234	0	0	17,234	0	0	0	0
METHANOL	0	0	0	86,496	0	86,496	3,016,630	0	0	3,016,630
N,N-DIMETHYLFORMAMIDE	23,501	0	1,729	0	0	25,230	0	0	0	0
N-HEXANE	0	0	0	0	0	0	2,506,103	0	0	2,506,103
N-METHYL-2-PYRROLIDONE	138,369	0	12,720	0	0	151,089	0	0	0	0
AIR LIQUIDE - MEDAL Total	161,870	0	31,683	86,496	0	280,049	5,522,733	0	0	5,522,733
AIR LIQUIDE INDUSTRIAL										
AMMONIA	0	0	0	0	0	0	0	0	0	0
AIR LIQUIDE INDUSTRIAL Total	0	0	0	0	0	0	0	0	0	0
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
ARLON										
COPPER	0	2,000	0	0	200	2,200	0	0	0	0
ETHYLBENZENE	0	0	0	750	0	750	0	0	27,000	27,000
XYLENE (MIXED ISOMERS)	0	0	0	3,000	0	3,000	0	0	108,000	108,000
ARLON Total	0	2,000	0	3,750	200	5,950	0	0	135,000	135,000

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX D

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
BALTIMORE AIRCOIL										
CHROMIUM COMPOUNDS	0	211,618	0	0	0	211,618	0	0	0	0
MANGANESE COMPOUNDS	0	125,000	0	0	0	125,000	0	0	0	0
NICKEL COMPOUNDS	0	241,000	0	0	0	241,000	0	0	0	0
BALTIMORE AIRCOIL Total	0	577,618	0	0	0	577,618	0	0	0	0
BASF NEWPORT										
ANILINE	25,543	0	7,784	10,789	0	44,116	0	0	1,211	1,211
BIPHENYL	9,802	0	40,443	54,792	0	105,037	0	0	2,321	2,321
CYCLOHEXANE	0	23,836	0	0	0	23,836	0	0	3,459	3,459
METHANOL	408,944	166,853	9,111	1,347	0	586,255	365,250	0	825,301	1,190,551
NITRATE COMPOUNDS	28,822	0	0	0	0	28,822	0	0	0	0
NITRIC ACID	0	0	0	0	0	0	0	0	29,286	29,286
N-METHYL-2-PYRROLIDONE	9,764	40,018	0	0	0	49,782	0	0	0	0
P-CHLOROANILINE	2,507	0	1,216	1,437	0	5,160	0	0	390	390
XYLENE (MIXED ISOMERS)	252	0	409	0	0	661	0	0	5,093	5,093
BASF NEWPORT Total	485,634	230,707	58,963	68,365	0	843,669	365,250	0	867,061	1,232,311
BASF SEAFORD										
AMMONIA	256	0	0	9	23	288	0	0	2,301	2,301
BUTYL ACRYLATE	0	0	0	61	0	61	0	0	58	58
CERTAIN GLYCOL ETHERS	0	0	0	0	271	271	0	0	0	0
METHYL METHACRYLATE	0	0	0	61	0	61	0	0	381	381
STYRENE	0	0	0	78	0	78	0	0	523	523
BASF SEAFORD Total	256	0	0	209	294	759	0	0	3,263	3,263
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
CARL KING Total	0	0	0	0	0	0	0	0	0	0
COLOR WORKS										
MANGANESE	0	1,094	0	0	0	1,094	0	0	0	0
COLOR WORKS Total	0	1,094	0	0	0	1,094	0	0	0	0
CRODA										
CERTAIN GLYCOL ETHERS	3,141	0	0	0	0	3,141	0	0	0	0
DIETHANOLAMINE	41	0	0	0	0	41	0	0	0	0
ETHYLENE OXIDE	0	0	0	0	0	0	0	0	0	0
METHANOL	6,019	0	10,000	0	0	16,019	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	9,201	0	10,000	420	0	19,621	0	0	0	0

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX D

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
DELAWARE CITY REFINERY										
1,2,4-TRIMETHYLBENZENE	0	0	0	0	0	0	0	0	63,921	63,921
1,3-BUTADIENE	0	0	0	0	0	0	0	0	0	0
2,4-DIMETHYLPHENOL	0	0	0	0	0	0	0	0	251,805	251,805
AMMONIA	0	0	0	0	0	0	0	15,103,696	54,847	15,158,543
ANTHRACENE	0	0	0	0	0	0	0	0	0	0
ASBESTOS (FRIABLE)	0	0	0	0	125,560	125,560	0	0	0	0
BENZENE	0	0	0	8	0	8	0	227,059	204,970	432,029
BENZO(G,H,I)PERYLENE	0	0	0	0	0	0	0	0	492	492
CARBON DISULFIDE	0	0	0	0	0	0	0	115,731	2,764,502	2,880,233
CARBONYL SULFIDE	0	0	0	0	0	0	0	69,429	13,597,669	13,667,098
CREOSOTE	0	0	0	0	17,061	17,061	0	0	0	0
CRESOL (MIXED ISOMERS)	0	0	0	0	0	0	0	18,465	313,276	331,741
CUMENE	0	0	0	0	0	0	0	0	3,318	3,318
CYANIDE COMPOUNDS	0	0	0	0	0	0	0	0	15,645	15,645
CYCLOHEXANE	0	0	0	0	0	0	0	0	7,379	7,379
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
ETHYLBENZENE	0	0	0	0	0	0	0	0	51,655	51,655
ETHYLENE	0	0	0	0	0	0	0	0	341,214	341,214
HYDROCHLORIC ACID	0	0	0	0	0	0	0	0	123,871	123,871
HYDROGEN CYANIDE	0	0	0	0	0	0	0	0	281,878	281,878
HYDROGEN SULFIDE	0	0	0	0	0	0	0	84,518	336,215,341	336,299,859
LEAD COMPOUNDS	0	44	0	0	15	59	0	0	0	0
MERCURY COMPOUNDS	0	2	0	0	0	2	0	0	0	0
METHANOL	0	0	0	0	0	0	0	0	38,261	38,261
MOLYBDENUM TRIOXIDE	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE	0	0	0	0	0	0	0	0	10,493	10,493
N-HEXANE	0	0	0	0	0	0	0	0	62,251	62,251
NICKEL	0	36,711	0	0	51	36,762	0	0	0	0
NITRATE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
PHENANTHRENE	0	0	0	0	0	0	0	0	43	43
PHENOL	0	0	0	0	0	0	0	41,004	261,601	302,605
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	0	0	0	405	405
PROPYLENE	0	0	0	0	0	0	0	0	511,882	511,882
STYRENE	0	0	0	0	0	0	0	0	1,366	1,366
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	0	0	0	0	0	0	0	199,695	199,695
XYLENE (MIXED ISOMERS)	0	2	0	0	0	2	0	0	210,448	210,448
DELAWARE CITY REFINERY Total	0	36,759	0	8	142,687	179,454	0	15,659,902	355,588,228	371,248,130
DENTSPLY LAKE VIEW										
MERCURY	0	1,086	0	0	0	1,086	0	0	0	0
DENTSPLY LAKE VIEW Total	0	1,086	0	0	0	1,086	0	0	0	0

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX D

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
DENTSPLY WEST PLANT										
METHANOL	94	0	7,838	0	0	7,932	0	0	0	0
METHYL METHACRYLATE	68	0	0	0	0	68	0	0	0	0
TOLUENE	0	0	15,244	0	0	15,244	0	0	0	0
DENTSPLY WEST PLANT Total	163	0	23,082	0	0	23,245	0	0	0	0
DOVER AFB										
1,2,4-TRIMETHYLBENZENE	0	0	0	0	0	0	0	0	0	0
CUMENE	0	0	0	0	0	0	0	0	0	0
ETHYLBENZENE	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
DOVER AFB Total	0	0	0	0	0	0	0	0	0	0
DUHADAWAY TOOL AND DIE SHOP										
CHROMIUM	0	9,966	0	0	337	10,303	0	0	0	0
NICKEL	0	7,123	0	0	226	7,349	0	0	0	0
DUHADAWAY TOOL AND DIE SHOP Total	0	17,089	0	0	563	17,652	0	0	0	0
DUPONT EDGE MOOR										
ARSENIC COMPOUNDS	0	0	0	0	1,025	1,025	0	0	0	0
BARIUM COMPOUNDS	0	0	0	0	8,758	8,758	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	969,939	969,939
CHROMIUM COMPOUNDS	0	0	0	0	179,148	179,148	0	0	0	0
COBALT COMPOUNDS	0	0	0	0	3,099	3,099	0	0	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	1	1	0	0	0	0
HEXACHLOROBENZENE	0	0	0	0	197	197	0	0	0	0
HYDROCHLORIC ACID	0	0	0	0	0	0	0	0	11,027,384	11,027,384
LEAD COMPOUNDS	0	53	0	0	8,541	8,594	0	0	0	0
MANGANESE COMPOUNDS	0	0	0	0	759,187	759,187	0	0	0	0
MERCURY COMPOUNDS	0	0	0	0	1	1	0	0	0	0
NICKEL COMPOUNDS	0	0	0	0	9,156	9,156	0	0	0	0
OCTACHLOROSTYRENE	0	0	0	0	4	4	0	0	0	0
PENTACHLOROBENZENE	0	0	0	0	8	8	0	0	0	0
PHOSGENE	0	0	0	0	0	0	0	0	165,815	165,815
POLYCHLORINATED BIPHENYLS	0	0	0	0	4	4	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	1,104,310	1,104,310
TOLUENE	0	0	0	0	0	0	0	0	0	0
VANADIUM COMPOUNDS	0	0	0	0	135,665	135,665	0	0	0	0
ZINC COMPOUNDS	0	48	0	0	14,326	14,374	0	0	0	0
DUPONT EDGE MOOR Total	0	101	0	0	1,119,120	1,119,221	0	0	13,267,448	13,267,448

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX D

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
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	30	0	0	0	0	30	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	30	0	0	0	0	30	0	0	0	0
EVRAZ CLAYMONT STEEL										
CHROMIUM COMPOUNDS	0	18,860	0	0	1,310	20,170	0	0	0	0
COPPER COMPOUNDS	0	22,298	0	0	1,740	24,038	0	0	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
LEAD COMPOUNDS	0	112,546	0	0	57	112,603	0	0	0	0
MANGANESE COMPOUNDS	0	185,960	0	0	6,815	192,775	0	0	0	0
MERCURY COMPOUNDS	0	0	0	0	2	2	0	0	0	0
NICKEL COMPOUNDS	0	2,679	0	0	769	3,448	0	0	0	0
ZINC COMPOUNDS	0	1,489,444	0	0	129	1,489,573	0	0	0	0
EVRAZ CLAYMONT STEEL Total	0	1,831,787	0	0	10,822	1,842,609	0	0	0	0
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	120	0	0	27	147	0	0	263,480	263,480
FORMOSA PLASTICS Total	0	120	0	0	27	147	0	0	263,480	263,480
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

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX D

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
HANDY TUBE										
CHROMIUM	0	45,044	0	0	89	45,133	0	0	0	0
MANGANESE	0	4,759	0	0	8	4,767	0	0	0	0
NICKEL	0	44,589	0	0	138	44,727	0	0	0	0
TRICHLOROETHYLENE	0	0	0	12,755	11	12,766	0	0	0	0
HANDY TUBE Total	0	94,392	0	12,755	246	107,393	0	0	0	0
HANESBRANDS										
NITRATE COMPOUNDS	44,740	0	0	0	0	44,740	0	0	0	0
HANESBRANDS Total	44,740	0	0	0	0	44,740	0	0	0	0
HERITAGE CONCRETE BEAR										
LEAD	0	0	0	0	0	0	0	0	0	0
HERITAGE CONCRETE BEAR Total	0	0	0	0	0	0	0	0	0	0
HERITAGE CONCRETE CHESWOLD										
LEAD	0	0	0	0	0	0	0	0	0	0
HERITAGE CONCRETE CHESWOLD Total	0	0	0	0	0	0	0	0	0	0
HERITAGE CONCRETE FRANKFORD										
LEAD	0	0	0	0	0	0	0	0	0	0
HERITAGE CONCRETE FRANKFORD Total	0	0	0	0	0	0	0	0	0	0
HERITAGE CONCRETE WILMINGTON										
LEAD	0	0	0	0	0	0	0	0	0	0
HERITAGE CONCRETE WILMINGTON Total	0	0	0	0	0	0	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
HONEYWELL										
BORON TRIFLUORIDE	0	0	0	4	0	4	0	0	0	0
HYDROGEN FLUORIDE	0	0	0	0	0	0	0	0	84	84
METHANOL	0	0	1,080	0	0	1,080	0	0	0	0
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	0	0	0	0	0
HONEYWELL Total	0	0	1,080	4	0	1,084	0	0	84	84
IKO										
POLYCYCLIC AROMATIC COMPOUNDS	0	82	0	0	1	83	551	0	0	551
IKO Total	0	82	0	0	1	83	551	0	0	551

APPENDIX D

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
INDIAN RIVER GENERATING STATION										
AMMONIA	0	0	0	0	0	0	0	0	268,538	268,538
BARIUM COMPOUNDS	0	0	0	0	1	1	0	0	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
HYDROCHLORIC ACID	0	0	0	0	0	0	0	0	1,246,982	1,246,982
HYDROGEN FLUORIDE	0	0	0	0	0	0	0	0	93,825	93,825
LEAD COMPOUNDS	0	0	0	0	0	0	0	0	0	0
MANGANESE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
MERCURY COMPOUNDS	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE	0	0	0	0	0	0	0	0	0	0
SULFURIC ACID	0	0	0	0	0	0	0	0	1,763,045	1,763,045
VANADIUM COMPOUNDS	0	0	0	0	0	0	0	0	0	0
INDIAN RIVER GENERATING STATION Total	0	0	0	0	1	1	0	0	3,372,390	3,372,390
INTERVET										
MERCURY COMPOUNDS	0	3	0	0	2	5	0	0	0	0
INTERVET Total	0	3	0	0	2	5	0	0	0	0
JOHNSON CONTROLS BATTERY PLANT										
ANTIMONY COMPOUNDS	0	11,943	0	0	0	11,943	0	0	0	0
LEAD COMPOUNDS	2	3,113,057	0	0	14,512	3,127,571	0	0	0	0
JOHNSON CONTROLS BATTERY PLANT Total	2	3,125,000	0	0	14,512	3,139,514	0	0	0	0
JOHNSON CONTROLS DIST. CENTER										
LEAD COMPOUNDS	0	1,293,566	0	0	0	1,293,566	0	0	0	0
JOHNSON CONTROLS DIST. CENTER Total	0	1,293,566	0	0	0	1,293,566	0	0	0	0
JUSTIN TANKS										
STYRENE	0	0	0	331	0	331	19,880	0	0	19,880
JUSTIN TANKS Total	0	0	0	331	0	331	19,880	0	0	19,880
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	170,202	0	0	691	170,893	0	0	0	0
NICKEL	0	55,592	0	0	210	55,802	0	0	0	0
METAL MASTERS Total	0	225,794	0	0	901	226,695	0	0	0	0

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX D

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
MOTECH AMERICAS										
LEAD	0	210	0	0	2	212	0	0	0	0
MOTECH AMERICAS Total	0	210	0	0	2	212	0	0	0	0
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 OF DELAWARE										
COPPER COMPOUNDS	0	0	0	0	0	0	0	0	0	0
HYDROGEN SULFIDE	0	0	0	0	0	0	0	0	58,265	58,265
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 OF DELAWARE Total	0	0	0	0	0	0	0	0	58,265	58,265
NORAMCO										
DICHLOROMETHANE	581	0	57,502	0	0	58,083	0	0	58,083	58,083
ETHYLENE GLYCOL	0	0	0	11,316	0	11,316	0	0	0	0
FORMIC ACID	0	0	0	0	0	0	0	0	0	0
METHANOL	6,058	0	115,103	0	0	121,161	0	0	121,161	121,161
N-BUTYL ALCOHOL	41,711	0	792,501	0	0	834,212	0	0	834,212	834,212
PERACETIC ACID	0	0	0	9,960	0	9,960	0	0	0	0
TOLUENE	5,484	0	542,902	0	0	548,386	0	0	548,385	548,385
NORAMCO Total	53,834	0	1,508,008	21,276	0	1,583,118	0	0	1,561,841	1,561,841
ORIENT CORP										
ANILINE	1,600	0	0	0	89	1,689	1,500,000	0	130,000	1,630,000
CHROMIUM COMPOUNDS	0	0	0	0	0	0	0	0	0	0
NITROBENZENE	0	0	0	0	1	1	0	0	0	0
ZINC COMPOUNDS	0	0	0	0	0	0	0	0	0	0
ORIENT CORP Total	1,600	0	0	0	90	1,690	1,500,000	0	130,000	1,630,000
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

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX D

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
PERDUE GEORGETOWN										
HYDROGEN SULFIDE	0	0	0	0	0	0	0	0	143,000	143,000
NITRATE COMPOUNDS	0	0	0	0	0	0	0	0	0	0
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	0	0	0	0	0
PERDUE GEORGETOWN Total	0	0	0	0	0	0	0	0	143,000	143,000
PERDUE MILFORD										
PERACETIC ACID	0	0	0	0	0	0	0	0	35,000	35,000
PERDUE MILFORD Total	0	0	0	0	0	0	0	0	35,000	35,000
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	5,010	0	0	124	5	5,139	0	0	0	0
ETHYLENE GLYCOL	1,232	0	0	700	0	1,932	0	0	0	0
ZINC COMPOUNDS	4,313	0	0	0	411	4,724	0	0	0	0
PPG INDUSTRIES Total	10,555	0	0	824	416	11,795	0	0	0	0
PRINCE MINERALS										
BARIUM COMPOUNDS	0	0	0	0	0	0	0	0	0	0
LEAD 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
ROHM & HAAS B2, B3, B8										
DIISOCYANATES	0	0	0	6,910	0	6,910	0	0	0	0
N,N-DIMETHYLFORMAMIDE	167,956	1,335,801	0	0	192,189	1,695,946	4,036,191	0	524	4,036,715
ROHM & HAAS B2, B3, B8 Total	167,956	1,335,801	0	6,910	192,189	1,702,856	4,036,191	0	524	4,036,715
ROHM & HAAS B5, B6										
4,4'-METHYLENEBIS(2-CHLOROANILINE)	0	0	0	0	1,507	1,507	0	0	0	0
DIISOCYANATES	0	0	0	22,592	20	22,612	0	0	0	0
N-METHYL-2-PYRROLIDONE	0	78,319	0	3,086	0	81,405	0	0	0	0
TOLUENE DIISOCYANATE (MIXED ISOMERS)	0	0	0	819	6	825	0	0	4,599	4,599
ROHM & HAAS B5, B6 Total	0	78,319	0	26,497	1,533	106,349	0	0	4,599	4,599
ROHM & HAAS B7, B15										
4,4'-METHYLENEBIS(2-CHLOROANILINE)	0	0	0	0	0	0	0	0	0	0
N-METHYL-2-PYRROLIDONE	0	11,319	0	428	0	11,747	0	0	0	0
ROHM & HAAS B7, B15 Total	0	11,319	0	428	0	11,747	0	0	0	0

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX D

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
SERVICE ENERGY DOVER										
1,2,4-TRIMETHYLBENZENE	0	0	0	0	0	0	0	0	0	0
TOLUENE	0	0	0	0	0	0	0	0	0	0
SERVICE ENERGY DOVER Total	0	0	0	0	0	0	0	0	0	0
SPI PHARMA										
CHLORINE	0	0	0	0	0	0	0	0	0	0
NITRIC ACID	0	0	0	0	0	0	0	0	0	0
SPI PHARMA Total	0	0	0	0	0	0	0	0	0	0
V&S DELAWARE GALVANIZING										
LEAD	0	4,495	0	0	165	4,660	1,669	0	0	1,669
ZINC COMPOUNDS	0	142,024	0	0	23,020	165,044	195,847	0	0	195,847
V&S DELAWARE GALVANIZING Total	0	146,519	0	0	23,185	169,704	197,516	0	0	197,516
VP RACING FUELS										
LEAD COMPOUNDS	0	0	0	0	1	1	0	0	0	0
METHANOL	0	0	0	0	0	0	0	0	0	0
TOLUENE	0	0	0	0	0	0	0	0	0	0
XYLENE (MIXED ISOMERS)	0	0	0	0	0	0	0	0	0	0
VP RACING FUELS Total	0	0	0	0	1	1	0	0	0	0
STATE TOTALS	**935,842**	**9,009,366**	**1,874,068**	**251,834**	**1,506,791**	**13,577,900**	**11,642,121**	**15,659,902**	**375,430,183**	**402,732,206**

APPENDIX E

2013 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.
DELAWARE CITY REFINERY	400,441	2,640,461	2,646	3,043,548	179,454	371,248,130
INDIAN RIVER GENERATING STATION	141,970	0	137,384	279,354	1	3,372,390
DUPONT EDGE MOOR	237,528	22,030	616	260,174	1,119,221	13,267,448
PERDUE GEORGETOWN	18,000	219,000	0	237,000	0	143,000
FORMOSA PLASTICS	89,502	0	0	89,502	147	263,480
BASF NEWPORT	23,279	0	0	23,279	843,669	1,232,311
AIR LIQUIDE INDUSTRIAL	17,792	0	0	17,792	0	0
EVRAZ CLAYMONT STEEL	2,370	306	10,905	13,581	1,842,609	0
JUSTIN TANKS	9,688	0	331	10,019	331	19,880
DUPONT RED LION PLANT	9,325	0	0	9,325	0	0
HANDY TUBE	6,046	0	0	6,046	107,393	0
HIRSH INDUSTRIES	5,717	0	0	5,717	0	0
DENTSPLY WEST PLANT	5,584	0	0	5,584	23,245	0
AIR LIQUIDE - MEDAL	4,694	0	0	4,694	280,049	5,522,733
ROHM & HAAS B2, B3, B8	4,157	0	0	4,157	1,702,856	4,036,715
CRODA	3,673	0	0	3,673	19,621	0
ARLON	2,995	0	0	2,995	5,950	135,000
BASF SEAFORD	2,506	0	0	2,506	759	3,263
MOUNTAIRE FARMS OF DELAWARE	2,417	0	0	2,417	0	58,265
NORAMCO	2,314	0	0	2,314	1,583,118	1,561,841
ROHM & HAAS B5, B6	2,184	0	0	2,184	106,349	4,599
HONEYWELL	1,408	0	0	1,408	1,084	84
AGILENT TECHNOLOGIES	1,194	0	0	1,194	241,396	0
PICTSWEET BRIDGEVILLE	900	0	0	900	0	0
ROHM & HAAS B7, B15	788	0	0	788	11,747	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	760	0	0	760	30	0
KUEHNE	683	0	0	683	0	0
V&S DELAWARE GALVANIZING	261	90	0	351	169,704	197,516
DOVER AFB	298	0	0	298	0	0
PRINCE MINERALS	168	0	0	168	0	0
JOHNSON CONTROLS BATTERY PLANT	141	14	0	156	3,139,514	0
ORIENT CORP	77	0	0	77	1,690	1,630,000
PPG INDUSTRIES	55	0	0	55	11,795	0
HERITAGE CONCRETE WILMINGTON	0	0	38	38	0	0
HERITAGE CONCRETE BEAR	0	0	18	18	0	0
HERITAGE CONCRETE CHESWOLD	0	0	14	14	0	0

Source: DNREC 2013 TRI Database, October, 2014
All amounts are in pounds

APPENDIX E

2013 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.
BALTIMORE AIRCOIL	10	0	0	10	577,618	0
AEARO TECHNOLOGIES	7	0	0	7	23,417	0
HERITAGE CONCRETE FRANKFORD	0	0	5	5	0	0
VP RACING FUELS	1	0	0	1	1	0
METAL MASTERS	1	0	0	1	226,695	0
DENTSPLY LAKE VIEW	0	0	0	0	1,086	0
ALLEN HARIM FARMS - SEAFORD	0	0	0	0	0	0
ALLEN HARIM FOODS - HARBESON	0	0	0	0	0	0
AMICK FARMS	0	0	0	0	0	0
CARL KING	0	0	0	0	0	0
COLOR WORKS	0	0	0	0	1,094	0
DUHADAWAY TOOL AND DIE SHOP	0	0	0	0	17,652	0
FUJIFILM	0	0	0	0	0	0
GAC SEAFORD	0	0	0	0	0	0
HANESBRANDS	0	0	0	0	44,740	0
IKO	0	0	0	0	83	551
INTERVET	0	0	0	0	5	0
JOHNSON CONTROLS DIST. CENTER	0	0	0	0	1,293,566	0
MACDERMID	0	0	0	0	0	0
MOTECH AMERICAS	0	0	0	0	212	0
MOUNTAIRE FARMS - FRANKFORD	0	0	0	0	0	0
PERDUE MILFORD	0	0	0	0	0	35,000
PERDUE BRIDGEVILLE	0	0	0	0	0	0
SERVICE ENERGY DOVER	0	0	0	0	0	0
SPI PHARMA	0	0	0	0	0	0
FACILITY TOTALS	**998,934**	**2,881,902**	**151,956**	**4,032,792**	**13,577,900**	**402,732,206**

Source: DNREC 2013 TRI Database, October, 2014
All amounts are in pounds

APPENDIX F

2013 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
1,2,4-TRIMETHYLBENZENE							
CARL KING	1	0	0	0	0	0	0
DELAWARE CITY REFINERY	0	1,203	5	0	1,208	0	63,921
DOVER AFB	0	57	0	0	57	0	0
GAC SEAFORD	1	0	0	0	0	0	0
SERVICE ENERGY DOVER	1	0	0	0	0	0	0
1,2,4-TRIMETHYLBENZENE Total	**3**	**1,260**	**5**	**0**	**1,265**	**0**	**63,921**
1,3-BUTADIENE							
DELAWARE CITY REFINERY	0	396	0	0	396	0	0
1,3-BUTADIENE Total	0	396	0	0	396	0	0
2,4-DIMETHYLPHENOL							
DELAWARE CITY REFINERY	0	0	179	0	179	0	251,805
2,4-DIMETHYLPHENOL Total	0	0	179	0	179	0	251,805
4,4'-METHYLENEBIS(2-CHLOROANILINE)							
ROHM & HAAS B5, B6	0	0	0	0	0	1,507	0
ROHM & HAAS B7, B15	1	0	0	0	0	0	0
4,4'-METHYLENEBIS(2-CHLOROANILINE) Total	1	0	0	0	0	1,507	0
ACETONITRILE							
AGILENT TECHNOLOGIES	0	36	0	0	36	15,558	0
ACETONITRILE Total	0	36	0	0	36	15,558	0
AMMONIA							
AIR LIQUIDE INDUSTRIAL	0	17,792	0	0	17,792	0	0
BASF SEAFORD	0	1,948	0	0	1,948	288	2,301
DELAWARE CITY REFINERY	0	29,968	6,071	0	36,039	0	15,158,543
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	743	0	0	743	30	0
FORMOSA PLASTICS	0	1,485	0	0	1,485	0	0
INDIAN RIVER GENERATING STATION	0	5,823	0	0	5,823	0	268,538
PICTSWEET BRIDGEVILLE	0	900	0	0	900	0	0
AMMONIA Total	0	58,659	6,071	0	64,730	318	15,429,382

Source: DNREC 2013 TRI Database, October, 2014
A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX F

2013 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
ANILINE							
BASF NEWPORT	0	30	0	0	30	44,116	1,211
ORIENT CORP	0	74	0	0	74	1,689	1,630,000
ANILINE Total	0	104	0	0	104	45,805	1,631,211
ANTHRACENE							
DELAWARE CITY REFINERY	0	10	5	0	15	0	0
ANTHRACENE Total	0	10	5	0	15	0	0
ANTIMONY COMPOUNDS							
JOHNSON CONTROLS BATTERY PLANT	0	0	0	0	0	11,943	0
ANTIMONY COMPOUNDS Total	0	0	0	0	0	11,943	0
ARSENIC COMPOUNDS							
DUPONT EDGE MOOR	0	0	131	0	131	1,025	0
ARSENIC COMPOUNDS Total	0	0	131	0	131	1,025	0
ASBESTOS (FRIABLE)							
DELAWARE CITY REFINERY	0	0	0	0	0	125,560	0
ASBESTOS (FRIABLE) Total	0	0	0	0	0	125,560	0
BARIUM COMPOUNDS							
DUPONT EDGE MOOR	0	1	7,001	0	7,003	8,758	0
INDIAN RIVER GENERATING STATION	0	386	0	100,040	100,426	1	0
PRINCE MINERALS	1	0	0	0	0	0	0
BARIUM COMPOUNDS Total	1	387	7,001	100,040	107,429	8,759	0
BENZENE							
DELAWARE CITY REFINERY	0	9,102	11	0	9,113	8	432,029
BENZENE Total	0	9,102	11	0	9,113	8	432,029
BENZO(G,H,I)PERYLENE							
DELAWARE CITY REFINERY	0	0	5	0	5	0	492
BENZO(G,H,I)PERYLENE Total	0	0	5	0	5	0	492

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APPENDIX F

2013 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
BIPHENYL							
BASF NEWPORT	0	97	0	0	97	105,037	2,321
BIPHENYL Total	0	97	0	0	97	105,037	2,321
BORON TRIFLUORIDE							
HONEYWELL	0	416	0	0	416	4	0
BORON TRIFLUORIDE Total	0	416	0	0	416	4	0
BUTYL ACRYLATE							
BASF SEAFORD	0	146	0	0	146	61	58
BUTYL ACRYLATE Total	0	146	0	0	146	61	58
CARBON DISULFIDE							
DELAWARE CITY REFINERY	0	1,169	0	0	1,169	0	2,880,233
CARBON DISULFIDE Total	0	1,169	0	0	1,169	0	2,880,233
CARBONYL SULFIDE							
DELAWARE CITY REFINERY	0	668	0	0	668	0	13,667,098
DUPONT EDGE MOOR	0	231,040	0	0	231,040	0	0
CARBONYL SULFIDE Total	0	231,708	0	0	231,708	0	13,667,098
CERTAIN GLYCOL ETHERS							
BASF SEAFORD	0	5	0	0	5	271	0
CRODA	0	3	0	0	3	3,141	0
HIRSH INDUSTRIES	0	5,717	0	0	5,717	0	0
PPG INDUSTRIES	0	5	0	0	5	5,139	0
CERTAIN GLYCOL ETHERS Total	0	5,730	0	0	5,730	8,551	0
CHLORINE							
DUPONT EDGE MOOR	0	1,961	0	0	1,961	0	969,939
KUEHNE	0	683	0	0	683	0	0
SPI PHARMA	1	0	0	0	0	0	0
CHLORINE Total	1	2,644	0	0	2,644	0	969,939

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2013 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
CHROMIUM							
DUHADAWAY TOOL AND DIE SHOP	0	0	0	0	0	10,303	0
HANDY TUBE	0	0	0	0	0	45,133	0
METAL MASTERS	0	1	0	0	1	170,893	0
CHROMIUM Total	0	1	0	0	1	226,329	0
CHROMIUM COMPOUNDS							
BALTIMORE AIRCOIL	0	0	0	0	0	211,618	0
DUPONT EDGE MOOR	0	0	18	0	19	179,148	0
EVRAZ CLAYMONT STEEL	0	76	3	147	226	20,170	0
ORIENT CORP	0	0	0	0	0	0	0
CHROMIUM COMPOUNDS Total	0	76	21	147	245	410,936	0
COBALT COMPOUNDS							
DUPONT EDGE MOOR	0	0	4	0	4	3,099	0
COBALT COMPOUNDS Total	0	0	4	0	4	3,099	0
COPPER							
ARLON	0	5	0	0	5	2,200	0
COPPER Total	0	5	0	0	5	2,200	0
COPPER COMPOUNDS							
AMICK FARMS	1	0	0	0	0	0	0
EVRAZ CLAYMONT STEEL	0	93	53	369	515	24,038	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	93	53	369	515	24,038	0
CREOSOTE							
DELAWARE CITY REFINERY	0	467	0	2,646	3,113	17,061	0
CREOSOTE Total	0	467	0	2,646	3,113	17,061	0

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APPENDIX F

2013 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
CRESOL (MIXED ISOMERS)							
DELAWARE CITY REFINERY	0	0	359	0	359	0	331,741
CRESOL (MIXED ISOMERS) Total	0	0	359	0	359	0	331,741
CUMENE							
DELAWARE CITY REFINERY	0	3,192	5	0	3,197	0	3,318
DOVER AFB	0	57	0	0	57	0	0
CUMENE Total	0	3,249	5	0	3,254	0	3,318
CYANIDE COMPOUNDS							
DELAWARE CITY REFINERY	0	0	158	0	158	0	15,645
CYANIDE COMPOUNDS Total	0	0	158	0	158	0	15,645
CYCLOHEXANE							
AIR LIQUIDE - MEDAL	0	954	0	0	954	17,234	0
BASF NEWPORT	0	52	0	0	52	23,836	3,459
DELAWARE CITY REFINERY	0	1,840	5	0	1,845	0	7,379
CYCLOHEXANE Total	0	2,846	5	0	2,851	41,070	10,838
DICHLOROMETHANE							
NORAMCO	0	1,874	0	0	1,874	58,083	58,083
DICHLOROMETHANE Total	0	1,874	0	0	1,874	58,083	58,083
DIETHANOLAMINE							
CRODA	0	6	0	0	6	41	0
DIETHANOLAMINE Total	0	6	0	0	6	41	0
DIISOCYANATES							
AEARO TECHNOLOGIES	0	2	0	0	2	9,367	0
MACDERMID	1	0	0	0	0	0	0
ROHM & HAAS B2, B3, B8	0	0	0	0	0	6,910	0
ROHM & HAAS B5, B6	0	2	0	0	2	22,612	0
DIISOCYANATES Total	1	4	0	0	4	38,889	0

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APPENDIX F

2013 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
DIOXIN AND DIOXIN-LIKE COMPOUNDS							
DELAWARE CITY REFINERY	0	0	0	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	0	1	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0
EVRAZ CLAYMONT STEEL	0	0	0	0	0	0	0
FORMOSA PLASTICS	0	0	0	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS Total	0	0	0	0	0	1	0
ETHYLBENZENE							
ARLON	0	590	0	0	590	750	27,000
DELAWARE CITY REFINERY	0	2,082	5	0	2,087	0	51,655
DOVER AFB	0	59	0	0	59	0	0
ETHYLBENZENE Total	0	2,731	5	0	2,736	750	78,655
ETHYLENE							
DELAWARE CITY REFINERY	0	1,920	0	0	1,920	0	341,214
ETHYLENE Total	0	1,920	0	0	1,920	0	341,214
ETHYLENE GLYCOL							
NORAMCO	0	10	0	0	10	11,316	0
PPG INDUSTRIES	0	10	0	0	10	1,932	0
ETHYLENE GLYCOL Total	0	20	0	0	20	13,248	0
ETHYLENE OXIDE							
CRODA	0	2,432	0	0	2,432	0	0
ETHYLENE OXIDE Total	0	2,432	0	0	2,432	0	0
FORMIC ACID							
NORAMCO	0	17	0	0	17	0	0
FORMIC ACID Total	0	17	0	0	17	0	0
HEXACHLOROBENZENE							
DUPONT EDGE MOOR	0	0	1	0	1	197	0
HEXACHLOROBENZENE Total	0	0	1	0	1	197	0

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APPENDIX F

2013 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
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
HYDROCHLORIC ACID							
DELAWARE CITY REFINERY	0	192	0	0	192	0	123,871
DUPONT EDGE MOOR	0	4,026	0	0	4,026	0	11,027,384
INDIAN RIVER GENERATING STATION	0	114,394	0	0	114,394	0	1,246,982
HYDROCHLORIC ACID Total	0	118,612	0	0	118,612	0	12,398,237
HYDROGEN CYANIDE							
DELAWARE CITY REFINERY	0	1,280	220	0	1,500	0	281,878
HYDROGEN CYANIDE Total	0	1,280	220	0	1,500	0	281,878
HYDROGEN FLUORIDE							
HONEYWELL	0	543	0	0	543	0	84
INDIAN RIVER GENERATING STATION	0	10,160	0	0	10,160	0	93,825
HYDROGEN FLUORIDE Total	0	10,703	0	0	10,703	0	93,909
HYDROGEN SULFIDE							
DELAWARE CITY REFINERY	0	20,891	0	0	20,891	0	336,299,859
DUPONT RED LION PLANT	0	160	0	0	160	0	0
MOUNTAIRE FARMS OF DELAWARE	0	2,417	0	0	2,417	0	58,265
PERDUE GEORGETOWN	0	18,000	0	0	18,000	0	143,000
HYDROGEN SULFIDE Total	0	41,468	0	0	41,468	0	336,501,124

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2013 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
LEAD							
HERITAGE CONCRETE BEAR	0	0	0	18	18	0	0
HERITAGE CONCRETE CHESWOLD	0	0	0	14	14	0	0
HERITAGE CONCRETE FRANKFORD	0	0	0	5	5	0	0
HERITAGE CONCRETE WILMINGTON	0	0	0	38	38	0	0
MOTECH AMERICAS	0	0	0	0	0	212	0
V&S DELAWARE GALVANIZING	0	6	7	0	12	4,660	1,669
LEAD Total	0	6	7	75	87	4,872	1,669
LEAD COMPOUNDS							
DELAWARE CITY REFINERY	0	99	3	0	102	59	0
DUPONT EDGE MOOR	0	0	84	0	84	8,594	0
EVRAZ CLAYMONT STEEL	0	250	54	53	357	112,603	0
INDIAN RIVER GENERATING STATION	0	74	0	6,217	6,291	0	0
JOHNSON CONTROLS BATTERY PLANT	0	141	14	0	156	3,127,571	0
JOHNSON CONTROLS DIST. CENTER	0	0	0	0	0	1,293,566	0
PRINCE MINERALS	0	0	0	0	0	0	0
VP RACING FUELS	0	1	0	0	1	1	0
LEAD COMPOUNDS Total	0	565	156	6,270	6,990	4,542,394	0
MANGANESE							
COLOR WORKS	0	0	0	0	0	1,094	0
HANDY TUBE	0	0	0	0	0	4,767	0
MANGANESE Total	0	0	0	0	0	5,861	0

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FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
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	125,000	0
DUPONT EDGE MOOR	0	1	14,349	0	14,350	759,187	0
EVRAZ CLAYMONT STEEL	0	293	15	9,853	10,161	192,775	0
INDIAN RIVER GENERATING STATION	0	136	0	16,761	16,897	0	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	168	0	0	168	0	0
MANGANESE COMPOUNDS Total	5	603	14,364	26,614	41,581	1,076,962	0
MERCURY							
DENTSPLY LAKE VIEW	0	0	0	0	0	1,086	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	17	0	0	17	0	0
MERCURY Total	0	17	0	0	17	1,086	0
MERCURY COMPOUNDS							
DELAWARE CITY REFINERY	0	75	2	0	77	2	0
DUPONT EDGE MOOR	0	1	0	0	1	1	0
EVRAZ CLAYMONT STEEL	0	93	0	0	93	2	0
INDIAN RIVER GENERATING STATION	0	4	0	113	117	0	0
INTERVET	0	0	0	0	0	5	0
MERCURY COMPOUNDS Total	0	173	2	113	288	10	0

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FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
METHANOL							
AGILENT TECHNOLOGIES	0	1,139	0	0	1,139	37,273	0
AIR LIQUIDE - MEDAL	0	505	0	0	505	86,496	3,016,630
BASF NEWPORT	0	21,996	0	0	21,996	586,255	1,190,551
CRODA	0	652	0	0	652	16,019	0
DELAWARE CITY REFINERY	0	5,462	5	0	5,467	0	38,261
DENTSPLY WEST PLANT	0	3,700	0	0	3,700	7,932	0
HONEYWELL	0	4	0	0	4	1,080	0
NORAMCO	0	179	0	0	179	121,161	121,161
VP RACING FUELS	1	0	0	0	0	0	0
METHANOL Total	1	33,636	5	0	33,641	856,216	4,366,603
METHYL METHACRYLATE							
BASF SEAFORD	0	197	0	0	197	61	381
DENTSPLY WEST PLANT	0	1,607	0	0	1,607	68	0
METHYL METHACRYLATE Total	0	1,804	0	0	1,804	129	381
MOLYBDENUM TRIOXIDE							
DELAWARE CITY REFINERY	0	14	0	0	14	0	0
MOLYBDENUM TRIOXIDE Total	0	14	0	0	14	0	0
N,N-DIMETHYLFORMAMIDE							
AIR LIQUIDE - MEDAL	0	25	0	0	25	25,230	0
ROHM & HAAS B2, B3, B8	0	4,157	0	0	4,157	1,695,946	4,036,715
N,N-DIMETHYLFORMAMIDE Total	0	4,182	0	0	4,182	1,721,176	4,036,715
NAPHTHALENE							
CARL KING	1	0	0	0	0	0	0
CRODA	0	2	0	0	2	420	0
DELAWARE CITY REFINERY	0	2,146	147	0	2,293	0	10,493
DOVER AFB	0	63	0	0	63	0	0
INDIAN RIVER GENERATING STATION	1	0	0	0	0	0	0
NAPHTHALENE Total	2	2,211	147	0	2,358	420	10,493

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FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
N-BUTYL ALCOHOL							
NORAMCO	0	111	0	0	111	834,212	834,212
N-BUTYL ALCOHOL Total	0	111	0	0	111	834,212	834,212
N-HEXANE							
AIR LIQUIDE - MEDAL	0	1,925	0	0	1,925	0	2,506,103
DELAWARE CITY REFINERY	0	30,085	5	0	30,090	0	62,251
N-HEXANE Total	0	32,010	5	0	32,015	0	2,568,354
NICKEL							
DELAWARE CITY REFINERY	0	1,342	1,709	0	3,051	36,762	0
DUHADAWAY TOOL AND DIE SHOP	0	0	0	0	0	7,349	0
HANDY TUBE	0	0	0	0	0	44,727	0
METAL MASTERS	0	1	0	0	1	55,802	0
NICKEL Total	0	1,343	1,709	0	3,052	144,640	0
NICKEL COMPOUNDS							
BALTIMORE AIRCOIL	0	5	0	0	5	241,000	0
DUPONT EDGE MOOR	0	1	246	0	247	9,156	0
EVRAZ CLAYMONT STEEL	0	20	20	264	304	3,448	0
PRINCE MINERALS	1	0	0	0	0	0	0
NICKEL COMPOUNDS Total	1	26	266	264	556	253,604	0
NITRATE COMPOUNDS							
ALLEN HARIM FOODS - HARBESON	1	0	0	0	0	0	0
BASF NEWPORT	0	0	0	0	0	28,822	0
DELAWARE CITY REFINERY	0	0	2,631,359	0	2,631,359	0	0
FUJIFILM	1	0	0	0	0	0	0
HANESBRANDS	0	0	0	0	0	44,740	0
PERDUE GEORGETOWN	0	0	219,000	0	219,000	0	0
NITRATE COMPOUNDS Total	2	0	2,850,359	0	2,850,359	73,562	0

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FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
NITRIC ACID							
BASF NEWPORT	0	0	0	0	0	0	29,286
SPI PHARMA	1	0	0	0	0	0	0
NITRIC ACID Total	1	0	0	0	0	0	29,286
NITROBENZENE							
ORIENT CORP	0	3	0	0	3	1	0
NITROBENZENE Total	0	3	0	0	3	1	0
N-METHYL-2-PYRROLIDONE							
AIR LIQUIDE - MEDAL	0	1,285	0	0	1,285	151,089	0
BASF NEWPORT	0	0	0	0	0	49,782	0
ROHM & HAAS B5, B6	0	2,180	0	0	2,180	81,405	0
ROHM & HAAS B7, B15	0	788	0	0	788	11,747	0
N-METHYL-2-PYRROLIDONE Total	0	4,253	0	0	4,253	294,023	0
OCTACHLOROSTYRENE							
DUPONT EDGE MOOR	0	0	0	0	0	4	0
OCTACHLOROSTYRENE Total	0	0	0	0	0	4	0
P-CHLOROANILINE							
BASF NEWPORT	0	10	0	0	10	5,160	390
P-CHLOROANILINE Total	0	10	0	0	10	5,160	390
PENTACHLOROBENZENE							
DUPONT EDGE MOOR	0	0	0	0	0	8	0
PENTACHLOROBENZENE Total	0	0	0	0	0	8	0
PERACETIC ACID							
NORAMCO	0	10	0	0	10	9,960	0
PERDUE MILFORD	0	0	0	0	0	0	35,000
PERACETIC ACID Total	0	10	0	0	10	9,960	35,000

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PHENANTHRENE							
DELAWARE CITY REFINERY	0	1	5	0	6	0	43
PHENANTHRENE Total	0	1	5	0	6	0	43
PHENOL							
DELAWARE CITY REFINERY	0	129	179	0	308	0	302,605
PHENOL Total	0	129	179	0	308	0	302,605
PHOSGENE							
DUPONT EDGE MOOR	0	301	0	0	301	0	165,815
PHOSGENE Total	0	301	0	0	301	0	165,815
POLYCHLORINATED BIPHENYLS							
DUPONT EDGE MOOR	0	0	0	0	0	4	0
POLYCHLORINATED BIPHENYLS Total	0	0	0	0	0	4	0
POLYCYCLIC AROMATIC COMPOUNDS							
DELAWARE CITY REFINERY	0	224	4	0	228	0	405
DUPONT EDGE MOOR	0	69	0	616	685	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0
HONEYWELL	0	445	0	0	445	0	0
IKO	0	0	0	0	0	83	551
PERDUE GEORGETOWN	0	0	0	0	0	0	0
POLYCYCLIC AROMATIC COMPOUNDS Total	0	738	4	616	1,358	83	956
PROPYLENE							
DELAWARE CITY REFINERY	0	8,602	0	0	8,602	0	511,882
PROPYLENE Total	0	8,602	0	0	8,602	0	511,882
PROPYLENE OXIDE							
CRODA	0	578	0	0	578	0	0
PROPYLENE OXIDE Total	0	578	0	0	578	0	0

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All Amounts Are in Pounds

APPENDIX F

2013 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
STYRENE							
BASF SEAFORD	0	210	0	0	210	78	523
DELAWARE CITY REFINERY	0	13	5	0	18	0	1,366
JUSTIN TANKS	0	9,688	0	331	10,019	331	19,880
STYRENE Total	0	9,911	5	331	10,247	409	21,769
SULFURIC ACID							
DELAWARE CITY REFINERY	0	257,679	0	0	257,679	0	0
DUPONT RED LION PLANT	0	9,165	0	0	9,165	0	0
INDIAN RIVER GENERATING STATION	0	10,910	0	0	10,910	0	1,763,045
SULFURIC ACID Total	0	277,754	0	0	277,754	0	1,763,045
TETRACHLOROETHYLENE							
DELAWARE CITY REFINERY	0	6	0	0	6	0	0
TETRACHLOROETHYLENE Total	0	6	0	0	6	0	0
TITANIUM TETRACHLORIDE							
DUPONT EDGE MOOR	0	39	0	0	39	0	1,104,310
TITANIUM TETRACHLORIDE Total	0	39	0	0	39	0	1,104,310
TOLUENE							
AGILENT TECHNOLOGIES	0	19	0	0	19	188,565	0
DELAWARE CITY REFINERY	0	14,178	5	0	14,183	0	199,695
DENTSPLY WEST PLANT	0	278	0	0	278	15,244	0
DUPONT EDGE MOOR	0	78	0	0	78	0	0
NORAMCO	0	113	0	0	113	548,386	548,385
SERVICE ENERGY DOVER	1	0	0	0	0	0	0
VP RACING FUELS	1	0	0	0	0	0	0
TOLUENE Total	2	14,666	5	0	14,671	752,195	748,080

Source: DNREC 2013 TRI Database, October, 2014
A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX F

2013 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
TOLUENE DIISOCYANATE (MIXED ISOMERS)							
AEARO TECHNOLOGIES	0	5	0	0	5	14,050	0
MACDERMID	1	0	0	0	0	0	0
ROHM & HAAS B5, B6	0	2	0	0	2	825	4,599
TOLUENE DIISOCYANATE (MIXED ISOMERS) Tota	1	7	0	0	7	14,875	4,599
TRICHLOROETHYLENE							
HANDY TUBE	0	6,046	0	0	6,046	12,766	0
TRICHLOROETHYLENE Total	0	6,046	0	0	6,046	12,766	0
VANADIUM COMPOUNDS							
DUPONT EDGE MOOR	0	1	110	0	111	135,665	0
INDIAN RIVER GENERATING STATION	0	83	0	14,253	14,336	0	0
VANADIUM COMPOUNDS Total	0	84	110	14,253	14,447	135,665	0
VINYL ACETATE							
FORMOSA PLASTICS	0	40,740	0	0	40,740	0	0
VINYL ACETATE Total	0	40,740	0	0	40,740	0	0
VINYL CHLORIDE							
FORMOSA PLASTICS	0	47,277	0	0	47,277	147	263,480
VINYL CHLORIDE Total	0	47,277	0	0	47,277	147	263,480
XYLENE (MIXED ISOMERS)							
ARLON	0	2,400	0	0	2,400	3,000	108,000
BASF NEWPORT	0	1,094	0	0	1,094	661	5,093
CARL KING	1	0	0	0	0	0	0
DELAWARE CITY REFINERY	0	6,007	5	0	6,012	2	210,448
DOVER AFB	0	62	0	0	62	0	0
VP RACING FUELS	1	0	0	0	0	0	0
XYLENE (MIXED ISOMERS) Total	**2**	**9,563**	**5**	**0**	**9,568**	**3,663**	**323,541**

Source: DNREC 2013 TRI Database, October, 2014
A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX F

2013 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
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	9	86	0	95	14,374	0
EVRAZ CLAYMONT STEEL	0	1,545	161	219	1,925	1,489,573	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	40	0	0	40	4,724	0
V&S DELAWARE GALVANIZING	0	255	83	0	338	165,044	195,847
ZINC COMPOUNDS Total	**5**	**1,849**	**330**	**219**	**2,399**	**1,673,715**	**195,847**
STATE TOTALS	**33**	**998,934**	**2,881,902**	**151,956**	**4,032,792**	**13,577,900**	**402,732,206**

Source: DNREC 2013 TRI Database, October, 2014
A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX G

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
1,2,4-TRIMETHYLBENZENE										
CARL KING	0	0	0	0	0	0	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	63,921	63,921
DOVER AFB	0	0	0	0	0	0	0	0	0	0
GAC SEAFORD	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**	**63,921**	**63,921**
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	251,805	251,805
2,4-DIMETHYLPHENOL Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**251,805**	**251,805**
4,4'-METHYLENEBIS(2-CHLOROANILINE)										
ROHM & HAAS B5, B6	0	0	0	0	1,507	1,507	0	0	0	0
ROHM & HAAS B7, B15	0	0	0	0	0	0	0	0	0	0
4,4'-METHYLENEBIS(2-CHLOROANILINE) Total	**0**	**0**	**0**	**0**	**1,507**	**1,507**	**0**	**0**	**0**	**0**
ACETONITRILE										
AGILENT TECHNOLOGIES	0	0	15,558	0	0	15,558	0	0	0	0
ACETONITRILE Total	**0**	**0**	**15,558**	**0**	**0**	**15,558**	**0**	**0**	**0**	**0**
AMMONIA										
AIR LIQUIDE INDUSTRIAL	0	0	0	0	0	0	0	0	0	0
BASF SEAFORD	256	0	0	9	23	288	0	0	2,301	2,301
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	15,103,696	54,847	15,158,543
EDGE MOOR/HAY ROAD ENERGY CENTERS	30	0	0	0	0	30	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	268,538	268,538
PICTSWEET BRIDGEVILLE	0	0	0	0	0	0	0	0	0	0
AMMONIA Total	**286**	**0**	**0**	**9**	**23**	**318**	**0**	**15,103,696**	**325,686**	**15,429,382**
ANILINE										
BASF NEWPORT	25,543	0	7,784	10,789	0	44,116	0	0	1,211	1,211
ORIENT CORP	1,600	0	0	0	89	1,689	1,500,000	0	130,000	1,630,000
ANILINE Total	**27,143**	**0**	**7,784**	**10,789**	**89**	**45,805**	**1,500,000**	**0**	**131,211**	**1,631,211**
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**
ANTIMONY COMPOUNDS										
JOHNSON CONTROLS BATTERY PLANT	0	11,943	0	0	0	11,943	0	0	0	0
ANTIMONY COMPOUNDS Total	**0**	**11,943**	**0**	**0**	**0**	**11,943**	**0**	**0**	**0**	**0**

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX G

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
ARSENIC COMPOUNDS										
DUPONT EDGE MOOR	0	0	0	0	1,025	1,025	0	0	0	0
ARSENIC COMPOUNDS Total	**0**	**0**	**0**	**0**	**1,025**	**1,025**	**0**	**0**	**0**	**0**
ASBESTOS (FRIABLE)										
DELAWARE CITY REFINERY	0	0	0	0	125,560	125,560	0	0	0	0
ASBESTOS (FRIABLE) Total	**0**	**0**	**0**	**0**	**125,560**	**125,560**	**0**	**0**	**0**	**0**
BARIUM COMPOUNDS										
DUPONT EDGE MOOR	0	0	0	0	8,758	8,758	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	1	1	0	0	0	0
PRINCE MINERALS	0	0	0	0	0	0	0	0	0	0
BARIUM COMPOUNDS Total	**0**	**0**	**0**	**0**	**8,759**	**8,759**	**0**	**0**	**0**	**0**
BENZENE										
DELAWARE CITY REFINERY	0	0	0	8	0	8	0	227,059	204,970	432,029
BENZENE Total	**0**	**0**	**0**	**8**	**0**	**8**	**0**	**227,059**	**204,970**	**432,029**
BENZO(G,H,I)PERYLENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	492	492
BENZO(G,H,I)PERYLENE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**492**	**492**
BIPHENYL										
BASF NEWPORT	9,802	0	40,443	54,792	0	105,037	0	0	2,321	2,321
BIPHENYL Total	**9,802**	**0**	**40,443**	**54,792**	**0**	**105,037**	**0**	**0**	**2,321**	**2,321**
BORON TRIFLUORIDE										
HONEYWELL	0	0	0	4	0	4	0	0	0	0
BORON TRIFLUORIDE Total	**0**	**0**	**0**	**4**	**0**	**4**	**0**	**0**	**0**	**0**
BUTYL ACRYLATE										
BASF SEAFORD	0	0	0	61	0	61	0	0	58	58
BUTYL ACRYLATE Total	**0**	**0**	**0**	**61**	**0**	**61**	**0**	**0**	**58**	**58**
CARBON DISULFIDE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	115,731	2,764,502	2,880,233
CARBON DISULFIDE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**115,731**	**2,764,502**	**2,880,233**
CARBONYL SULFIDE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	69,429	13,597,669	13,667,098
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	0	0
CARBONYL SULFIDE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**69,429**	**13,597,669**	**13,667,098**

APPENDIX G

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
CERTAIN GLYCOL ETHERS										
BASF SEAFORD	0	0	0	0	271	271	0	0	0	0
CRODA	3,141	0	0	0	0	3,141	0	0	0	0
HIRSH INDUSTRIES	0	0	0	0	0	0	0	0	0	0
PPG INDUSTRIES	5,010	0	0	124	5	5,139	0	0	0	0
CERTAIN GLYCOL ETHERS Total	**8,151**	**0**	**0**	**124**	**276**	**8,551**	**0**	**0**	**0**	**0**
CHLORINE										
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	969,939	969,939
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**	**969,939**	**969,939**
CHROMIUM										
DUHADAWAY TOOL AND DIE SHOP	0	9,966	0	0	337	10,303	0	0	0	0
HANDY TUBE	0	45,044	0	0	89	45,133	0	0	0	0
METAL MASTERS	0	170,202	0	0	691	170,893	0	0	0	0
CHROMIUM Total	**0**	**225,212**	**0**	**0**	**1,117**	**226,329**	**0**	**0**	**0**	**0**
CHROMIUM COMPOUNDS										
BALTIMORE AIRCOIL	0	211,618	0	0	0	211,618	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	179,148	179,148	0	0	0	0
EVRAZ CLAYMONT STEEL	0	18,860	0	0	1,310	20,170	0	0	0	0
ORIENT CORP	0	0	0	0	0	0	0	0	0	0
CHROMIUM COMPOUNDS Total	**0**	**230,478**	**0**	**0**	**180,458**	**410,936**	**0**	**0**	**0**	**0**
COBALT COMPOUNDS										
DUPONT EDGE MOOR	0	0	0	0	3,099	3,099	0	0	0	0
COBALT COMPOUNDS Total	**0**	**0**	**0**	**0**	**3,099**	**3,099**	**0**	**0**	**0**	**0**
COPPER										
ARLON	0	2,000	0	0	200	2,200	0	0	0	0
COPPER Total	**0**	**2,000**	**0**	**0**	**200**	**2,200**	**0**	**0**	**0**	**0**
COPPER COMPOUNDS										
AMICK FARMS	0	0	0	0	0	0	0	0	0	0
EVRAZ CLAYMONT STEEL	0	22,298	0	0	1,740	24,038	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**	**22,298**	**0**	**0**	**1,740**	**24,038**	**0**	**0**	**0**	**0**

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX G

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
CREOSOTE										
DELAWARE CITY REFINERY	0	0	0	0	17,061	17,061	0	0	0	0
CREOSOTE Total	**0**	**0**	**0**	**0**	**17,061**	**17,061**	**0**	**0**	**0**	**0**
CRESOL (MIXED ISOMERS)										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	18,465	313,276	331,741
CRESOL (MIXED ISOMERS) Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18,465**	**313,276**	**331,741**
CUMENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	3,318	3,318
DOVER AFB	0	0	0	0	0	0	0	0	0	0
CUMENE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,318**	**3,318**
CYANIDE COMPOUNDS										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	15,645	15,645
CYANIDE COMPOUNDS Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15,645**	**15,645**
CYCLOHEXANE										
AIR LIQUIDE - MEDAL	0	0	17,234	0	0	17,234	0	0	0	0
BASF NEWPORT	0	23,836	0	0	0	23,836	0	0	3,459	3,459
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	7,379	7,379
CYCLOHEXANE Total	**0**	**23,836**	**17,234**	**0**	**0**	**41,070**	**0**	**0**	**10,838**	**10,838**
DICHLOROMETHANE										
NORAMCO	581	0	57,502	0	0	58,083	0	0	58,083	58,083
DICHLOROMETHANE Total	**581**	**0**	**57,502**	**0**	**0**	**58,083**	**0**	**0**	**58,083**	**58,083**
DIETHANOLAMINE										
CRODA	41	0	0	0	0	41	0	0	0	0
DIETHANOLAMINE Total	**41**	**0**	**0**	**0**	**0**	**41**	**0**	**0**	**0**	**0**
DIISOCYANATES										
AEARO TECHNOLOGIES	0	0	0	9,367	0	9,367	0	0	0	0
MACDERMID	0	0	0	0	0	0	0	0	0	0
ROHM & HAAS B2, B3, B8	0	0	0	6,910	0	6,910	0	0	0	0
ROHM & HAAS B5, B6	0	0	0	22,592	20	22,612	0	0	0	0
DIISOCYANATES Total	**0**	**0**	**0**	**38,869**	**20**	**38,889**	**0**	**0**	**0**	**0**

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX G

2013 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	1	1	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0	0	0	0
EVRAZ CLAYMONT STEEL	0	0	0	0	0	0	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	0	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS Total	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**
ETHYLBENZENE										
ARLON	0	0	0	750	0	750	0	0	27,000	27,000
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	51,655	51,655
DOVER AFB	0	0	0	0	0	0	0	0	0	0
ETHYLBENZENE Total	**0**	**0**	**0**	**750**	**0**	**750**	**0**	**0**	**78,655**	**78,655**
ETHYLENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	341,214	341,214
ETHYLENE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**341,214**	**341,214**
ETHYLENE GLYCOL										
NORAMCO	0	0	0	11,316	0	11,316	0	0	0	0
PPG INDUSTRIES	1,232	0	0	700	0	1,932	0	0	0	0
ETHYLENE GLYCOL Total	**1,232**	**0**	**0**	**12,016**	**0**	**13,248**	**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	0	0	0	0	0	0	0	0	0	0
FORMIC ACID Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HEXACHLOROBENZENE										
DUPONT EDGE MOOR	0	0	0	0	197	197	0	0	0	0
HEXACHLOROBENZENE Total	**0**	**0**	**0**	**0**	**197**	**197**	**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**

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX G

2013 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	123,871	123,871
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	11,027,384	11,027,384
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	1,246,982	1,246,982
HYDROCHLORIC ACID Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12,398,237**	**12,398,237**
HYDROGEN CYANIDE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	281,878	281,878
HYDROGEN CYANIDE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**281,878**	**281,878**
HYDROGEN FLUORIDE										
HONEYWELL	0	0	0	0	0	0	0	0	84	84
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	93,825	93,825
HYDROGEN FLUORIDE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**93,909**	**93,909**
HYDROGEN SULFIDE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	84,518	336,215,341	336,299,859
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	58,265	58,265
PERDUE GEORGETOWN	0	0	0	0	0	0	0	0	143,000	143,000
HYDROGEN SULFIDE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**84,518**	**336,416,606**	**336,501,124**
LEAD										
HERITAGE CONCRETE BEAR	0	0	0	0	0	0	0	0	0	0
HERITAGE CONCRETE CHESWOLD	0	0	0	0	0	0	0	0	0	0
HERITAGE CONCRETE FRANKFORD	0	0	0	0	0	0	0	0	0	0
HERITAGE CONCRETE WILMINGTON	0	0	0	0	0	0	0	0	0	0
MOTECH AMERICAS	0	210	0	0	2	212	0	0	0	0
V&S DELAWARE GALVANIZING	0	4,495	0	0	165	4,660	1,669	0	0	1,669
LEAD Total	**0**	**4,705**	**0**	**0**	**166**	**4,872**	**1,669**	**0**	**0**	**1,669**
LEAD COMPOUNDS										
DELAWARE CITY REFINERY	0	44	0	0	15	59	0	0	0	0
DUPONT EDGE MOOR	0	53	0	0	8,541	8,594	0	0	0	0
EVRAZ CLAYMONT STEEL	0	112,546	0	0	57	112,603	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	0	0
JOHNSON CONTROLS BATTERY PLANT	2	3,113,057	0	0	14,512	3,127,571	0	0	0	0
JOHNSON CONTROLS DIST. CENTER	0	1,293,566	0	0	0	1,293,566	0	0	0	0
PRINCE MINERALS	0	0	0	0	0	0	0	0	0	0
VP RACING FUELS	0	0	0	0	1	1	0	0	0	0
LEAD COMPOUNDS Total	**3**	**4,519,266**	**0**	**0**	**23,125**	**4,542,394**	**0**	**0**	**0**	**0**

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX G

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
MANGANESE										
COLOR WORKS	0	1,094	0	0	0	1,094	0	0	0	0
HANDY TUBE	0	4,759	0	0	8	4,767	0	0	0	0
MANGANESE Total	**0**	**5,853**	**0**	**0**	**8**	**5,861**	**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	125,000	0	0	0	125,000	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	759,187	759,187	0	0	0	0
EVRAZ CLAYMONT STEEL	0	185,960	0	0	6,815	192,775	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	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**	**310,960**	**0**	**0**	**766,002**	**1,076,962**	**0**	**0**	**0**	**0**
MERCURY										
DENTSPLY LAKE VIEW	0	1,086	0	0	0	1,086	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0	0	0	0
MERCURY Total	**0**	**1,086**	**0**	**0**	**0**	**1,086**	**0**	**0**	**0**	**0**
MERCURY COMPOUNDS										
DELAWARE CITY REFINERY	0	2	0	0	0	2	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	1	1	0	0	0	0
EVRAZ CLAYMONT STEEL	0	0	0	0	2	2	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	0	0
INTERVET	0	3	0	0	2	5	0	0	0	0
MERCURY COMPOUNDS Total	**0**	**5**	**0**	**0**	**5**	**10**	**0**	**0**	**0**	**0**
METHANOL										
AGILENT TECHNOLOGIES	0	0	37,215	58	0	37,273	0	0	0	0
AIR LIQUIDE - MEDAL	0	0	0	86,496	0	86,496	3,016,630	0	0	3,016,630
BASF NEWPORT	408,944	166,853	9,111	1,347	0	586,255	365,250	0	825,301	1,190,551
CRODA	6,019	0	10,000	0	0	16,019	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	38,261	38,261
DENTSPLY WEST PLANT	94	0	7,838	0	0	7,932	0	0	0	0
HONEYWELL	0	0	1,080	0	0	1,080	0	0	0	0
NORAMCO	6,058	0	115,103	0	0	121,161	0	0	121,161	121,161
VP RACING FUELS	0	0	0	0	0	0	0	0	0	0
METHANOL Total	**421,115**	**166,853**	**180,347**	**87,901**	**0**	**856,216**	**3,381,880**	**0**	**984,723**	**4,366,603**

Source: DNREC 2013 TRI Database, October, 2014

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APPENDIX G

2013 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										
BASF SEAFORD	0	0	0	61	0	61	0	0	381	381
DENTSPLY WEST PLANT	68	0	0	0	0	68	0	0	0	0
METHYL METHACRYLATE Total	**68**	**0**	**0**	**61**	**0**	**129**	**0**	**0**	**381**	**381**
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	23,501	0	1,729	0	0	25,230	0	0	0	0
ROHM & HAAS B2, B3, B8	167,956	1,335,801	0	0	192,189	1,695,946	4,036,191	0	524	4,036,715
N,N-DIMETHYLFORMAMIDE Total	**191,457**	**1,335,801**	**1,729**	**0**	**192,189**	**1,721,176**	**4,036,191**	**0**	**524**	**4,036,715**
NAPHTHALENE										
CARL KING	0	0	0	0	0	0	0	0	0	0
CRODA	0	0	0	420	0	420	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	10,493	10,493
DOVER AFB	0	0	0	0	0	0	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE Total	**0**	**0**	**0**	**420**	**0**	**420**	**0**	**0**	**10,493**	**10,493**
N-BUTYL ALCOHOL										
NORAMCO	41,711	0	792,501	0	0	834,212	0	0	834,212	834,212
N-BUTYL ALCOHOL Total	**41,711**	**0**	**792,501**	**0**	**0**	**834,212**	**0**	**0**	**834,212**	**834,212**
N-HEXANE										
AIR LIQUIDE - MEDAL	0	0	0	0	0	0	2,506,103	0	0	2,506,103
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	62,251	62,251
N-HEXANE Total	**0**	**0**	**0**	**0**	**0**	**0**	**2,506,103**	**0**	**62,251**	**2,568,354**
NICKEL										
DELAWARE CITY REFINERY	0	36,711	0	0	51	36,762	0	0	0	0
DUHADAWAY TOOL AND DIE SHOP	0	7,123	0	0	226	7,349	0	0	0	0
HANDY TUBE	0	44,589	0	0	138	44,727	0	0	0	0
METAL MASTERS	0	55,592	0	0	210	55,802	0	0	0	0
NICKEL Total	**0**	**144,015**	**0**	**0**	**625**	**144,640**	**0**	**0**	**0**	**0**

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX G

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
NICKEL COMPOUNDS										
BALTIMORE AIRCOIL	0	241,000	0	0	0	241,000	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	9,156	9,156	0	0	0	0
EVRAZ CLAYMONT STEEL	0	2,679	0	0	769	3,448	0	0	0	0
PRINCE MINERALS	0	0	0	0	0	0	0	0	0	0
NICKEL COMPOUNDS Total	**0**	**243,679**	**0**	**0**	**9,925**	**253,604**	**0**	**0**	**0**	**0**
NITRATE COMPOUNDS										
ALLEN HARIM FOODS - HARBESON	0	0	0	0	0	0	0	0	0	0
BASF NEWPORT	28,822	0	0	0	0	28,822	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	44,740	0	0	0	0	44,740	0	0	0	0
PERDUE GEORGETOWN	0	0	0	0	0	0	0	0	0	0
NITRATE COMPOUNDS Total	**73,562**	**0**	**0**	**0**	**0**	**73,562**	**0**	**0**	**0**	**0**
NITRIC ACID										
BASF NEWPORT	0	0	0	0	0	0	0	0	29,286	29,286
SPI PHARMA	0	0	0	0	0	0	0	0	0	0
NITRIC ACID Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**29,286**	**29,286**
NITROBENZENE										
ORIENT CORP	0	0	0	0	1	1	0	0	0	0
NITROBENZENE Total	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**
N-METHYL-2-PYRROLIDONE										
AIR LIQUIDE - MEDAL	138,369	0	12,720	0	0	151,089	0	0	0	0
BASF NEWPORT	9,764	40,018	0	0	0	49,782	0	0	0	0
ROHM & HAAS B5, B6	0	78,319	0	3,086	0	81,405	0	0	0	0
ROHM & HAAS B7, B15	0	11,319	0	428	0	11,747	0	0	0	0
N-METHYL-2-PYRROLIDONE Total	**148,133**	**129,656**	**12,720**	**3,514**	**0**	**294,023**	**0**	**0**	**0**	**0**
OCTACHLOROSTYRENE										
DUPONT EDGE MOOR	0	0	0	0	4	4	0	0	0	0
OCTACHLOROSTYRENE Total	**0**	**0**	**0**	**0**	**4**	**4**	**0**	**0**	**0**	**0**
P-CHLOROANILINE										
BASF NEWPORT	2,507	0	1,216	1,437	0	5,160	0	0	390	390
P-CHLOROANILINE Total	**2,507**	**0**	**1,216**	**1,437**	**0**	**5,160**	**0**	**0**	**390**	**390**

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APPENDIX G

2013 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
PENTACHLOROBENZENE										
DUPONT EDGE MOOR	0	0	0	0	8	8	0	0	0	0
PENTACHLOROBENZENE Total	**0**	**0**	**0**	**0**	**8**	**8**	**0**	**0**	**0**	**0**
PERACETIC ACID										
NORAMCO	0	0	0	9,960	0	9,960	0	0	0	0
PERDUE MILFORD	0	0	0	0	0	0	0	0	35,000	35,000
PERACETIC ACID Total	**0**	**0**	**0**	**9,960**	**0**	**9,960**	**0**	**0**	**35,000**	**35,000**
PHENANTHRENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	43	43
PHENANTHRENE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**43**	**43**
PHENOL										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	41,004	261,601	302,605
PHENOL Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**41,004**	**261,601**	**302,605**
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	4	4	0	0	0	0
POLYCHLORINATED BIPHENYLS Total	**0**	**0**	**0**	**0**	**4**	**4**	**0**	**0**	**0**	**0**
POLYCYCLIC AROMATIC COMPOUNDS										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	405	405
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	82	0	0	1	83	551	0	0	551
PERDUE GEORGETOWN	0	0	0	0	0	0	0	0	0	0
POLYCYCLIC AROMATIC COMPOUNDS Total	**0**	**82**	**0**	**0**	**1**	**83**	**551**	**0**	**405**	**956**
PROPYLENE										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	511,882	511,882
PROPYLENE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**511,882**	**511,882**
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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APPENDIX G

2013 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										
BASF SEAFORD	0	0	0	78	0	78	0	0	523	523
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	1,366	1,366
JUSTIN TANKS	0	0	0	331	0	331	19,880	0	0	19,880
STYRENE Total	**0**	**0**	**0**	**409**	**0**	**409**	**19,880**	**0**	**1,889**	**21,769**
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	1,763,045	1,763,045
SULFURIC ACID Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,763,045**	**1,763,045**
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	1,104,310	1,104,310
TITANIUM TETRACHLORIDE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,104,310**	**1,104,310**
TOLUENE										
AGILENT TECHNOLOGIES	0	0	188,479	86	0	188,565	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	199,695	199,695
DENTSPLY WEST PLANT	0	0	15,244	0	0	15,244	0	0	0	0
DUPONT EDGE MOOR	0	0	0	0	0	0	0	0	0	0
NORAMCO	5,484	0	542,902	0	0	548,386	0	0	548,385	548,385
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	**5,484**	**0**	**746,625**	**86**	**0**	**752,195**	**0**	**0**	**748,080**	**748,080**
TOLUENE DIISOCYANATE (MIXED ISOMERS)										
AEARO TECHNOLOGIES	0	0	0	14,050	0	14,050	0	0	0	0
MACDERMID	0	0	0	0	0	0	0	0	0	0
ROHM & HAAS B5, B6	0	0	0	819	6	825	0	0	4,599	4,599
TOLUENE DIISOCYANATE (MIXED ISOMERS) Total	**0**	**0**	**0**	**14,869**	**6**	**14,875**	**0**	**0**	**4,599**	**4,599**
TRICHLOROETHYLENE										
HANDY TUBE	0	0	0	12,755	11	12,766	0	0	0	0
TRICHLOROETHYLENE Total	**0**	**0**	**0**	**12,755**	**11**	**12,766**	**0**	**0**	**0**	**0**

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APPENDIX G

2013 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
VANADIUM COMPOUNDS										
DUPONT EDGE MOOR	0	0	0	0	135,665	135,665	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	0	0
VANADIUM COMPOUNDS Total	**0**	**0**	**0**	**0**	**135,665**	**135,665**	**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	120	0	0	27	147	0	0	263,480	263,480
VINYL CHLORIDE Total	**0**	**120**	**0**	**0**	**27**	**147**	**0**	**0**	**263,480**	**263,480**
XYLENE (MIXED ISOMERS)										
ARLON	0	0	0	3,000	0	3,000	0	0	108,000	108,000
BASF NEWPORT	252	0	409	0	0	661	0	0	5,093	5,093
CARL KING	0	0	0	0	0	0	0	0	0	0
DELAWARE CITY REFINERY	0	2	0	0	0	2	0	0	210,448	210,448
DOVER AFB	0	0	0	0	0	0	0	0	0	0
VP RACING FUELS	0	0	0	0	0	0	0	0	0	0
XYLENE (MIXED ISOMERS) Total	**252**	**2**	**409**	**3,000**	**0**	**3,663**	**0**	**0**	**323,541**	**323,541**
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	48	0	0	14,326	14,374	0	0	0	0
EVRAZ CLAYMONT STEEL	0	1,489,444	0	0	129	1,489,573	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	4,313	0	0	0	411	4,724	0	0	0	0
V&S DELAWARE GALVANIZING	0	142,024	0	0	23,020	165,044	195,847	0	0	195,847
ZINC COMPOUNDS Total	**4,313**	**1,631,516**	**0**	**0**	**37,886**	**1,673,715**	**195,847**	**0**	**0**	**195,847**
STATE TOTALS	**935,842**	**9,009,366**	**1,874,068**	**251,834**	**1,506,791**	**13,577,900**	**11,642,121**	**15,659,902**	**375,430,183**	**402,732,206**

Source: DNREC 2013 TRI Database, October, 2014

All Amounts Are in Pounds

APPENDIX H

2013 ON-SITE RELEASE SUMMARY BY CHEMICAL

CHEMICAL - RANKED BY TOTAL ON-SITE RELEASE	ON-SITE RELEASES				TRANSFERS OFF-SITE	ON-SITE WASTE MGMT.
	TO AIR	TO WATER	TO LAND	TOTAL		
NITRATE COMPOUNDS	0	2,850,359	0	2,850,359	73,562	0
SULFURIC ACID	277,754	0	0	277,754	0	1,763,045
CARBONYL SULFIDE	231,708	0	0	231,708	0	13,667,098
HYDROCHLORIC ACID	118,612	0	0	118,612	0	12,398,237
BARIUM COMPOUNDS	387	7,001	100,040	107,429	8,759	0
AMMONIA	58,659	6,071	0	64,730	318	15,429,382
VINYL CHLORIDE	47,277	0	0	47,277	147	263,480
MANGANESE COMPOUNDS	603	14,364	26,614	41,581	1,076,962	0
HYDROGEN SULFIDE	41,468	0	0	41,468	0	336,501,124
VINYL ACETATE	40,740	0	0	40,740	0	0
METHANOL	33,636	5	0	33,641	856,216	4,366,603
N-HEXANE	32,010	5	0	32,015	0	2,568,354
TOLUENE	14,666	5	0	14,671	752,195	748,080
VANADIUM COMPOUNDS	84	110	14,253	14,447	135,665	0
HYDROGEN FLUORIDE	10,703	0	0	10,703	0	93,909
STYRENE	9,911	5	331	10,247	409	21,769
XYLENE (MIXED ISOMERS)	9,563	5	0	9,568	3,663	323,541
BENZENE	9,102	11	0	9,113	8	432,029
PROPYLENE	8,602	0	0	8,602	0	511,882
LEAD COMPOUNDS	565	156	6,270	6,990	4,542,394	0
TRICHLOROETHYLENE	6,046	0	0	6,046	12,766	0
CERTAIN GLYCOL ETHERS	5,730	0	0	5,730	8,551	0
N-METHYL-2-PYRROLIDONE	4,253	0	0	4,253	294,023	0
N,N-DIMETHYLFORMAMIDE	4,182	0	0	4,182	1,721,176	4,036,715
CUMENE	3,249	5	0	3,254	0	3,318
CREOSOTE	467	0	2,646	3,113	17,061	0
NICKEL	1,343	1,709	0	3,052	144,640	0
CYCLOHEXANE	2,846	5	0	2,851	41,070	10,838
ETHYLBENZENE	2,731	5	0	2,736	750	78,655
CHLORINE	2,644	0	0	2,644	0	969,939
ETHYLENE OXIDE	2,432	0	0	2,432	0	0
ZINC COMPOUNDS	1,849	330	219	2,399	1,673,715	195,847
NAPHTHALENE	2,211	147	0	2,358	420	10,493
ETHYLENE	1,920	0	0	1,920	0	341,214
DICHLOROMETHANE	1,874	0	0	1,874	58,083	58,083
METHYL METHACRYLATE	1,804	0	0	1,804	129	381
HYDROGEN CYANIDE	1,280	220	0	1,500	0	281,878
POLYCYCLIC AROMATIC COMPOUNDS	738	4	616	1,358	83	956
1,2,4-TRIMETHYLBENZENE	1,260	5	0	1,265	0	63,921
CARBON DISULFIDE	1,169	0	0	1,169	0	2,880,233
PROPYLENE OXIDE	578	0	0	578	0	0
NICKEL COMPOUNDS	26	266	264	556	253,604	0
COPPER COMPOUNDS	93	53	369	515	24,038	0
BORON TRIFLUORIDE	416	0	0	416	4	0
1,3-BUTADIENE	396	0	0	396	0	0
CRESOL (MIXED ISOMERS)	0	359	0	359	0	331,741
PHENOL	129	179	0	308	0	302,605
PHOSGENE	301	0	0	301	0	165,815
MERCURY COMPOUNDS	173	2	113	288	10	0

Source: DNREC 2013 TRI Database, October, 2014 All amounts are in pounds

APPENDIX H

2013 ON-SITE RELEASE SUMMARY BY CHEMICAL

CHEMICAL - RANKED BY TOTAL ON-SITE RELEASE	ON-SITE RELEASES				TRANSFERS OFF-SITE	ON-SITE WASTE MGMT.
	TO AIR	TO WATER	TO LAND	TOTAL		
CHROMIUM COMPOUNDS	76	21	147	245	410,936	0
2,4-DIMETHYLPHENOL	0	179	0	179	0	251,805
CYANIDE COMPOUNDS	0	158	0	158	0	15,645
BUTYL ACRYLATE	146	0	0	146	61	58
ARSENIC COMPOUNDS	0	131	0	131	1,025	0
N-BUTYL ALCOHOL	111	0	0	111	834,212	834,212
ANILINE	104	0	0	104	45,805	1,631,211
BIPHENYL	97	0	0	97	105,037	2,321
LEAD	6	7	75	87	4,872	1,669
TITANIUM TETRACHLORIDE	39	0	0	39	0	1,104,310
ACETONITRILE	36	0	0	36	15,558	0
ETHYLENE GLYCOL	20	0	0	20	13,248	0
MERCURY	17	0	0	17.11	1,086	0
FORMIC ACID	17	0	0	17	0	0
ANTHRACENE	10	5	0	15	0	0
MOLYBDENUM TRIOXIDE	14	0	0	14	0	0
PERACETIC ACID	10	0	0	10	9,960	35,000
P-CHLOROANILINE	10	0	0	10	5,160	390
TOLUENE DIISOCYANATE (MIXED ISOMERS)	7	0	0	7	14,875	4,599
PHENANTHRENE	1	5	0	6	0	43
TETRACHLOROETHYLENE	6	0	0	6	0	0
DIETHANOLAMINE	6	0	0	6	41	0
COPPER	5	0	0	5	2,200	0
BENZO(G,H,I)PERYLENE	0	5	0	5	0	492
DIISOCYANATES	4	0	0	4	38,889	0
COBALT COMPOUNDS	0	4	0	4	3,099	0
NITROBENZENE	3	0	0	3	1	0
HEXACHLOROBENZENE	0.08	0.55	0.00	0.63	197	0
CHROMIUM	0.50	0.00	0.00	0.50	226,329	0
OCTACHLOROSTYRENE	0.00	0.35	0.00	0.35	4.3	0
PENTACHLOROBENZENE	0.09	0.09	0.00	0.18	8.0	0
4,4'-METHYLENEBIS(2-CHLOROANILINE)	0.04	0.00	0.00	0.04	1,507	0
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0.02	0.01	0.00	0.03	1.2	0
HYDRAZINE	0	0	0	0	0	0
ASBESTOS (FRIABLE)	0	0	0	0	125,560	0
MANGANESE	0	0	0	0	5,861	0
POLYCHLORINATED BIPHENYLS	0	0	0	0	4.3	0
HYDRAZINE SULFATE	0	0	0	0	0	0
NITRIC ACID	0	0	0	0	0	29,286
ANTIMONY COMPOUNDS	0	0	0	0	11,943	0
STATE TOTALS	**998,934**	**2,881,902**	**151,956**	**4,032,792**	**13,577,900**	**402,732,206**

All amounts are in pounds

Source: DNREC 2013 TRI Database, October, 2014

APPENDIX I

2013 PBT RELEASE AND TRANSFER DETAIL

PBT CHEMICAL / FACILITY	ON-SITE RELEASES AIR	WATER	LAND	TOTAL	TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
BENZO(G,H,I)PERYLENE						
DELAWARE CITY REFINERY	0.00	5.00	0.00	5.00	0.00	492.00
BENZO(G,H,I)PERYLENE Total	**0.00**	**5.00**	**0.00**	**5.00**	**0.00**	**492.00**
DIOXIN AND DIOXIN-LIKE COMPOUNDS						
DELAWARE CITY REFINERY	0.000000	0.000000	0.000000	0.00	0.00	0.00
DUPONT EDGE MOOR	0.000082	0.011796	0.000000	0.01	1.16	0.00
EDGE MOOR/HAY ROAD ENERGY CENTERS	0.006811	0.000000	0.000000	0.01	0.00	0.00
EVRAZ CLAYMONT STEEL	0.010087	0.000000	0.000000	0.01	0.00	0.00
FORMOSA PLASTICS	0.000011	0.000000	0.000000	0.00	0.00	0.00
INDIAN RIVER GENERATING STATION	0.000312	0.000000	0.000000	0.00	0.00	0.00
DIOXIN AND DIOXIN-LIKE COMPOUNDS Total	**0.017302**	**0.011796**	**0.000000**	**0.029098**	**1.158411**	**0.001168**
HEXACHLOROBENZENE						
DUPONT EDGE MOOR	0.08	0.55	0.00	0.63	196.78	0.00
HEXACHLOROBENZENE Total	**0.08**	**0.55**	**0.00**	**0.63**	**196.78**	**0.00**
LEAD						
HERITAGE CONCRETE BEAR	0.00	0.00	17.61	17.61	0.00	0.00
HERITAGE CONCRETE CHESWOLD	0.00	0.00	13.75	13.75	0.00	0.00
HERITAGE CONCRETE FRANKFORD	0.00	0.00	5.27	5.27	0.00	0.00
HERITAGE CONCRETE WILMINGTON	0.01	0.00	38.18	38.19	0.00	0.00
MOTECH AMERICAS	0.00	0.00	0.00	0.00	211.90	0.00
V&S DELAWARE GALVANIZING	5.60	6.80	0.00	12.40	4,659.70	1,669.00
LEAD Total	**5.61**	**6.80**	**74.81**	**87.22**	**4,871.60**	**1,669.00**
LEAD COMPOUNDS						
DELAWARE CITY REFINERY	98.50	3.00	0.00	101.50	58.60	0.00
DUPONT EDGE MOOR	0.00	84.40	0.00	84.40	8,593.84	0.00
EVRAZ CLAYMONT STEEL	250.00	53.99	53.00	356.99	112,603.00	0.00
INDIAN RIVER GENERATING STATION	74.32	0.01	6,216.70	6,291.03	0.01	0.00
JOHNSON CONTROLS BATTERY PLANT	141.20	14.30	0.00	155.50	3,127,571.30	0.00
JOHNSON CONTROLS DIST. CENTER	0.00	0.00	0.00	0.00	1,293,566.35	0.00
PRINCE MINERALS	0.02	0.00	0.00	0.02	0.00	0.00
VP RACING FUELS	1.00	0.00	0.00	1.00	1.00	0.00
LEAD COMPOUNDS Total	**565.04**	**155.70**	**6,269.70**	**6,990.44**	**4,542,394.10**	**0.00**
MERCURY						
DENTSPLY LAKE VIEW	0.31	0.00	0.00	0.31	1,086.00	0.00
EDGE MOOR/HAY ROAD ENERGY CENTERS	16.80	0.00	0.00	16.80	0.10	0.00
MERCURY Total	**17.11**	**0.00**	**0.00**	**17.11**	**1,086.10**	**0.00**

Source: DNREC TRI 2013 Database, October 2014.
All Amounts are in Pounds.

APPENDIX I

2013 PBT RELEASE AND TRANSFER DETAIL

PBT CHEMICAL / FACILITY	ON-SITE RELEASES AIR	WATER	LAND	TOTAL	TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
MERCURY COMPOUNDS						
DELAWARE CITY REFINERY	74.60	2.00	0.00	76.60	2.40	0.00
DUPONT EDGE MOOR	1.04	0.01	0.00	1.05	0.84	0.00
EVRAZ CLAYMONT STEEL	93.25	0.00	0.00	93.25	2.20	0.00
INDIAN RIVER GENERATING STATION	3.79	0.00	113.20	116.99	0.01	0.00
INTERVET	0.00	0.00	0.00	0.00	4.59	0.00
MERCURY COMPOUNDS Total	**172.68**	**2.01**	**113.20**	**287.89**	**10.04**	**0.00**
OCTACHLOROSTYRENE						
DUPONT EDGE MOOR	0.00	0.35	0.00	0.35	4.25	0.00
OCTACHLOROSTYRENE Total	**0.00**	**0.35**	**0.00**	**0.35**	**4.25**	**0.00**
PENTACHLOROBENZENE						
DUPONT EDGE MOOR	0.09	0.09	0.00	0.18	8.04	0.00
PENTACHLOROBENZENE Total	**0.09**	**0.09**	**0.00**	**0.18**	**8.04**	**0.00**
POLYCHLORINATED BIPHENYLS						
DUPONT EDGE MOOR	0.00	0.00	0.00	0.00	4.31	0.00
POLYCHLORINATED BIPHENYLS Total	**0.00**	**0.00**	**0.00**	**0.00**	**4.31**	**0.00**
POLYCYCLIC AROMATIC COMPOUNDS						
DELAWARE CITY REFINERY	224.00	4.00	0.00	228.00	0.00	405.00
DUPONT EDGE MOOR	69.04	0.00	615.67	684.71	0.00	0.00
EDGE MOOR/HAY ROAD ENERGY CENTERS	0.20	0.05	0.00	0.25	0.00	0.00
HONEYWELL	445.00	0.00	0.00	445.00	0.00	0.00
IKO	0.00	0.00	0.00	0.00	82.60	551.00
PERDUE GEORGETOWN	0.00	0.00	0.00	0.00	0.00	0.00
POLYCYCLIC AROMATIC COMPOUNDS Total	**738.24**	**4.05**	**615.67**	**1,357.96**	**82.60**	**956.00**
STATE PBT TOTALS	**1,498.87**	**174.56**	**7,073.38**	**8,746.81**	**4,548,658.98**	**3,117.00**

Source: DNREC TRI 2013 Database, October 2014.
All Amounts are in Pounds.

APPENDIX J

2013 CARCINOGEN RELEASE AND TRANSFER DETAIL

CARCINOGEN / FACILITY	TOTAL ON-SITE RELEASES AIR	WATER	LAND	TOTAL	TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
2,4-DIMETHYLPHENOL						
DELAWARE CITY REFINERY	0.00	179.00	0.00	179.00	0.00	251,805.00
2,4-DIMETHYLPHENOL Total	**0.00**	**179.00**	**0.00**	**179.00**	**0.00**	**251,805.00**
4,4'-METHYLENEBIS(2-CHLOROANILINE)						
ROHM & HAAS B5, B6	0.04	0.00	0.00	0.04	1,507.00	0.00
ROHM & HAAS B7, B15	0.00	0.00	0.00	0.00	0.00	0.00
4,4'-METHYLENEBIS(2-CHLOROANILINE) Total	**0.04**	**0.00**	**0.00**	**0.04**	**1,507.00**	**0.00**
ARSENIC COMPOUNDS						
DUPONT EDGE MOOR	0.07	131.15	0.00	131.22	1,024.86	0.00
ARSENIC COMPOUNDS Total	**0.07**	**131.15**	**0.00**	**131.22**	**1,024.86**	**0.00**
ASBESTOS (FRIABLE)						
DELAWARE CITY REFINERY	0.00	0.00	0.00	0.00	125,560.00	0.00
ASBESTOS (FRIABLE) Total	**0.00**	**0.00**	**0.00**	**0.00**	**125,560.00**	**0.00**
BENZENE						
DELAWARE CITY REFINERY	9,102.00	11.00	0.00	9,113.00	8.00	432,029.00
BENZENE Total	**9,102.00**	**11.00**	**0.00**	**9,113.00**	**8.00**	**432,029.00**
CHROMIUM COMPOUNDS						
BALTIMORE AIRCOIL	0.00	0.00	0.00	0.00	211,618.00	0.00
DUPONT EDGE MOOR	0.45	18.08	0.00	18.53	179,148.04	0.00
EVRAZ CLAYMONT STEEL	76.00	3.00	147.00	226.00	20,170.00	0.00
ORIENT CORP	0.00	0.00	0.00	0.00	0.00	0.00
CHROMIUM COMPOUNDS Total	**76.45**	**21.08**	**147.00**	**244.53**	**410,936.04**	**0.00**
COBALT COMPOUNDS						
DUPONT EDGE MOOR	0.04	3.88	0.00	3.92	3,098.59	0.00
COBALT COMPOUNDS Total	**0.04**	**3.88**	**0.00**	**3.92**	**3,098.59**	**0.00**
DICHLOROMETHANE						
NORAMCO	1,874.00	0.00	0.00	1,874.00	58,083.00	58,083.00
DICHLOROMETHANE Total	**1,874.00**	**0.00**	**0.00**	**1,874.00**	**58,083.00**	**58,083.00**
ETHYLBENZENE						
ARLON	590.00	0.00	0.00	590.00	750.00	27,000.00
DELAWARE CITY REFINERY	2,082.00	5.00	0.00	2,087.00	0.00	51,655.00
DOVER AFB	59.00	0.00	0.00	59.00	0.00	0.00
ETHYLBENZENE Total	**2,731.00**	**5.00**	**0.00**	**2,736.00**	**750.00**	**78,655.00**
ETHYLENE OXIDE						
CRODA	2,432.10	0.00	0.00	2,432.10	0.00	0.00
ETHYLENE OXIDE Total	**2,432.10**	**0.00**	**0.00**	**2,432.10**	**0.00**	**0.00**
HEXACHLOROBENZENE						
DUPONT EDGE MOOR	0.08	0.55	0.00	0.63	196.78	0.00
HEXACHLOROBENZENE Total	**0.08**	**0.55**	**0.00**	**0.63**	**196.78**	**0.00**
LEAD						
HERITAGE CONCRETE BEAR	0.00	0.00	17.61	17.61	0.00	0.00
HERITAGE CONCRETE CHESWOLD	0.00	0.00	13.75	13.75	0.00	0.00
HERITAGE CONCRETE FRANKFORD	0.00	0.00	5.27	5.27	0.00	0.00
HERITAGE CONCRETE WILMINGTON	0.01	0.00	38.18	38.19	0.00	0.00
MOTECH AMERICAS	0.00	0.00	0.00	0.00	211.90	0.00
V&S DELAWARE GALVANIZING	5.60	6.80	0.00	12.40	4,659.70	1,669.00
LEAD Total	**5.61**	**6.80**	**74.81**	**87.22**	**4,871.60**	**1,669.00**

Source: DNREC 2013 TRI Database, October 2014
All amounts are in pounds

APPENDIX J

2013 CARCINOGEN RELEASE AND TRANSFER DETAIL

CARCINOGEN / FACILITY	TOTAL ON-SITE RELEASES AIR	WATER	LAND	TOTAL	TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
LEAD COMPOUNDS						
DELAWARE CITY REFINERY	98.50	3.00	0.00	101.50	58.60	0.00
DUPONT EDGE MOOR	0.00	84.40	0.00	84.40	8,593.84	0.00
EVRAZ CLAYMONT STEEL	250.00	53.99	53.00	356.99	112,603.00	0.00
INDIAN RIVER GENERATING STATION	74.32	0.01	6,216.70	6,291.03	0.01	0.00
JOHNSON CONTROLS BATTERY PLANT	141.20	14.30	0.00	155.50	3,127,571.30	0.00
JOHNSON CONTROLS DIST. CENTER	0.00	0.00	0.00	0.00	1,293,566.35	0.00
PRINCE MINERALS	0.02	0.00	0.00	0.02	0.00	0.00
VP RACING FUELS	1.00	0.00	0.00	1.00	1.00	0.00
LEAD COMPOUNDS Total	**565.04**	**155.70**	**6,269.70**	**6,990.44**	**4,542,394.10**	**0.00**
NAPHTHALENE						
CARL KING	0.00	0.00	0.00	0.00	0.00	0.00
CRODA	2.00	0.00	0.00	2.00	420.00	0.00
DELAWARE CITY REFINERY	2,146.00	147.00	0.00	2,293.00	0.00	10,493.00
DOVER AFB	63.00	0.00	0.00	63.00	0.00	0.00
INDIAN RIVER GENERATING STATION	0.00	0.00	0.00	0.00	0.00	0.00
NAPHTHALENE Total	**2,211.00**	**147.00**	**0.00**	**2,358.00**	**420.00**	**10,493.00**
NICKEL						
DELAWARE CITY REFINERY	1,342.00	1,709.00	0.00	3,051.00	36,762.00	0.00
DUHADAWAY TOOL AND DIE SHOP	0.00	0.00	0.00	0.00	7,349.00	0.00
HANDY TUBE	0.00	0.00	0.00	0.00	44,727.00	0.00
METAL MASTERS	0.50	0.00	0.00	0.50	55,802.00	0.00
NICKEL Total	**1,342.50**	**1,709.00**	**0.00**	**3,051.50**	**144,640.00**	**0.00**
NICKEL COMPOUNDS						
BALTIMORE AIRCOIL	5.00	0.00	0.00	5.00	241,000.00	0.00
DUPONT EDGE MOOR	0.89	245.66	0.00	246.55	9,155.96	0.00
EVRAZ CLAYMONT STEEL	20.00	20.00	264.00	304.00	3,448.00	0.00
PRINCE MINERALS	0.00	0.00	0.00	0.00	0.00	0.00
NICKEL COMPOUNDS Total	**25.89**	**265.66**	**264.00**	**555.55**	**253,603.96**	**0.00**
NITROBENZENE						
ORIENT CORP	3.00	0.00	0.00	3.00	1.00	0.00
NITROBENZENE Total	**3.00**	**0.00**	**0.00**	**3.00**	**1.00**	**0.00**
P-CHLOROANILINE						
BASF NEWPORT	10.00	0.00	0.00	10.00	5,160.00	390.00
P-CHLOROANILINE Total	**10.00**	**0.00**	**0.00**	**10.00**	**5,160.00**	**390.00**
POLYCHLORINATED BIPHENYLS						
DUPONT EDGE MOOR	0.00	0.00	0.00	0.00	4.31	0.00
POLYCHLORINATED BIPHENYLS Total	**0.00**	**0.00**	**0.00**	**0.00**	**4.31**	**0.00**
POLYCYCLIC AROMATIC COMPOUNDS						
DELAWARE CITY REFINERY	224.00	4.00	0.00	228.00	0.00	405.00
DUPONT EDGE MOOR	69.04	0.00	615.67	684.71	0.00	0.00
EDGE MOOR/HAY ROAD ENERGY CENTERS	0.20	0.05	0.00	0.25	0.00	0.00
HONEYWELL	445.00	0.00	0.00	445.00	0.00	0.00
IKO	0.00	0.00	0.00	0.00	82.60	551.00
PERDUE GEORGETOWN	0.00	0.00	0.00	0.00	0.00	0.00
POLYCYCLIC AROMATIC COMPOUNDS Total	**738.24**	**4.05**	**615.67**	**1,357.96**	**82.60**	**956.00**
PROPYLENE OXIDE						
CRODA	578.20	0.00	0.00	578.20	0.00	0.00
PROPYLENE OXIDE Total	**578.20**	**0.00**	**0.00**	**578.20**	**0.00**	**0.00**

Source: DNREC 2013 TRI Database, October 2014
All amounts are in pounds

APPENDIX J

2013 CARCINOGEN RELEASE AND TRANSFER DETAIL

CARCINOGEN / FACILITY	TOTAL ON-SITE RELEASES AIR	WATER	LAND	TOTAL	TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
STYRENE						
BASF SEAFORD	210.00	0.00	0.00	210.00	78.00	523.00
DELAWARE CITY REFINERY	13.00	5.00	0.00	18.00	0.00	1,366.00
JUSTIN TANKS	9,688.00	0.00	331.00	10,019.00	331.00	19,880.00
STYRENE Total	**9,911.00**	**5.00**	**331.00**	**10,247.00**	**409.00**	**21,769.00**
TOLUENE DIISOCYANATE (MIXED ISOMERS)						
AEARO TECHNOLOGIES	4.95	0.00	0.00	4.95	14,050.00	0.00
MACDERMID	0.00	0.00	0.00	0.00	0.00	0.00
ROHM & HAAS B5, B6	1.80	0.00	0.00	1.80	825.00	4,599.00
TOLUENE DIISOCYANATE (MIXED ISOMERS) Total	**6.75**	**0.00**	**0.00**	**6.75**	**14,875.00**	**4,599.00**
TRICHLOROETHYLENE						
HANDY TUBE	6,046.00	0.00	0.00	6,046.00	12,766.00	0.00
TRICHLOROETHYLENE Total	**6,046.00**	**0.00**	**0.00**	**6,046.00**	**12,766.00**	**0.00**
VINYL ACETATE						
FORMOSA PLASTICS	40,740.00	0.00	0.00	40,740.00	0.00	0.00
VINYL ACETATE Total	**40,740.00**	**0.00**	**0.00**	**40,740.00**	**0.00**	**0.00**
VINYL CHLORIDE						
FORMOSA PLASTICS	47,277.00	0.00	0.00	47,277.00	146.85	263,480.00
VINYL CHLORIDE Total	**47,277.00**	**0.00**	**0.00**	**47,277.00**	**146.85**	**263,480.00**
1,3-BUTADIENE						
DELAWARE CITY REFINERY	396.00	0.00	0.00	396.00	0.00	0.00
1,3-BUTADIENE Total	**396.00**	**0.00**	**0.00**	**396.00**	**0.00**	**0.00**
TETRACHLOROETHYLENE						
DELAWARE CITY REFINERY	6.00	0.00	0.00	6.00	0.00	0.00
TETRACHLOROETHYLENE Total	**6.00**	**0.00**	**0.00**	**6.00**	**0.00**	**0.00**
CREOSOTE						
DELAWARE CITY REFINERY	467.00	0.00	2,646.00	3,113.00	17,061.00	0.00
CREOSOTE Total	**467.00**	**0.00**	**2,646.00**	**3,113.00**	**17,061.00**	**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**
STATE TOTAL	**126,545**	**2,645**	**10,348**	**139,538**	**5,597,600**	**1,123,928**

Source: DNREC 2013 TRI Database, October 2014
All amounts are in pounds

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 (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.

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 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: Input + Generation = Output + 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 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 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:

- 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 (SO_2), and mercury emissions limits to achieve reductions of those pollutants from Delaware's large electric generation units. The reduction in NO_X, SO_2, 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 (NOx) 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 NOx and ammonia react to form nitrogen and water vapor. Also see **SNCR** below.

Selective Non-Catalytic Reduction (SNCR) - Nitrogen oxides (NOx) 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 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 .

Sample Form R
For Reporting year 2013

eting form; type or use fill-and-print form) Form Approved OMB Number: 2025-0009
Approval Expires: 10/31/2014t **Page 1 of 6**

EPA
United States
Environmental Protection Agency

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

Toxic Chemical, Category, or Generic Name

WHERE TO SEND COMPLETED FORMS: 1. TRI Data Processing Center, P. O. Box 10163, Fairfax, VA 22038 2. APPROPRIATE STATE OR TRIBAL OFFICE (See instructions in Appendix E)

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank. **Revision (Enter up to two code(s))** **Withdrawal (E nter up to two code(s))**

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? ☐ Yes (Answer question 2.2; attach substantiation forms) ☐ No (Do not answer 2.2; go to Section 3)

2.2 Is this copy ☐ Sanitized ☐ 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

4.1	Facility or E stablishment 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. ☐ An entire facility b. ☐ Part of a facility c. ☐ A federal facility d. ☐ GOCO	
4.3	Technical Contact Name		Telephone Number (include area code)
	Email Address		
4.4	Public Contact Name		Telephone Number (include area code)
	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) ☐
5.2	Parent Company's Dun & Bradstreet Number	NA ☐	

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Sample Form R
For Reporting year 2013

eting form; type or use fill-and-print form) Form Approved OMB Number: 2025-0009
Approval Expires: 10/31/2014t **Page 2 of 6**

FORM R

Part II. CHEMICAL-SPECIFIC INFORMATION

TRI Facility ID Number
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. ☐ Produce b. ☐ Import If Produce or Import c. ☐ For on-site use/processing d. ☐ For sale/distribution e. ☐ As a byproduct f. ☐ As an impurity	a. ☐ As a reactant b. ☐ As a formulation component c. ☐ As an article component d. ☐ Repackaging e. ☐ As an impurity	a. ☐ As a chemical processing aid b. ☐ As a manufacturing aid c. ☐ Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	☐ (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 ☐			
5.2	Stack or point air emissions	NA ☐			
5.3	Discharges to receiving streams or water bodies (Enter one name per box)	NA ☐			
	Stream or Water Body Name				
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 ☐
and indicate the Part II, Section 5.3 page number in this box. ☐ (Example: 1, 2, 3, etc.)

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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.

Sample Form R
For Reporting year 2013

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FORM R

Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number
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)	B. Basis of Estimate (Enter code)
5.4.1	Underground Injection on-site to Class I Wells	☐		
5.4.2	Underground Injection on-site to Class II-V Wells	☐		
5.5	Disposal to land on-site			
5.5.1A	RCRA Subtitle C landfills	☐		
5.5.1B	Other landfills	☐		
5.5.2	Land treatment/application farming	☐		
5.5.3A	RCRA Subtitle C surface impoundments	☐		
5.5.3B	Other surface impoundments	☐		
5.5.4	Other disposal	☐		

SECTION 6. TRANSFER(S) OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs) NA ☐

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 ☐

and indicate the Part II, Section 6.1 page number in this box. ☐ (Example: 1, 2, 3, etc.)

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS NA ☐

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? ☐ Yes ☐ 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.

Sample Form R
For Reporting year 2013

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FORM R

Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number

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? Yes ☐ 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

☐ Not Applicable (NA) - Check here if no on-site waste treatment method is applied to any waste stream containing the toxic chemical or chemical

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	3	4	5	7A.1c
	6	7	8				
7A.2a	7A.2b	1	2	3	4	5	7A.2c
	6	7	8				
7A.3a	7A.3b	1	2	3	4	5	7A.3c
	6	7	8				
7A.4a	7A.4b	1	2	3	4	5	7A.4c
	6	7	8				
7A.5a	7A.5b	1	2	3	4	5	7A.5c
	6	7	8				

If additional pages of Part II, Section 6.2/7.A are attached, indicate the total number of pages in this box. ☐
and indicate the Part II, Section 6.2/7.A page number in this box. ☐ (Example: 1, 2, 3, etc.)

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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.

Sample Form R
For Reporting year 2013

ng form; type or use fill-and-print form) Form Approved OMB Number: 2025-0009
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FORM R

Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI Fac ility ID Number

Toxic Chemical, Category, or Generic Name

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

☐ 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 RECYLING PROCESSES

☐ 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. DISPOSAL OR OTHER RELEASES, SOURCE REDUCTION, AND RECYCLING ACTIVITIES

		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					
8.1a	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	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year*)				
8.9	Production ratio or activity index				
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 ☐				

	Source Reduction Activities (Enter code(s))	Methods to Identify Activity (Enter code(s))		
8.10.1		a.	b.	c.
8.10.2		a.	b.	c.
8.10.3		a.	b.	c.
8.10.4		a.	b.	c.

EPA form 9350-1 (Rev. 10/2012) – Previous editions are obsolete.

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

Sample Form R
For Reporting year 2013

ing form; type or use fill-and-print form) Form Approved OMB Number: 2025-0009
Approval Expires: 10/31/2014t

FORM R

Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number
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. 10/2012) – Previous editions are obsolete.

Sample Form A Page 1
For Reporting year 2013

ng form; type or use fill-and-print form) Form Approved OMB Number: 2025-0009
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EPA United States Environmental Protection Agency

TOXICS RELEASE INVENTORY
FORM A

WHERE TO SEND COMPLETED FORMS: 1. TRI Data Processing Center P. O. Box 10163 Fairfax, VA 22038	2. APPROPRIATE STATE OR TRIBAL OFFICE (See instructions in Appendix E)	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))	Withdrawal (Enter up to two code(s))

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? ☐ Yes (Answer question 2.2; attach substantiation forms) ☐ No (Do not answer 2.2; go to Section 3)	2.2	Is this copy ☐ Sanitized ☐ 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	City/State/ZIP Code	Country (Non-US)
4.2	This report contains information for: (Important: Check c or d if applicable)	c. ☐ A Federal facility	d. ☐ GOCO

4.3	Technical Contact Name		Telephone Number (include area code)
	Email Address		
4.4	Public Contact Name		Telephone Number (include area code)
	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) ☐
5.2	Parent Company's Dun & Bradstreet Number	NA ☐	

EPA Form 9350-2 (Rev. 10/2012) - Previous editions are obsolete.

APPENDIX N

TRI REPORTING FORMS – FORM A

TOXICS RELEASE INVENTORY

Sample Form A Page 2
For Reporting year 2013

(IMPORTANT: Read instructions before completing form; type or use fill-and-print form) Form Ap Approva ___ of ___

EPA FORM A
PART II. CHEMICAL IDENTIFICATION
Do not use this form for reporting PBT chemicals, including Dioxin and Dioxin-like Compounds*

TRI Facility ID Number

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 β13 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)

EPA Form 9350-2 (Rev. 10/2012) - Previous editions are obsolete.

(Make additional copies of this page, if needed)

(IMPORTANT: Read instructions before completing form; type or use fill-and-print form)

Form Approved OMB Number: 2025-0009
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EPA
United States Environmental Protection Agency

FORM R Schedule 1

PART II. CHEMICAL-SPECIFIC INFORMATION

TRI Facility ID Number

(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 Fugitive or non-point air emissions	NA ☐	5.2 Stack or point air emissions	NA ☐	5.3 Discharges to receiving streams or water bodies (Enter data for one stream or water body per box)	NA ☐
					5.3.1	5.3.2	5.3.3
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.)**

EPA Form 9350-3

(IMPORTANT: Read instructions before completing form; type or use fill-and-print form)

Form Approved OMB Number: 2025-0009
Approval Expires: 10/31/2014t

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

		Underground Injection		5.5 Disposal to land on-site					
		5.4.1 NA ☐	5.4.2 NA ☐	5.5.1.A NA ☐	5.5.1.B NA ☐	5.5.2 NA ☐	5.5.3A NA ☐	5.5.3B NA ☐	5.5.4 NA ☐
		Underground Injection on-site to Class I Wells	Underground Injection on-site to Class II-V Wells	RCRA Subtitle C landfills	Other landfills	Land treatment/ application farming	RCRA Subtitle C surface impoundments	Other surface impoundments	Other disposal
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								

EPA Form 9350-3

(IMPORTANT: Read instructions before completing form; type or use fill-and-print form)

Form Approved OMB Number: 2025-0009
Approval Expires: 10/31/2014t

TRI Facility ID Number

FORM R Schedule 1

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 ☐

6.1.__	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 ☐

6.2.__	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			
2.	1		2		3		4		5		6		7		8			
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			
4.	1		2		3		4		5		6		7		8			
9	10		11		12		13		14		15		16		17			

6.2.__	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			
2.	1		2		3		4		5		6		7		8			
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			
4.	1		2		3		4		5		6		7		8			
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.)

EPA Form 9350-3

(IMPORTANT: Read instructions before completing form; type or use fill-and-print form)

Form Approved OMB Number: 2025-0009
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TRI Facility ID Number

FORM R Schedule 1

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 ☐

6.1.__	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 ☐

6.2.__	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			
2.	1		2		3		4		5		6		7		8			
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			
4.	1		2		3		4		5		6		7		8			
9	10		11		12		13		14		15		16		17			

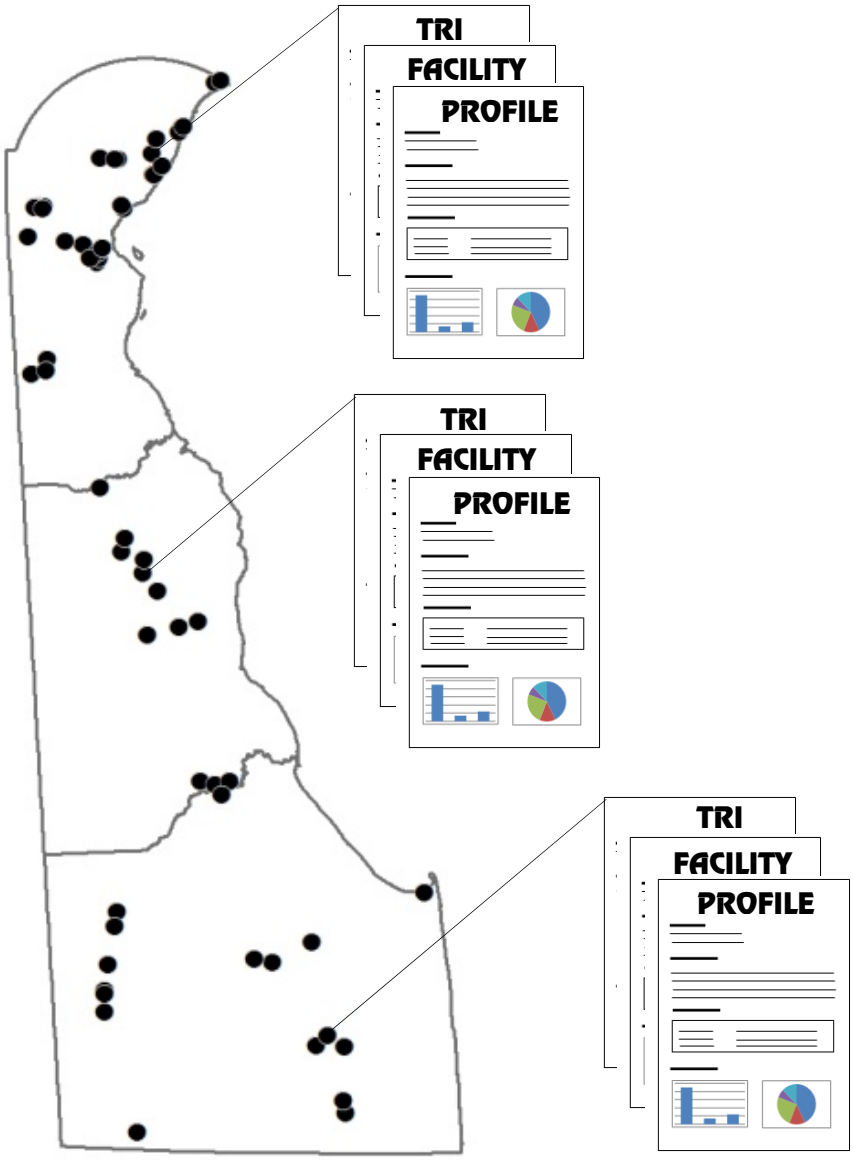
6.2.__	D. Mass (grams) of each compound in the category (1-17)																	
1.	1		2		3		4		5		6		7		8			
9	10		11		12		13		14		15		16		17			
2.	1		2		3		4		5		6		7		8			
9	10		11		12		13		14		15		16		17			
3.	1		2		3		4		5		6		7		8			
9	10		11		12		13		14		15		16		17			
4.	1		2		3		4		5		6		7		8			
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.)

TOXICS RELEASE INVENTORY

2013 DELAWARE TRI FACILITY PROFILES



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

November 2014

Jack Markell
Governor

David Small
Secretary, DNREC

Ali Mirzakhalili
Director, Division of Air Quality

Virgil Holmes
Director, Division of Water

Marjorie A. Crofts
Director, Division of Waste and Hazardous Substances

Jamie Bethard
Program Manager, Emergency Prevention and Response Section

This report was prepared with the assistance of numerous individuals in the Department of Natural Resources and Environmental Control. Any questions or comments regarding this report should be directed to the principal author:

Brian Lutes
TRI Coordinator
EPCRA Reporting Program, DNREC
655 South Bay Rd., Suite 5N
Dover, DE 19901
Tel. (302) 739-9405, Fax (302) 739-3106
e-mail: brian.lutes@state.de.us

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 map of Delaware showing the location of all TRI facilities reporting in the state for 2013, with the facilities profiles which are featured in this report.*

TRI FACILITY PROFILES

TOXICS RELEASE INVENTORY

The Facility Profiles provide TRI information specific to each reporting facility in Delaware for 2013. The facility profiles can be accessed through the links that are provided on the ***TRI Facility Maps*** on pages 3 and 4 of this document. The following topics/categories are covered in the facility profiles:

Location/Contact:

The address, phone number, and public contact are provided to encourage the public to contact the facility if they have any additional questions in regards to the facility operations and their TRI numbers. A map showing the approximate location of the site is also included, which links back to the overall TRI Facility Map.

Facility Overview:

This section includes a description of the services and products the facility provides, as well as a description of how the predominant TRI chemicals reported are being used. Activities occurring at the facility that impact their TRI numbers are also discussed.

2013 TRI Data:

A table is provided listing the TRI information for each chemical reported at the facility. Chemical information provided includes pounds released on-site to air, water, and land, total pounds transferred off-site, and total pounds of the managed on-site for 2013. It is also noted if the chemical is a known ***Persistent Bioaccumulative Toxic (PBT) Chemical*** or if is listed as a ***carcinogen***. PBTs are discussed in more detail on page 19 and ***Appendix I*** in the **2013 Delaware TRI Report** and carcinogens are discussed in detail on page 25 and ***Appendix J***.

Graphical Information:

Six graphs are provided in this section for visual comparisons, if applicable for the facility.

- **On-site Releases by Media:** Bar chart comparing on-site releases for 2013 among air, water, and land categories.
- **On-site Releases by Chemical:** Bar chart comparing total on-site releases for 2013 for the primary chemicals reported by the facility.
- **Total On-site Releases per Year:** Provides a trend graph over the last ten years for total on-site releases to air, water, land reported by the facility.
- **2013 Distribution of Total TRI Waste:** Pie chart showing the percent distribution of how the total TRI waste reported is managed (On-site Releases, Off-site Transfers, and On-site Management).
- **2013 Distribution of Total Off-site Transfers by Category:** Pie chart showing the percent distribution of the total pounds transferred off-site. Off-site transfers include off-site disposal, energy recovery, recycling, public owned treatment works (POTW), and non POTW treatment.
- **2013 Distribution of Total On-site Waste Management by Category:** Pie chart showing the percent distribution of the total pounds managed on-site. On-site management includes on-site treatment, recycling, and energy recovery.

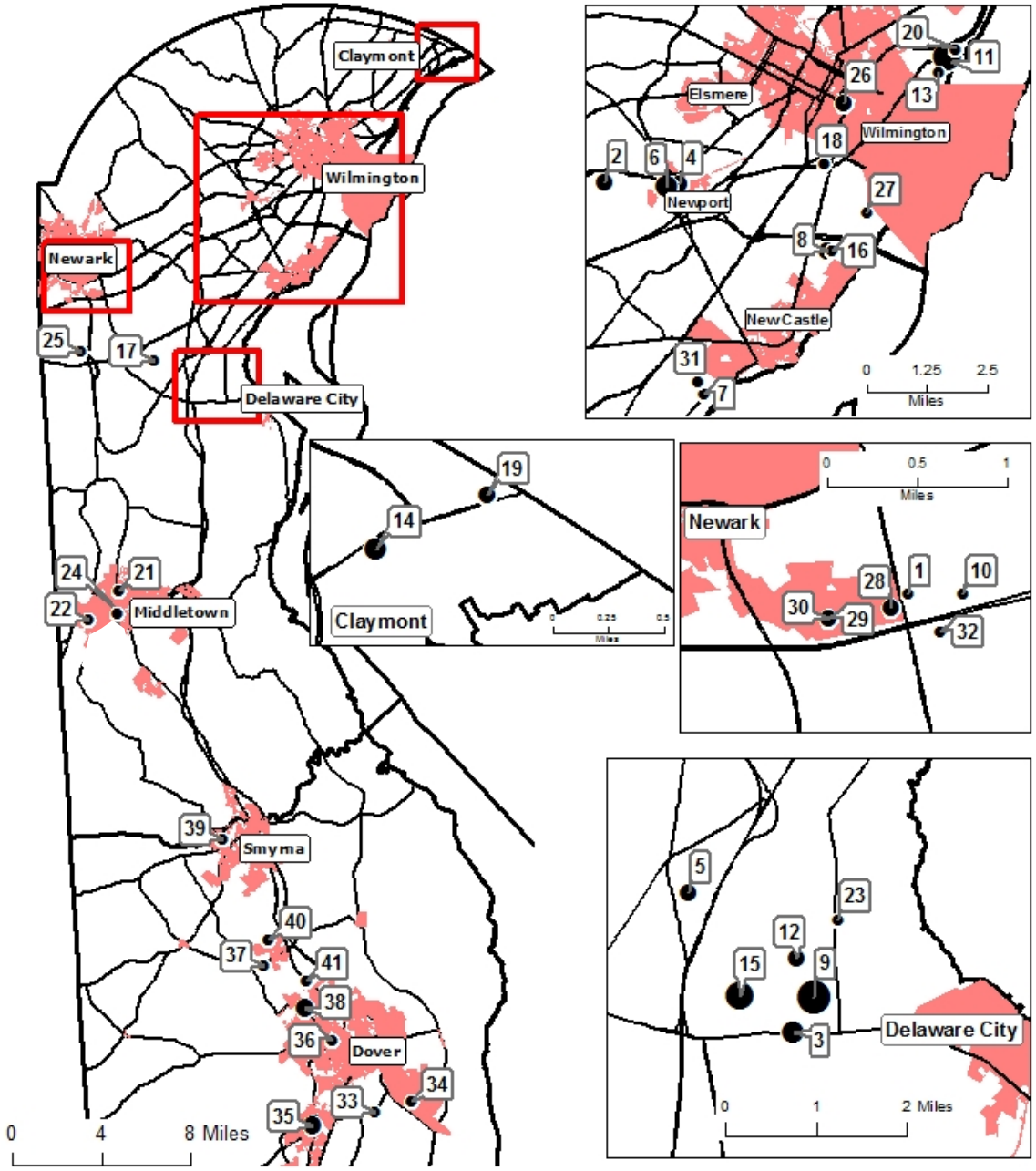
Comparison to Other Delaware TRI Facilities:

This section provides two graphical comparisons for Delaware TRI facilities.

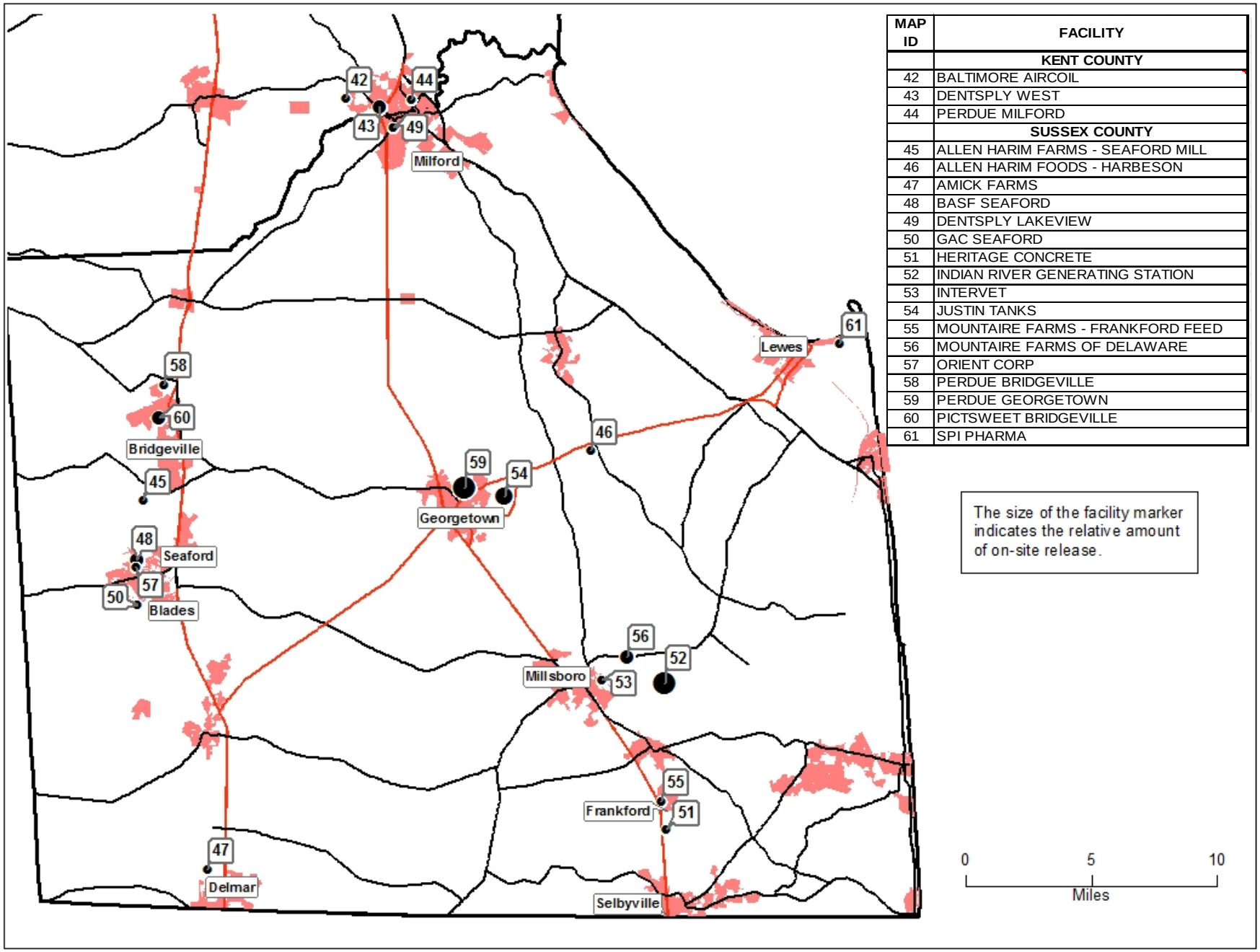
- **2013 On-site Releases: Top 15 Facilities:** Bar chart showing the total on-site releases for the top 15 facilities and a group for all other facilities. The facility is highlighted in red and underlined on the graph. If the facility falls into the bottom third of all facilities for on-site releases in Delaware it is noted. See ***Appendices C, E, F*** in the ***2013 Delaware TRI Report*** for further detail for on-site releases.
- **2013 Total TRI Waste Reported: Top 15 Facilities:** Bar chart showing the total waste reported for the top 15 facilities and a grouping for all other facilities. Total waste reported includes waste released on-site, managed on-site, or transferred off-site. The facility is highlighted in red and underlined on the graph. If a facility falls into the bottom third in total waste reported by facilities in Delaware for 2013, it is noted. See ***Appendices D and G*** in the ***2013 Delaware TRI Report*** for further detail on off-site transfers and on-site management.

Notable National Rankings:

Notable national rankings for the facility are listed based on a search of the preliminary EPA 2013 data set as of September 2014 using EPA's TRI Explorer. For applicable rankings, the North American Classification Industrial Classification System (NAICS) code for the facility is listed.



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



MAP ID	FACILITY
	KENT COUNTY
42	BALTIMORE AIRCOIL
43	DENTSPLY WEST
44	PERDUE MILFORD
	SUSSEX COUNTY
45	ALLEN HARIM FARMS - SEAFORD MILL
46	ALLEN HARIM FOODS - HARBESON
47	AMICK FARMS
48	BASF SEAFORD
49	DENTSPLY LAKEVIEW
50	GAC SEAFORD
51	HERITAGE CONCRETE
52	INDIAN RIVER GENERATING STATION
53	INTERVET
54	JUSTIN TANKS
55	MOUNTAIRE FARMS - FRANKFORD FEED
56	MOUNTAIRE FARMS OF DELAWARE
57	ORIENT CORP
58	PERDUE BRIDGEVILLE
59	PERDUE GEORGETOWN
60	PICTSWEET BRIDGEVILLE
61	SPI PHARMA

TRI FACILITY PROFILES

AEARO TECHNOLOGIES

LOCATION/CONTACT:

Address: 650 Dawson Drive
Newark, DE 19713

Phone: (302) 286-2415

Contact: Tom Flaherty

FACILITY OVERVIEW:

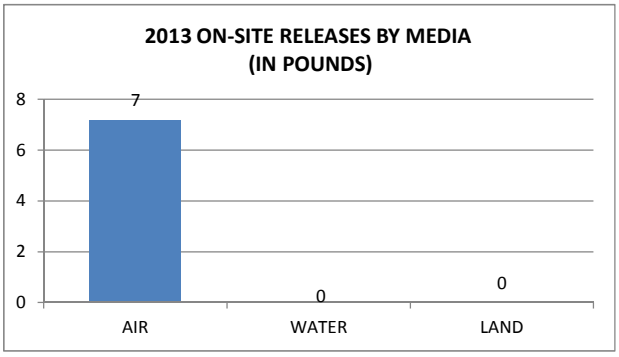
Aearo Technologies manufactures and converts urethane foams and foam composites with a variety of facings for many industries and uses.

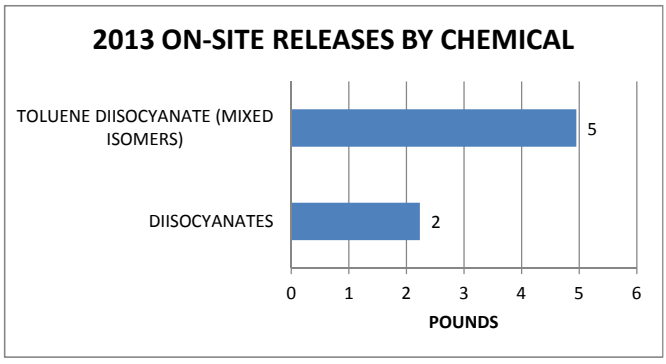
Aearo Technologies has reported since 1987, previously as E.A.R. and Cabot Safety. The facility reported on two chemicals in 2013 (diisocyanates and toluene diisocyanates), with on-site releases only to air. These chemicals are utilized in the process of making of the urethane foam and foam composites. The converting operations do not utilize these chemicals. Virtually all of the waste is shipped off-site, with less than 1% being released on-site to air.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
DIISOCYANATES	2	0	0	2	9,367	0	NO	NO
TOLUENE DIISOCYANATE (MIXED ISOMERS)	5	0	0	5	14,050	0	NO	YES
TOTAL	7	0	0	7	23,417	0		

GRAPHICAL INFORMATION:

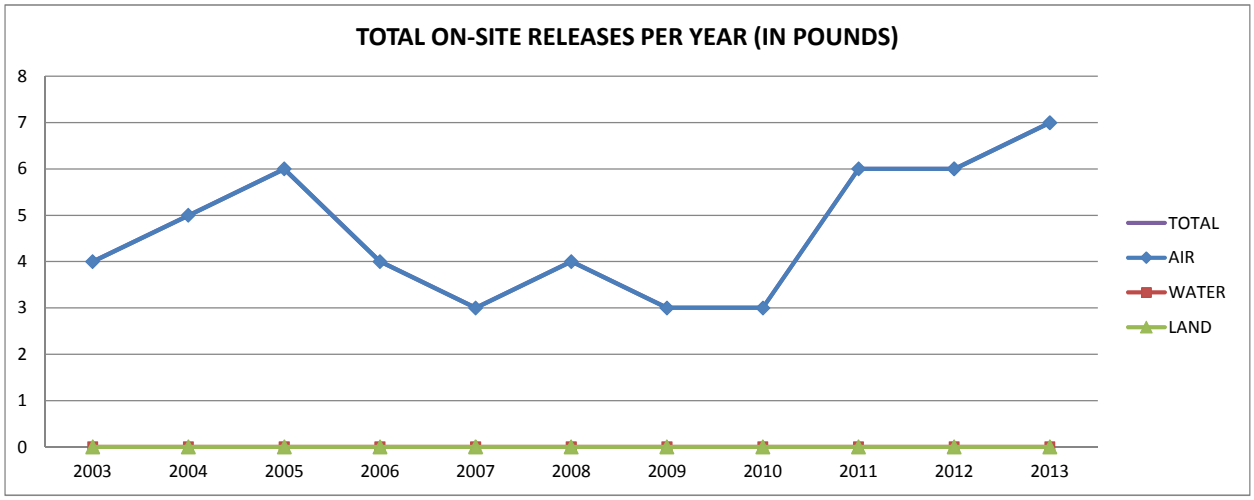


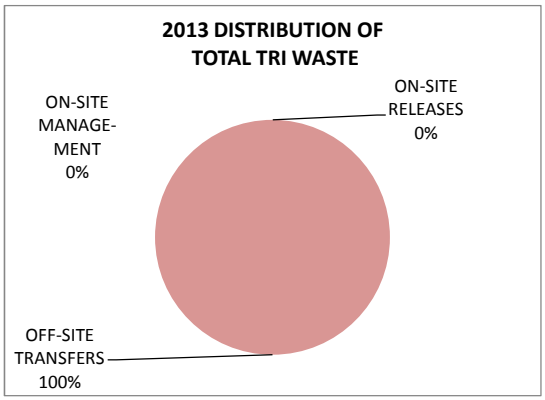


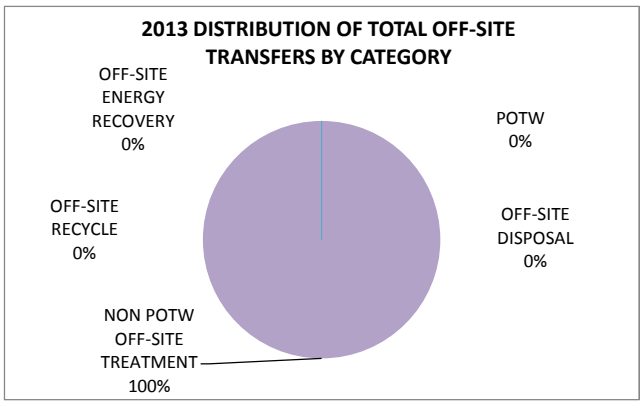
TRI FACILITY PROFILES

AEARO TECHNOLOGIES, CONT.

GRAPHICAL INFORMATION CONT.:







COMPARISON TO OTHER DELAWARE TRI FACILITIES:

Aearo Technologies ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.

Aearo Technologies ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

Aearo Technologies ranks 77th in the nation for off-site transfers of diisocyanates (out of 1,259 facilities).

Aearo Technologies ranks 6th in the nation for off-site transfers of toluene diisocyanate (mixed isomers) (out of 141 facilities).

TRI FACILITY PROFILES

AGILENT TECHNOLOGIES

LOCATION/CONTACT:

Address: 538 First State Blvd.
Newport, DE 19804

Phone: (302) 636-3668

Contact: Renee Lewandowski

FACILITY OVERVIEW:

Agilent Technologies has two main production processes. The primary production process is the manufacturing of various columns (consumables) for liquid chromatography equipment. This process is further broken down into packing production and column production, in which the material within the column is produced and this material is than packed into the column. The second process is identified as Substrate Manufacturing. This operation is comprised of a highly specialized glass cleaning and coating operation that produces glass slides that are shipped to an Agilent facility in Santa Clara, CA where they become microarray scanner slides used for DNA testing. Both processes are complete independent of one another.

Facilities at the Newport site have reported since in 1990, previously as Rockland Technologies and Hewlett-Packard Company. Agilent Technologies has reported for the site since 2001. Agilent Technologies reported on three chemicals in 2013, toluene, methanol and acetonitrile. All three chemicals (solvents) are utilized as chemical processing aids and do not remain in the product. All on-site releases of these chemicals are to the air. The majority of wasted is transferred off-site for treatment or energy recovery. Out of the three chemicals, methanol consists of approximately 95% of all on-site releases, while toluene consists of approximately 78% of all off-site transfers. The increase in releases for 2004 was the result from the consolidation of some manufacturing operations from another Agilent facility to the Newport location. Both on-site releases and off-site transfers have remained relatively consistent since 2005. Fluctuations in on-site releases and off-site transfers are directly related to production.

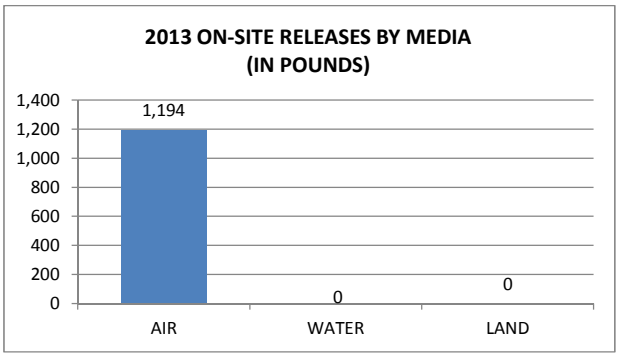
2013 TRI DATA (REPORTED IN POUNDS):

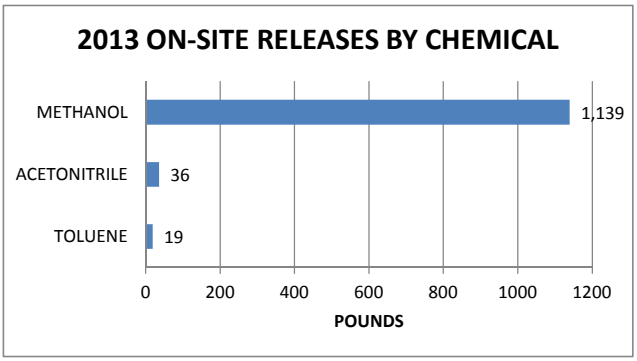
	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
ACETONITRILE	36	0	0	36	15,558	0	NO	NO
METHANOL	1,139	0	0	1,139	37,273	0	NO	NO
TOLUENE	19	0	0	19	188,565	0	NO	NO
TOTAL	1,194	0	0	1,194	241,396	0		

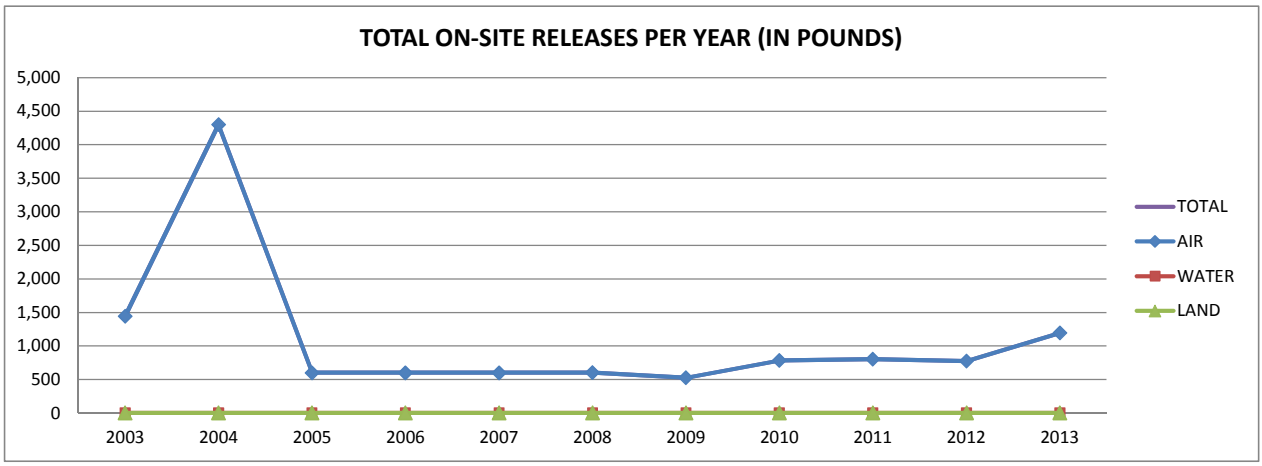
TRI FACILITY PROFILES

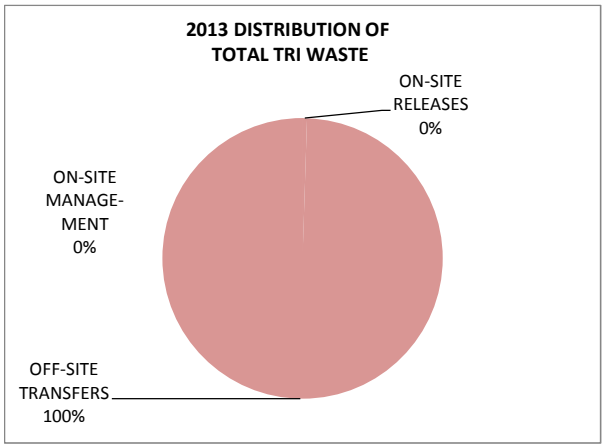
AGILENT TECHNOLOGIES, CONT.

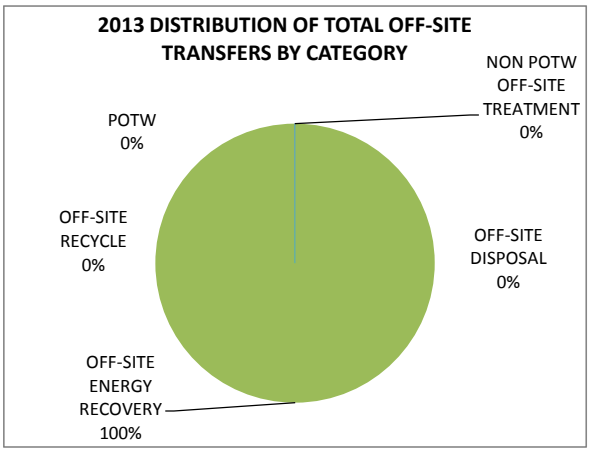
GRAPHICAL INFORMATION:







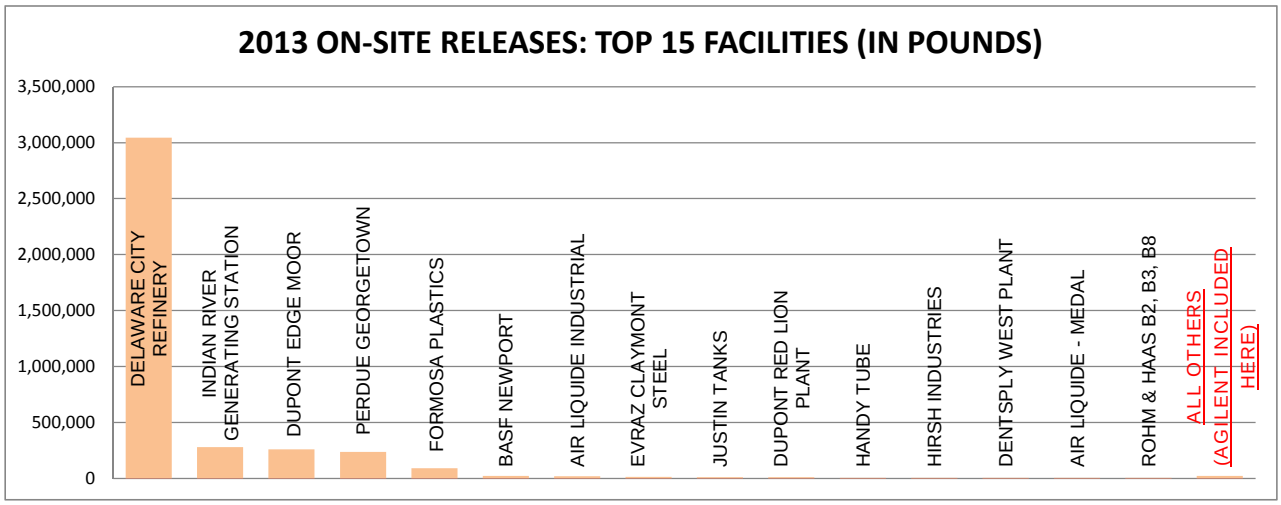


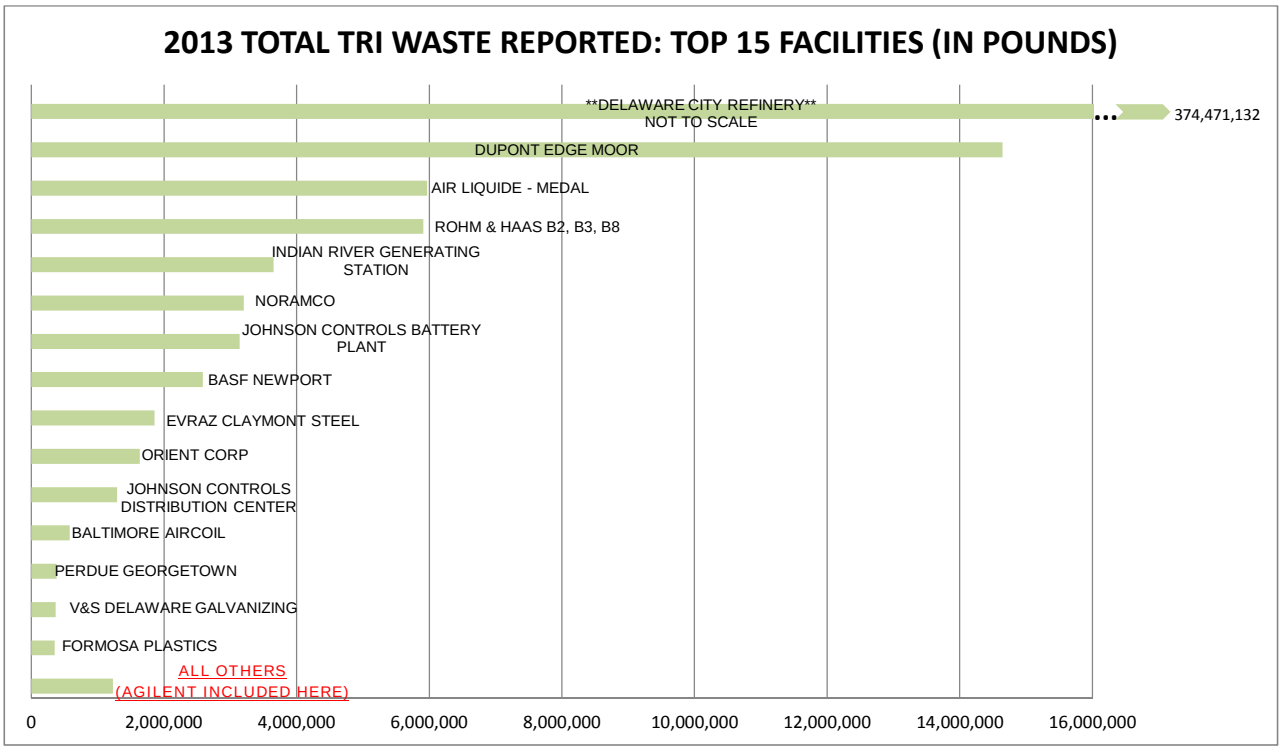


TRI FACILITY PROFILES

AGILENT TECHNOLOGIES, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Agilent Technologies ranks 72th in the nation for off-site transfers of acetonitrile (out of 141 facilities).

Agilent Technologies ranks 98th in the nation for off-site transfers of toluene (out of 2,222 facilities).

TRI FACILITY PROFILES

AIR LIQUIDE INDUSTRIAL

LOCATION/CONTACT:

Address: 4442 Wrangle Hill Road
Delaware City, DE 19706

Phone: (713)-624-8131

Contact: Wendy D'Attilio

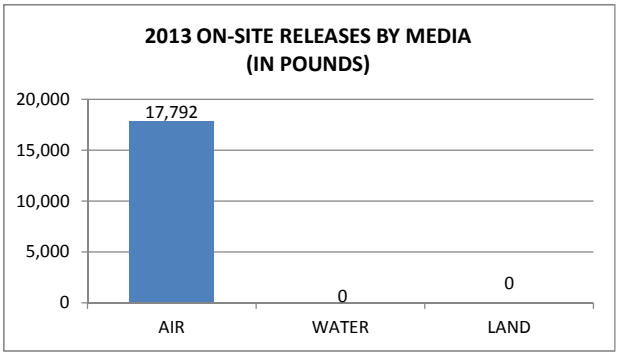
FACILITY OVERVIEW:

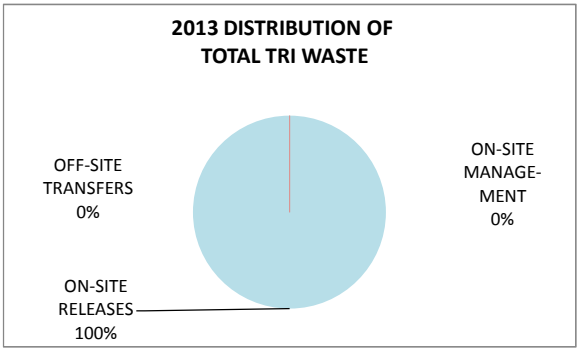
Air Liquide Industrial produces liquified carbon dioxide from a gas stream received from the nearby Delaware City Refinery. The carbon dioxide is used by many industrial and food processing facilities in the region. Air Liquide reported on one chemical, ammonia, for 2013. Ammonia is used as a refrigerant to condense the carbon dioxide. In 2004, 2005, 2010, and 2012 this facility did not meet the minumum reporting threshold for reporting to the TRI program (see *Total On-site Releases Per Year Graph* on the next page).

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
AMMONIA	17,792	0	0	17,792	0	0	NO	NO
TOTAL	17,792	0	0	17,792	0	0		

GRAPHICAL INFORMATION:

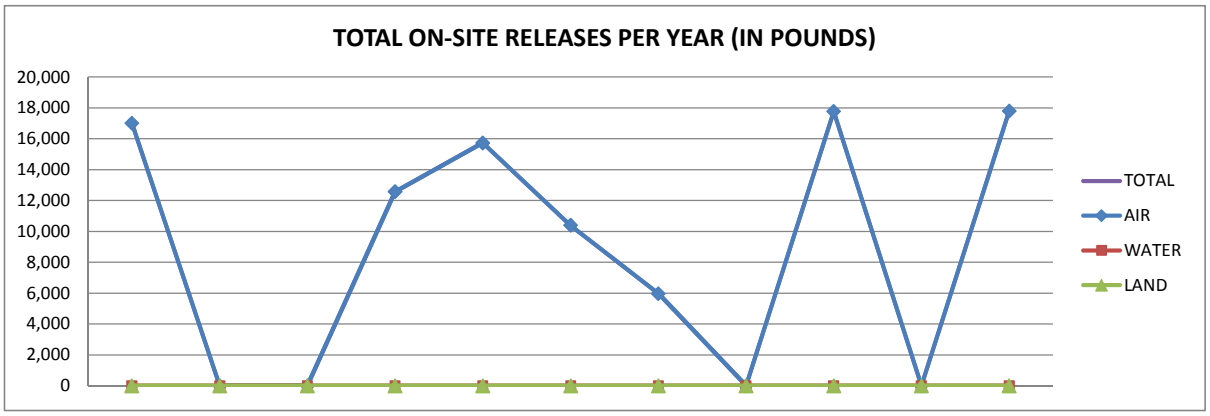




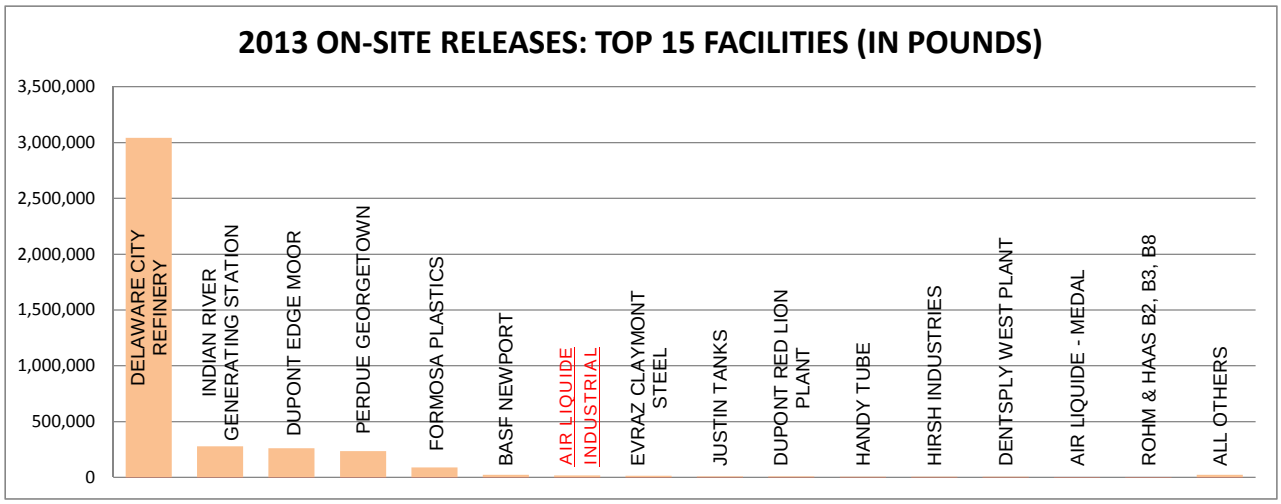
TRI FACILITY PROFILES

AIR LIQUIDE INDUSTRIAL, CONT.

GRAPHICAL INFORMATION CONT.:



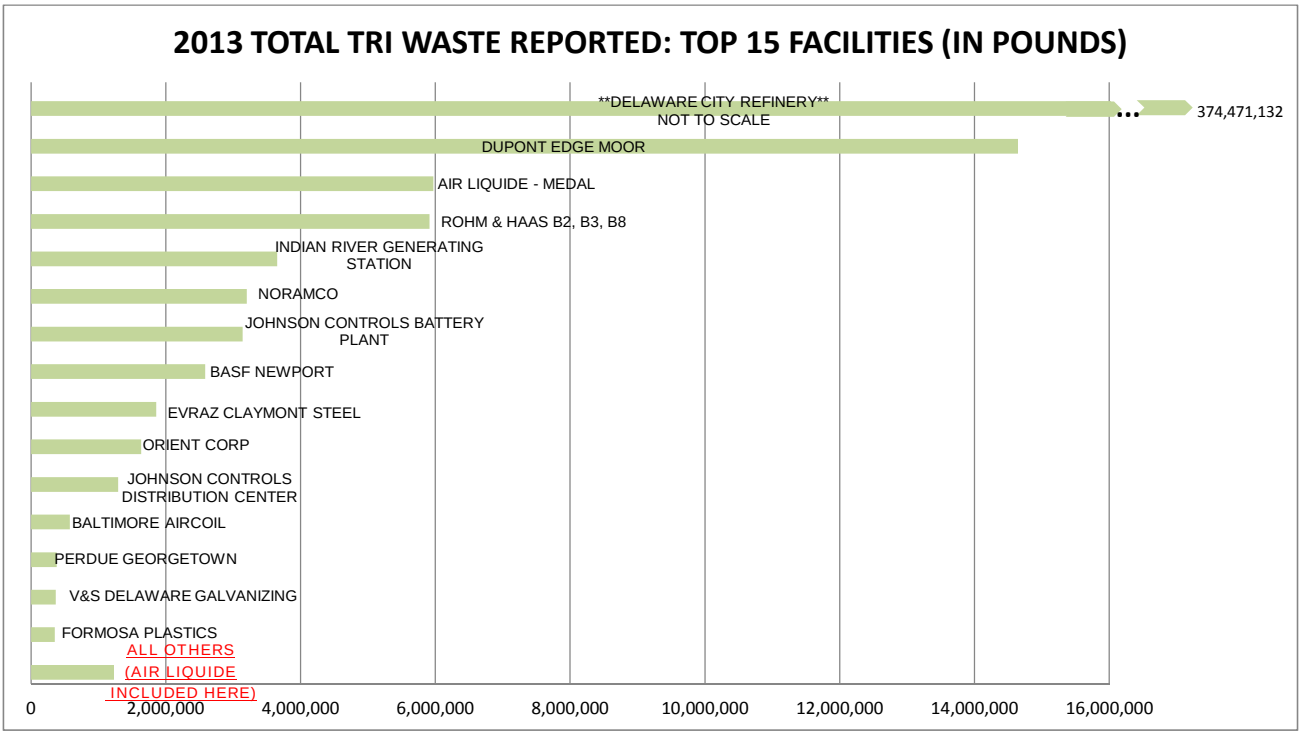
COMPARISON TO OTHER DELAWARE TRI FACILITIES:



TRI FACILITY PROFILES

AIR LIQUIDE INDUSTRIAL, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES CONT.:



TRI FACILITY PROFILES

AIR LIQUIDE MEDAL

LOCATION/CONTACT:

Address: 305 Water Street
Newport, DE 19804

Phone: (302) 225-2137

Contact: Steve Poorman

FACILITY OVERVIEW:

Air Liquide-Medal provides methods to purify and produce gases for a wide range of applications and manufactures hollow fiber membrane systems for air separation/nitrogen generation, carbon dioxide removal and hydrogen purification.

Air Liquide-Medal has reported since 1992. The facility reported five TRI chemicals for 2013, cyclohexane, methanol, n,n-dimethylformamide, n-hexane, and n-methyl-2-pyrrolidone. These chemicals are used as solvents in the fiber production process. The majority of waste is managed on-site and off-site, with less than 0.01% being released on-site to air.

In 2012, on-site releases increased due to increase in cyclohexane usage above the reporting threshold and overall increase in fiber production. The increase in cyclohexane usage is solely due to the nearly doubling of production of fiber used in membranes sold into the aerospace industry used to inert aircraft fuel tanks for safety purposes. In 2013, on-site recycling for methanol and n-hexane increased significantly, resulting from increased production (see *Total On-site Releases Per Year Graph* on the next page).

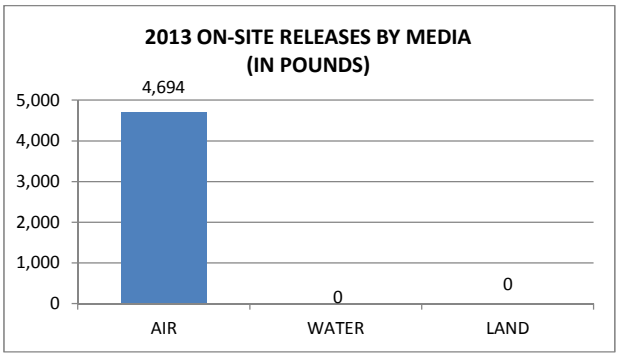
2013 TRI DATA (REPORTED IN POUNDS):

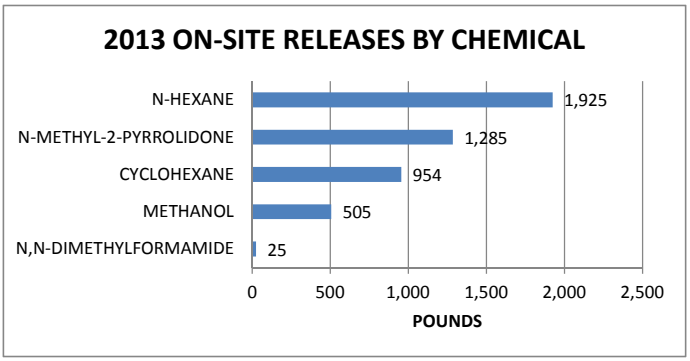
	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
CYCLOHEXANE	954	0	0	954	17,234	0	NO	NO
METHANOL	505	0	0	505	86,496	3,016,630	NO	NO
N,N-DIMETHYLFORMAMIDE	25	0	0	25	25,230	0	NO	NO
N-HEXANE	1,925	0	0	1,925	0	2,506,103	NO	NO
N-METHYL-2-PYRROLIDONE	1,285	0	0	1,285	151,089	0	NO	NO
TOTAL	4,694	0	0	4,694	280,049	5,522,733		

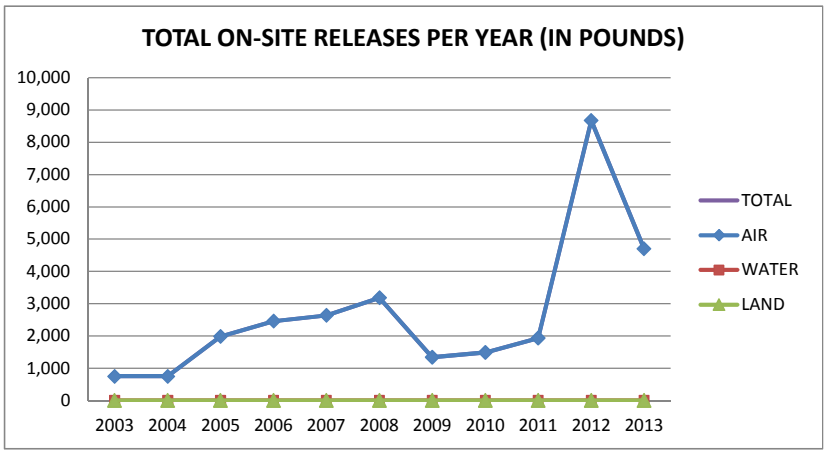
TRI FACILITY PROFILES

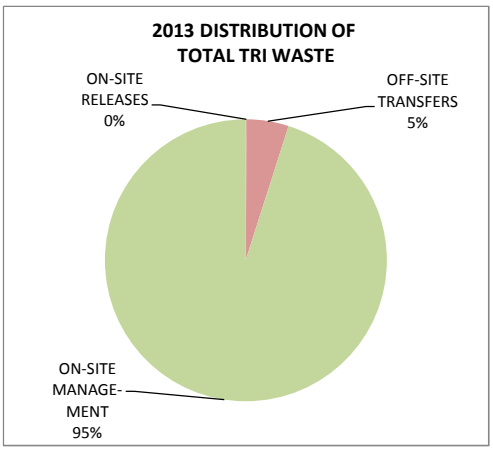
AIR LIQUIDE MEDAL, CONT.

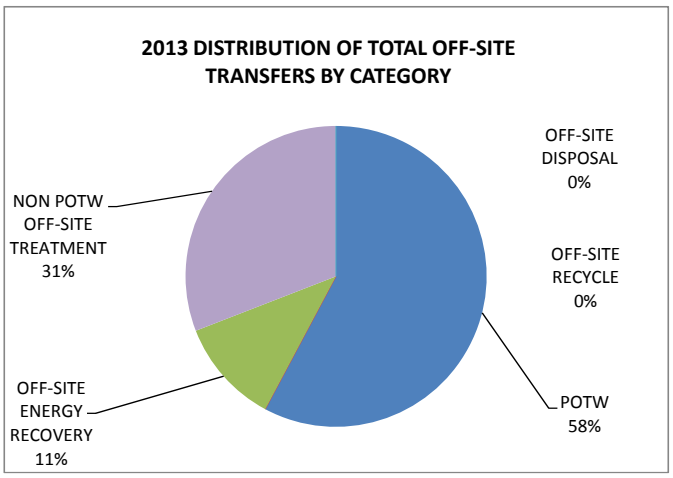
GRAPHICAL INFORMATION:

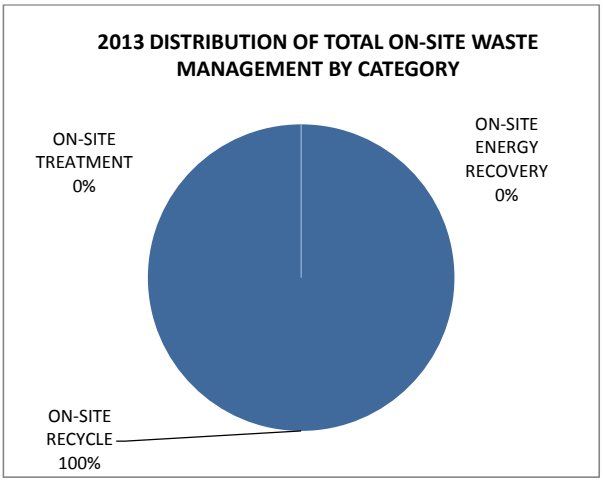








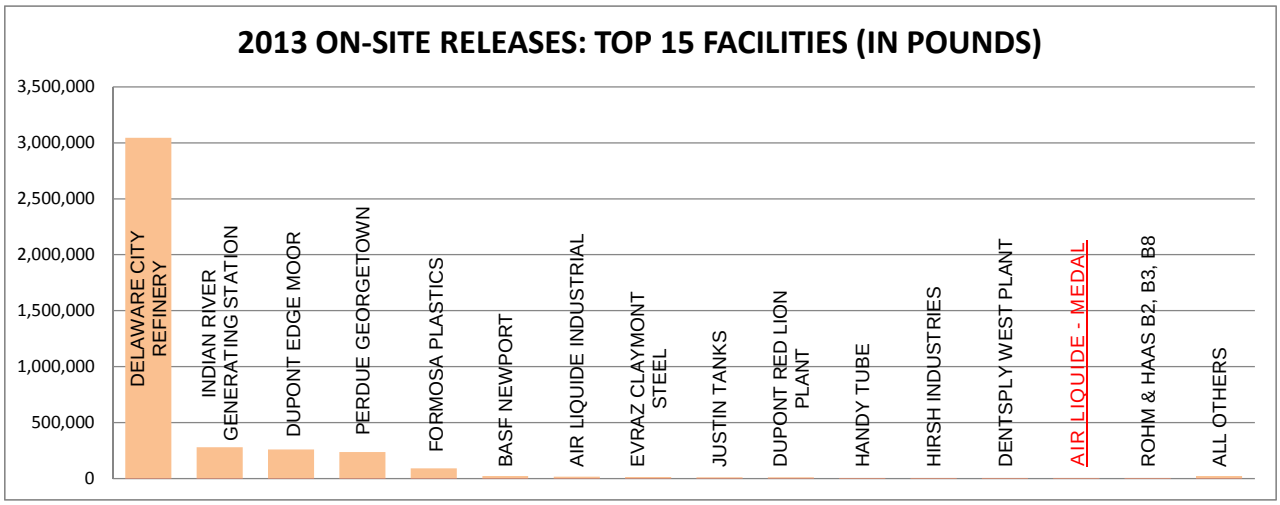


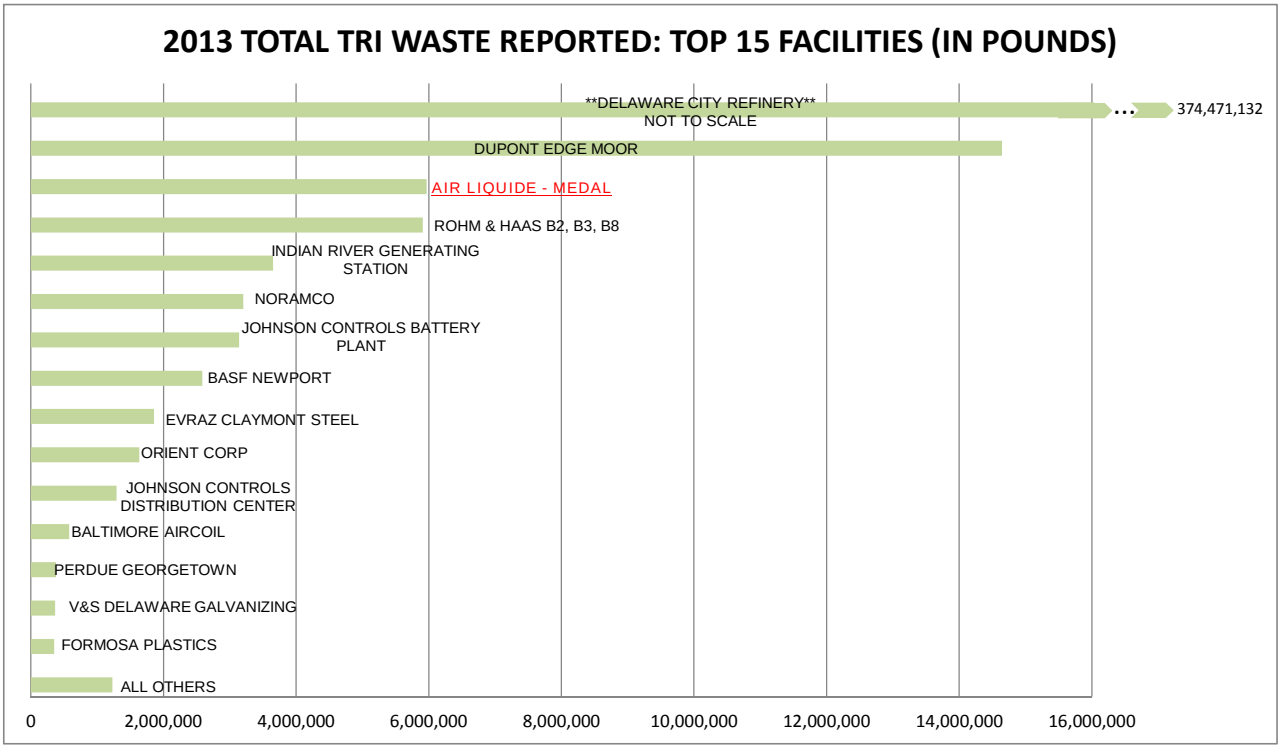


TRI FACILITY PROFILES

AIR LIQUIDE MEDAL, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Air Liquide-Medal ranks 22th in the nation for on-site recycling of methanol (out of 2,123 facilities).

Air Liquide-Medal ranks 3rd in the nation for on-site recycling of n-hexane (out of 1,266 facilities).

Air Liquide-Medal ranks 45th in the nation for off-site transfers of n-methyl-2-pyrrolidone (out of 385 facilities).

TRI FACILITY PROFILES

ALLEN HARIM FOODS - HARBESON

LOCATION/CONTACT:

Address: 18752 Harbeson Road
Harbeson, DE 19951

Phone: (410) 820-2100

Contact: Jim Quinton

FACILITY OVERVIEW:

Allen Harim Foods-Harbeson operates as a poultry processing plant. The facility processes poultry for consumer use and utilizes an on-site wastewater system to treat plant water prior to discharging into a stream.

The facility has reported since 1987, previously as Allen Family Foods. Allen Harim Foods has reported since it purchased the facility in September 2011. For 2013, the facility reported on one chemical, nitrate compounds, on short Form A. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.) In the wastewater treatment process, water dissociable nitrate compounds are a by-product of the nitrification process.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
NITRATE COMPOUNDS*	0	0	0	0	0	0	NO	NO
TOTAL	0	0	0	0	0	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

TRI reports for this facility were submitted on Short Form A. No on-site releases, off-site transfers, or on-site waste management activities are reported. Total reportable waste activities for this facility do not exceed 500 pounds per chemical reported.

TRI FACILITY PROFILES

ALLEN HARIM FOODS - SEAFORD

LOCATION/CONTACT:

Address: 20799 Allen Road
Seaford, DE 19973

Phone: (410) 820-2100

Contact: Jim Quinton

FACILITY OVERVIEW:

Allen Harim Farms-Seaford operates as a mill facility. The primary function of the mill facility is to receive, process, and combine raw ingredients into a nutritional feed for poultry.

The facility has reported since 2008, previously as Allen Family Foods. Allen Harim Farms has reported since it purchased the facility in September 2011. The facility reported on two chemicals in 2013, manganese compounds and zinc compounds. All chemicals are being reported on the short Form A. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.) The metal compounds reported are components of a trace mineral additive feed ingredient utilized at the mill.

2013 TRI DATA (REPORTED IN POUNDS):

	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
MANGANESE COMPOUNDS*	0	0	0	0	0	0	NO	NO
ZINC COMPOUNDS*	0	0	0	0	0	0	NO	NO
TOTAL	0	0	0	0	0	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

TRI reports for this facility were submitted on Short Form A. No on-site releases, off-site transfers, or on-site waste management activities are reported. Total reportable waste activities for this facility do not exceed 500 pounds per chemical reported.

TRI FACILITY PROFILES

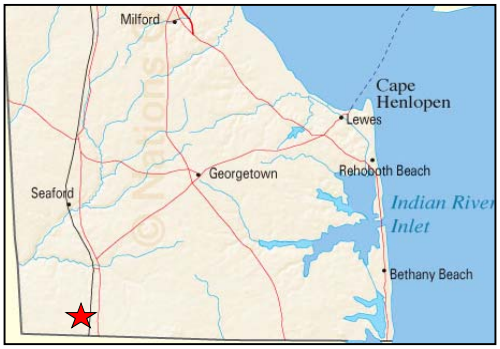
AMICK FARMS

LOCATION/CONTACT:

Address: 10281 Amick Drive
Delmar, DE 19940

Phone: (302) 846-9511

Contact: Jay Wall



FACILITY OVERVIEW:

Amick Farms reported under the North American Industrial Classification System (NAICS) as 311119, which covers other animal food manufacturing (except facilities primarily engaged in Custom Grain Grinding for Animal Feed).

Amick Farms has reported since 1995, previously as Allens Milling Company and Delmar Hatchery. The facility reported on three chemicals in 2012, all on short Form A. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs. of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.) The metal compounds reported are used in poultry feed.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
COPPER COMPOUNDS*	0	0	0	0	0	0	NO	NO
MANGANESE COMPOUNDS*	0	0	0	0	0	0	NO	NO
ZINC COMPOUNDS*	0	0	0	0	0	0	NO	NO
TOTAL	0	0	0	0	0	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

TRI reports for this facility were submitted on Short Form A. No on-site releases, off-site transfers, or on-site waste management activities are reported. Total reportable waste activities for this facility do not exceed 500 pounds per chemical reported.

TRI FACILITY PROFILES

ARLON

LOCATION/CONTACT:

Address: 1100 Governor Lea Road
Bear, DE 19701

Phone: (302) 834-2100

Contact: Robert Carini

FACILITY OVERVIEW:

Arlon specializes in the manufacturing of fluoropolymer (PTFE) laminates and ceramic-filled fluoropolymer laminates that are used in frequency-dependent circuit applications such as aircraft radar systems, base station amplifiers and cell tower antennas for wireless telecommunications. Arlon also produces precision calendared silicone rubber coated fabric and specialty extruded self-fusing silicone rubber tapes. These silicone rubber products are used in aerospace, transportation, general industrial, and semiconductor markets commonly for electrical insulation.

Arlon has reported since 1987, previously as Keene. Arlon reported three TRI chemicals, ethylbenzene, xylene and copper, in 2013. Arlon uses xylene as a chemical processing aid in the coating of fiberglass with the silicone rubber dispersion. Ethylbenzene is a component found in many commercial grades of xylene. A vast majority of the solvents used in the coating process is destroyed in the on-site thermal oxidizer system. Copper is used in the antenna assemblies.

On-site release amounts increased significantly in 2004 because of a failure in the heat exchanger in the thermal oxidizers that destroy solvent releases from the coating process. The heat exchanger was repaired in 2005, and the release amount returned to near historical levels the following year (see *Total On-site Releases Per Year Graph* on the next page).

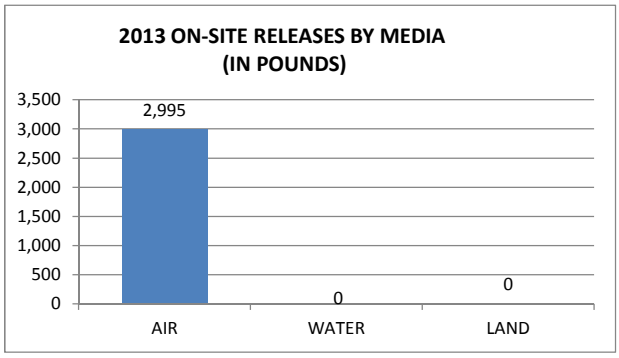
2013 TRI DATA (REPORTED IN POUNDS):

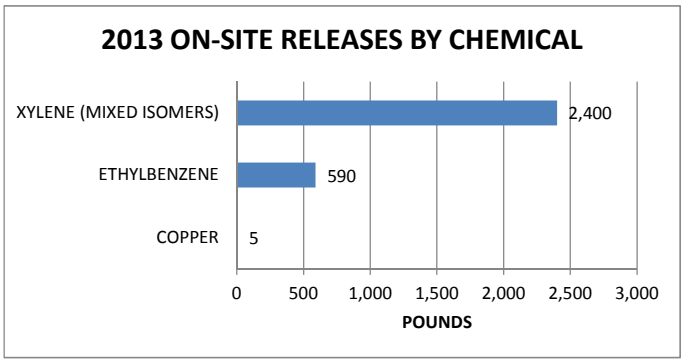
	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
COPPER	5	0	0	5	2,200	0	NO	NO
ETHYLBENZENE	590	0	0	590	750	27,000	NO	YES
XYLENE (MIXED ISOMERS)	2,400	0	0	2,400	3,000	108,000	NO	NO
TOTAL	2,995	0	0	2,995	5,950	135,000		

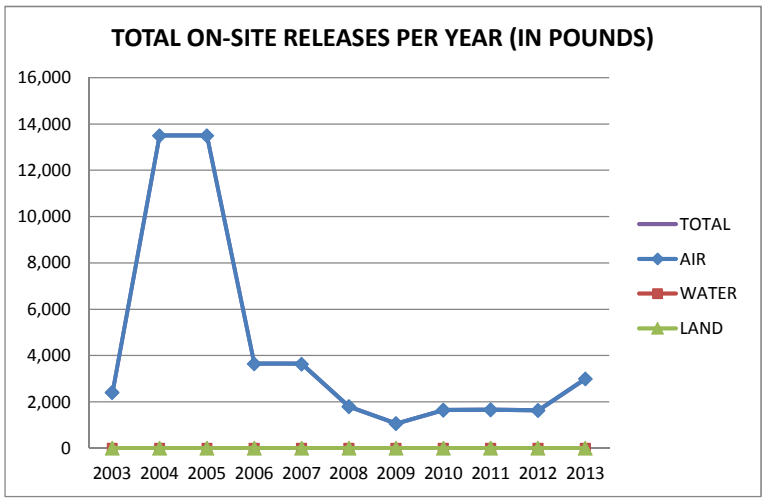
TRI FACILITY PROFILES

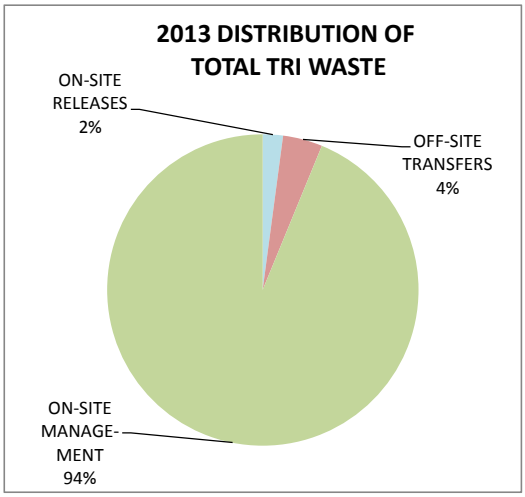
ARLON, CONT.

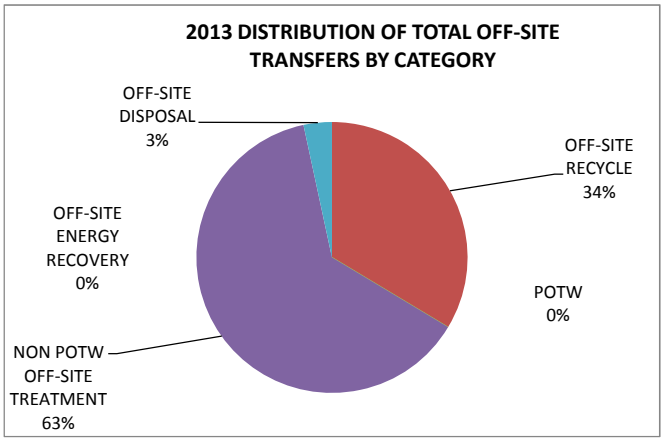
GRAPHICAL INFORMATION:

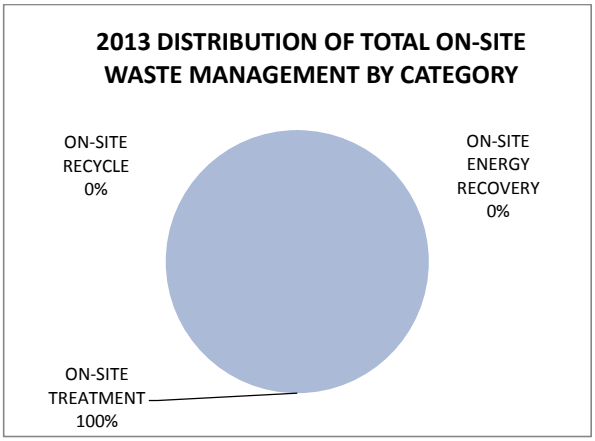








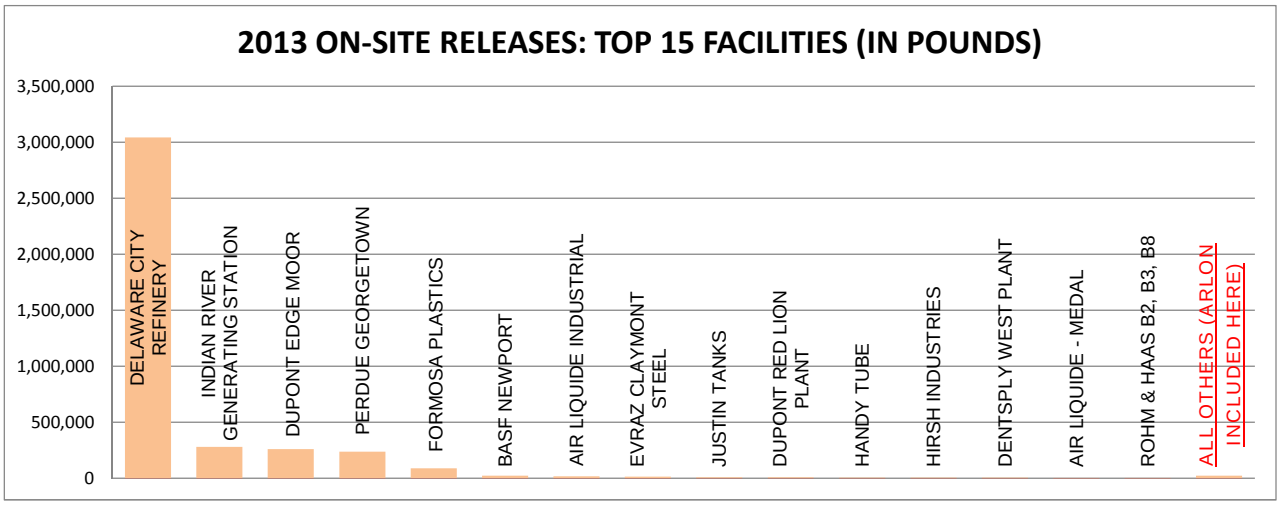


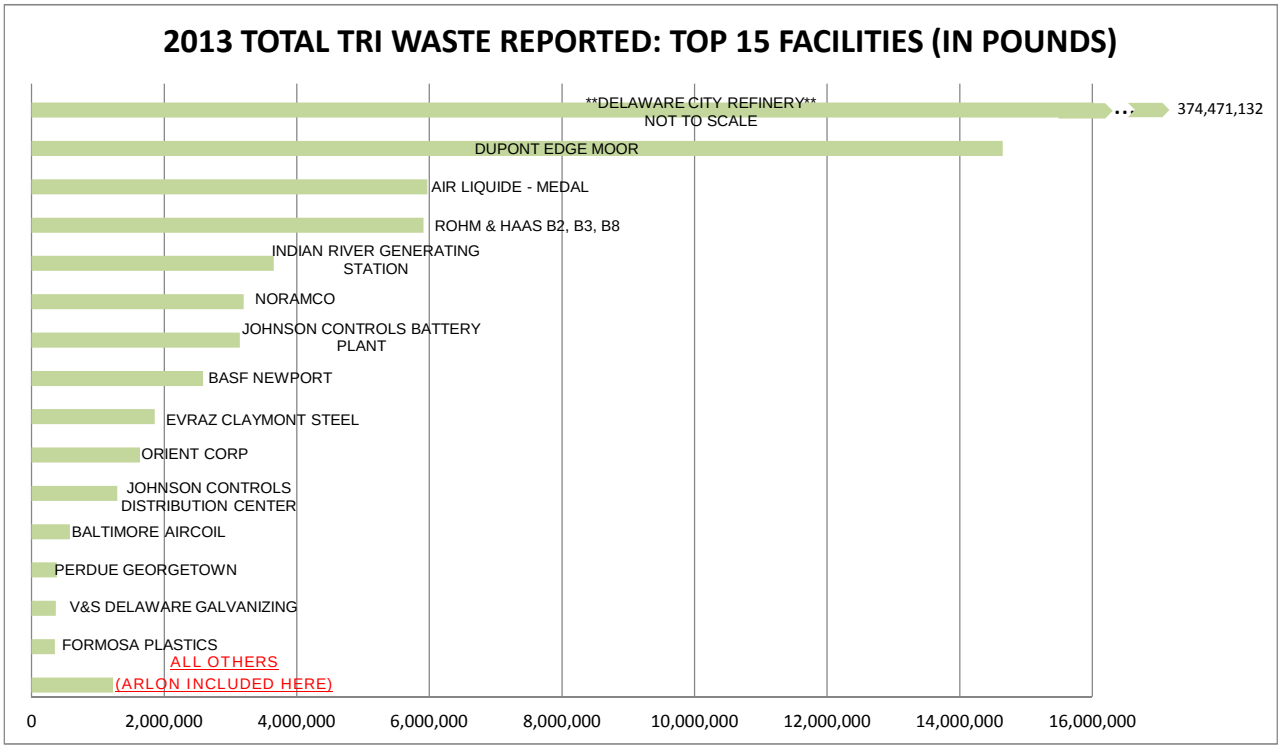


TRI FACILITY PROFILES

ARLON, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Arlon ranks 7th in the on-site treatment of xylene (mixed isomers) for plastic and rubber manufacturing facilities (NAICS 326) (out of 63 facilities).

Arlon ranks 40th in on-site releases of xylene (mixed isomers) for plastic and rubber manufacturing facilities (NAICS 326) (out of 63 facilities).

TRI FACILITY PROFILES

BALTIMORE AIRCOIL

LOCATION/CONTACT:

Address: 1162 Holly Hill Road
Milford, DE 19963

Phone: (910) 391-7933

Contact: Dale Wagner

FACILITY OVERVIEW:

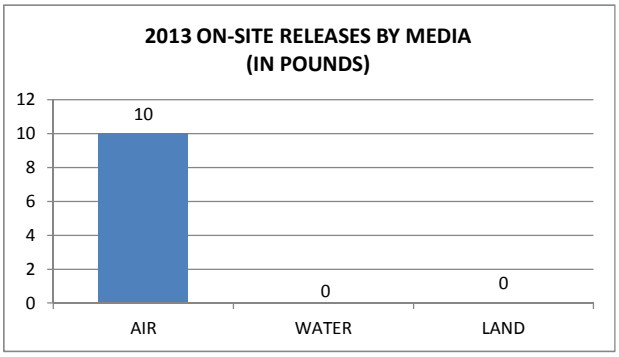
Baltimore Aircoil reported under the North American Industrial Classification System (NAICS) as 333415, which covers air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing.

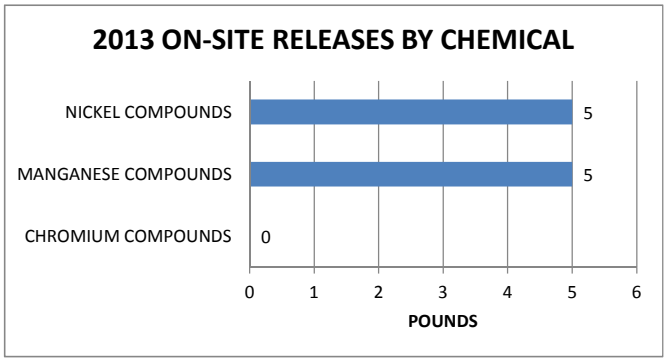
Baltimore Air Coil has reported since 2011. The facility reported on three chemicals in 2013, with on-site releases only to air due to welding and laser cutting of metal. The chemicals include chromium, manganese and nickel. The chemicals that are reported are from scrap metal that is shipped off-site for recycling. Virtually all of the waste is shipped off-site for recycling, with less than 1% being released on-site.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
CHROMIUM COMPOUNDS	0	0	0	0	211,618	0	NO	YES
MANGANESE COMPOUNDS	5	0	0	5	125,000	0	NO	NO
NICKEL COMPOUNDS	5	0	0	5	241,000	0	NO	YES
TOTAL	10	0	0	10	577,618	0		

GRAPHICAL INFORMATION:

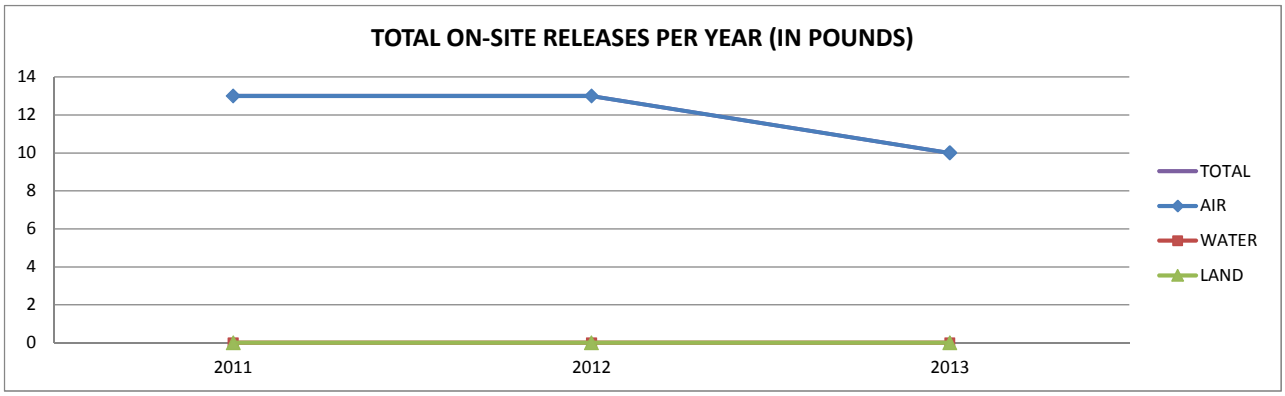


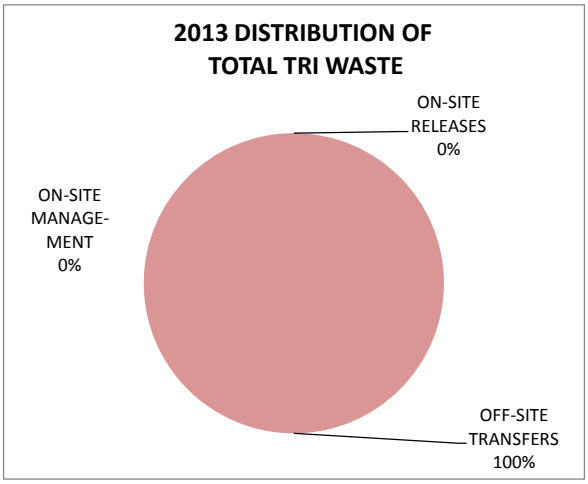


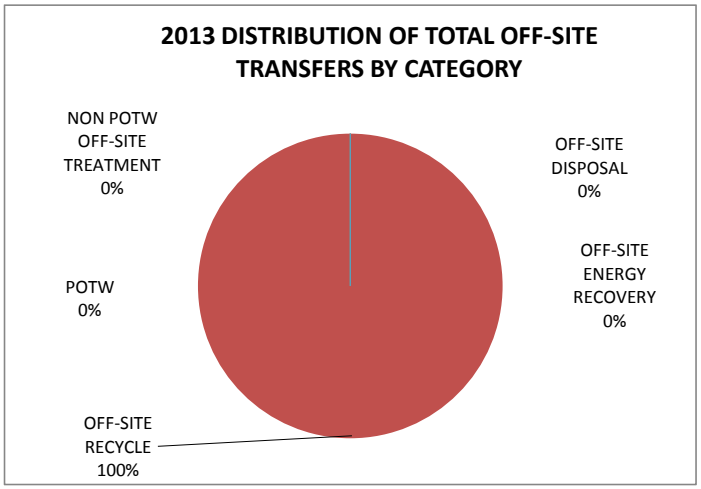
TRI FACILITY PROFILES

BALTIMORE AIRCOIL, CONT.

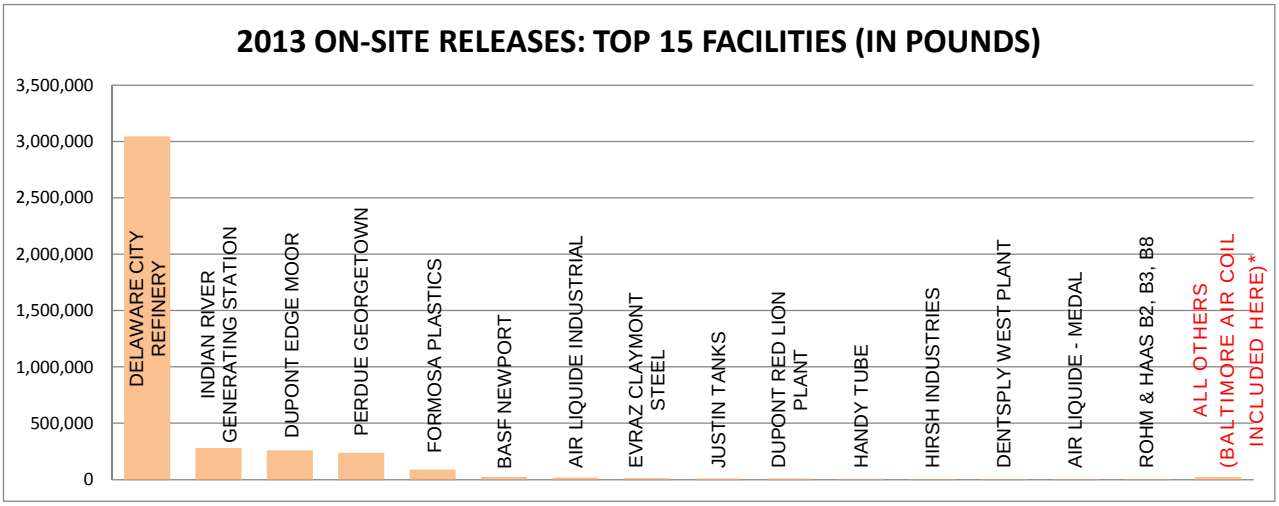
GRAPHICAL INFORMATION CONT.:







COMPARISON TO OTHER DELAWARE TRI FACILITIES:

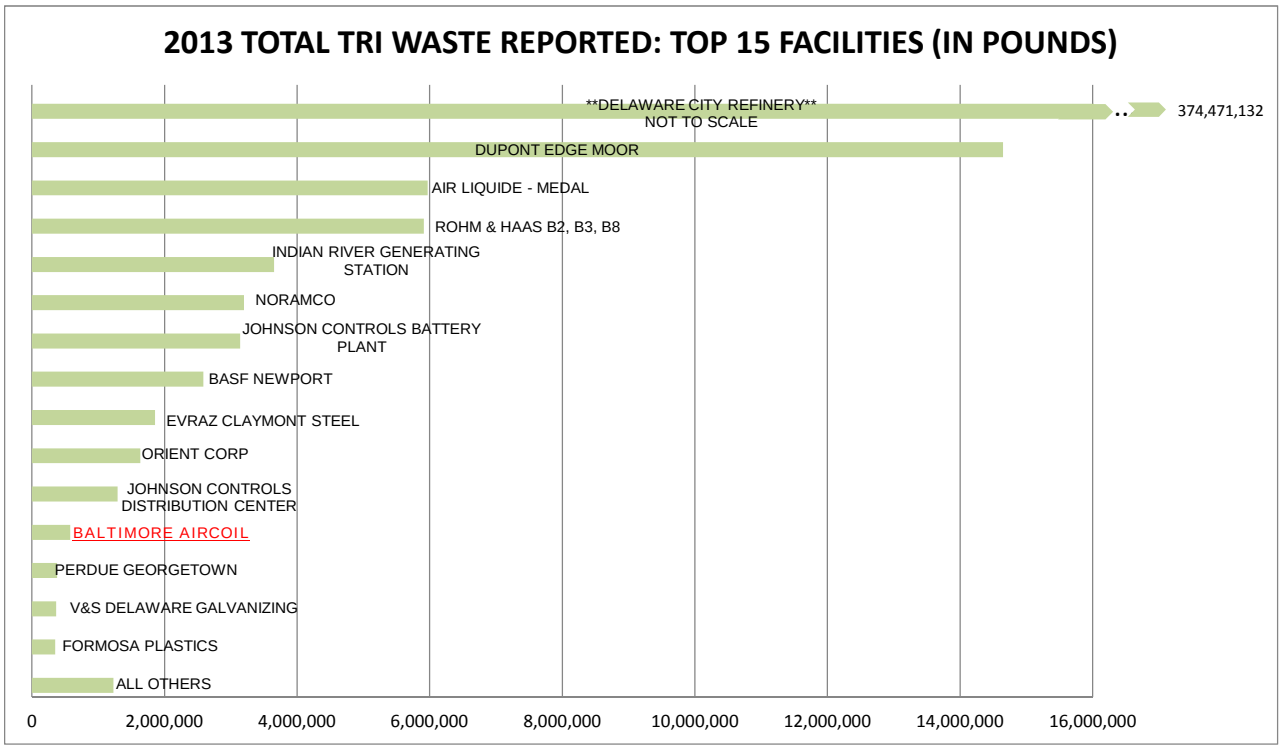


*Baltimore Aircoil ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third

TRI FACILITY PROFILES

BALTIMORE AIRCOIL, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES CONT.:



NOTABLE 2013 NATIONAL RANKINGS:

Baltimore Aircoil ranks 43th in the nation for off-site transfers of chromium compounds (out of 1,343 facilities).

Baltimore Aircoil ranks 24th in the nation for off-site transfers of nickel compounds (out of 1110 facilities).

TRI FACILITY PROFILES

BASF NEWPORT

LOCATION/CONTACT:

Address: 205 South James Street
Newport, DE 19804

Phone: (973)-245-6077

Contact: Maureen Paukert

FACILITY OVERVIEW:

BASF Newport manufactures high performance pigments for the paint, plastic, and printing industries. The Newport site has reported since 1998, previously as CIBA Specialty Chemicals. The Newport Site became part of BASF Corporation in April 2010. For 2013, the facility reported on nine chemicals, with the majority either being treated or recycled on or off-site, with less than 1% being released on-site.

BASF has expanded and modernized the Newport facility, with production almost doubling since 1998. Even with this production increase, the facility has achieved a 67% reduction in on-site releases. Methanol is the primary chemical released on-site. Methanol is utilized in pigment production while also being generated as a co/by-product in some of the same processes. Methanol is managed both on and off-site, with less than 1% being released on-site. The other TRI chemicals used on-site are either raw materials or process aids.

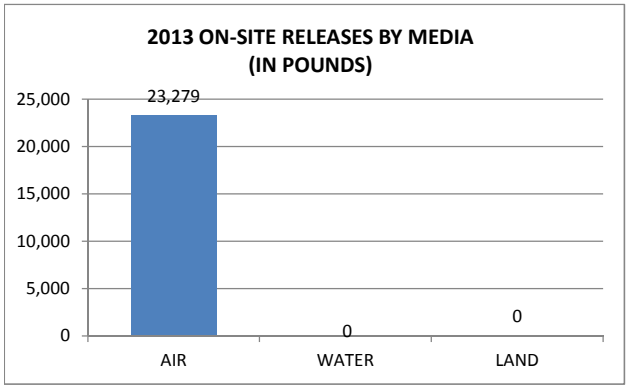
2013 TRI DATA (REPORTED IN POUNDS):

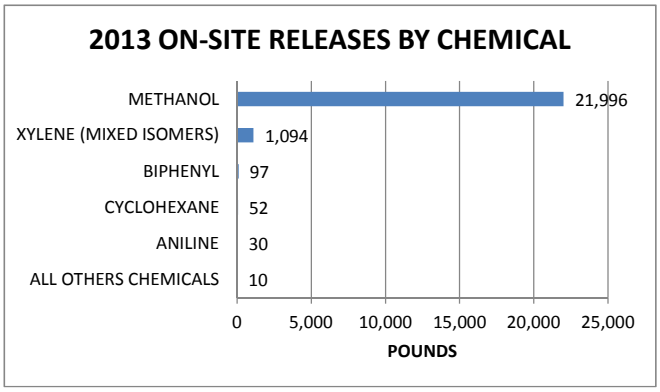
	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
ANILINE	30	0	0	30	44,116	1,211	NO	NO
BIPHENYL	97	0	0	97	105,037	2,321	NO	NO
CYCLOHEXANE	52	0	0	52	23,836	3,459	NO	NO
METHANOL	21,996	0	0	21,996	586,255	1,190,551	NO	NO
NITRATE COMPOUNDS	0	0	0	0	28,822	0	NO	NO
NITRIC ACID	0	0	0	0	0	29,286	NO	NO
N-METHYL-2-PYRROLIDONE	0	0	0	0	49,782	0	NO	NO
P-CHLOROANILINE	10	0	0	10	5,160	390	NO	YES
XYLENE (MIXED ISOMERS)	1,094	0	0	1,094	661	5,093	NO	NO
TOTAL	23,279	0	0	23,279	843,669	1,232,311		

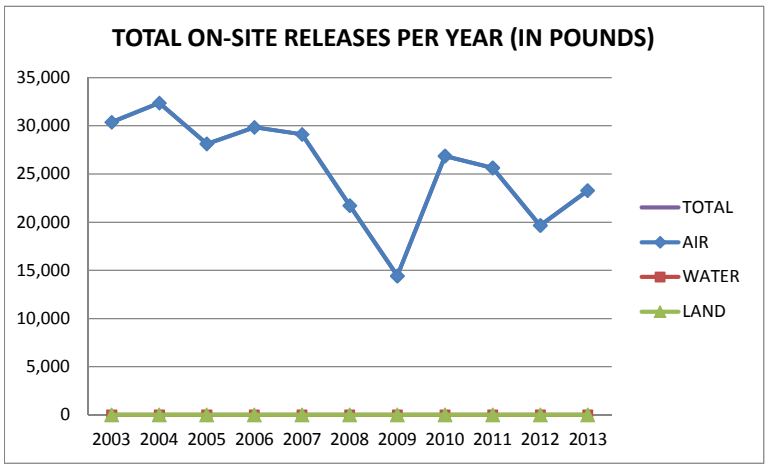
TRI FACILITY PROFILES

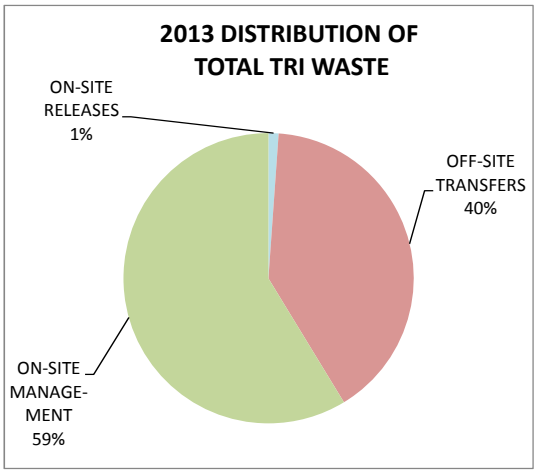
BASF NEWPORT, CONT.

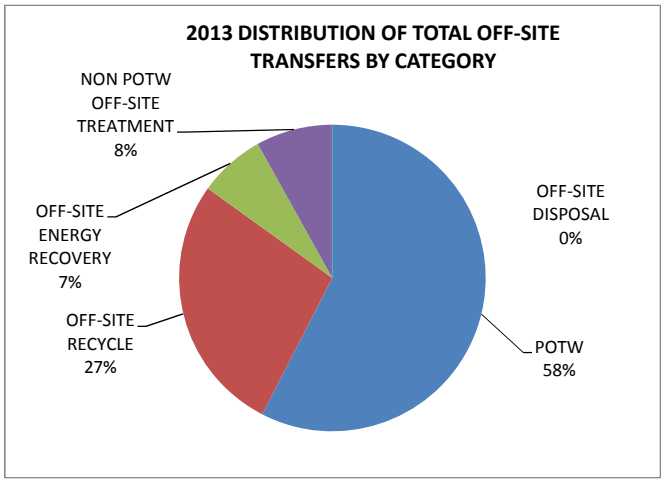
GRAPHICAL INFORMATION:

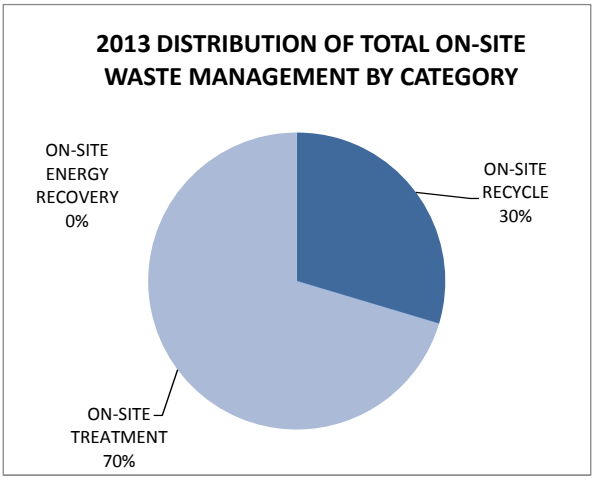








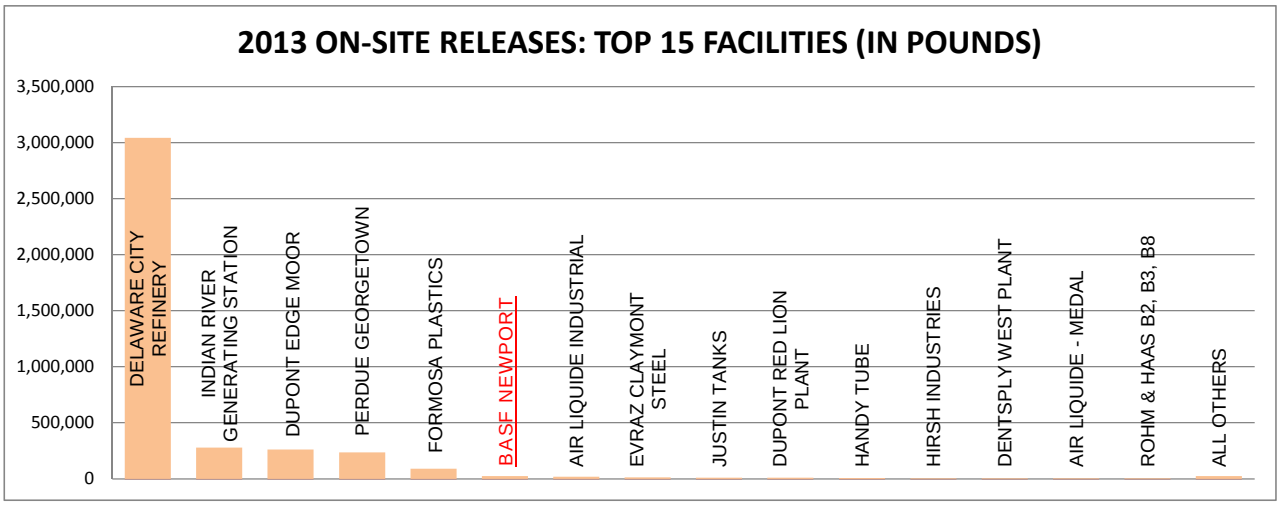


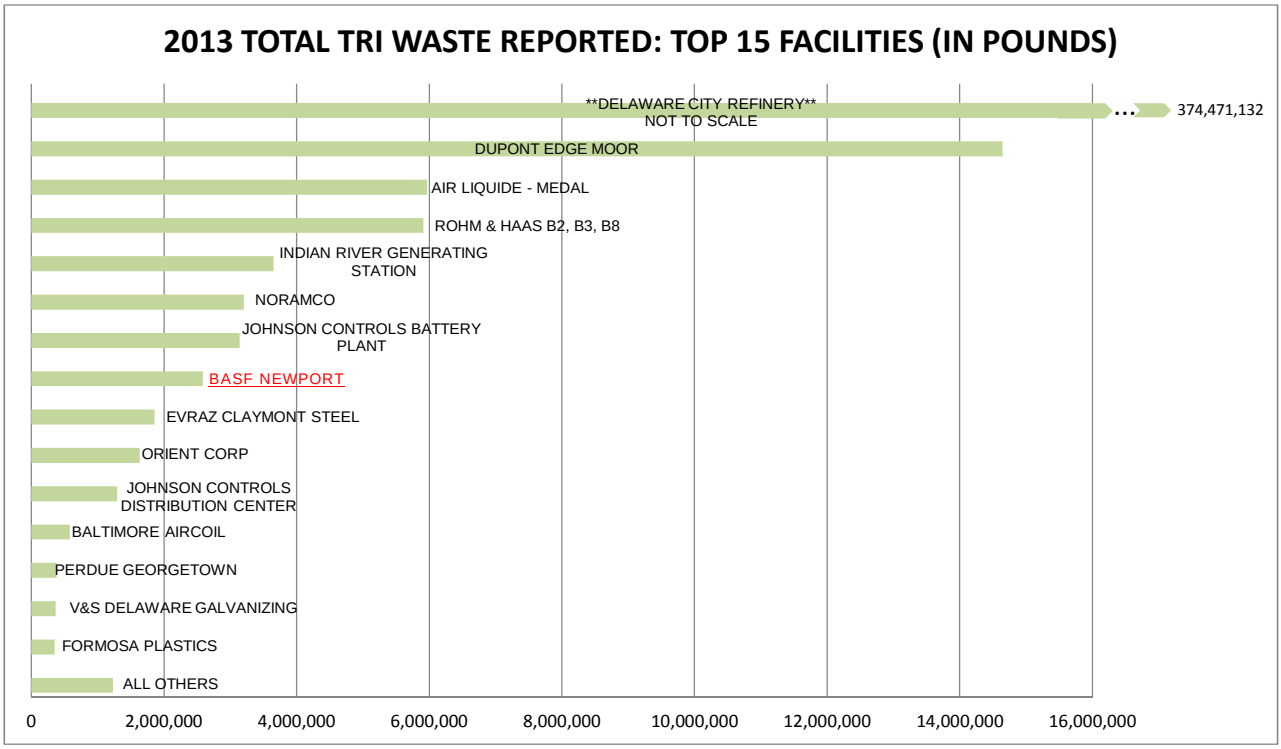


TRI FACILITY PROFILES

BASF NEWPORT, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

BASF Newport ranks 65th in the nation for off-site transfers of methanol (out of 2,123 facilities).

BASF Newport ranks 58th in the nation for on-site recycling for methanol (out of 2,123 facilities).

BASF Newport ranks 3rd in the nation for off-site transfers of biphenyl (out of 120 facilities).

TRI FACILITY PROFILES

BASF SEAFORD

LOCATION/CONTACT:

Address: 100 Industrial Park Blvd.
Seaford, DE 19973

Phone: (973)-245-6077

Contact: Maureen Paukert

FACILITY OVERVIEW:

BASF Seaford manufactures emulsion polymers, sometimes referred to as latex, primarily for the printing and packaging industries but also used as additives for paints and coatings. Typical customers include ink and coating manufacturers.

BASF Seaford reported on five TRI chemicals in 2013. Ammonia was the highest on-site release reported, accounting for 78% of all on-site releases. It is used as a reagent to solubilize the resin intermediate prior to polymerization and it is used to adjust pH in the process. The other chemicals reported are utilized primarily as raw materials in the polymerization process.

On-site releases have typically trended with the production level. On-site releases for 2013 were down 36% compared to 2012 and production was down 18%.

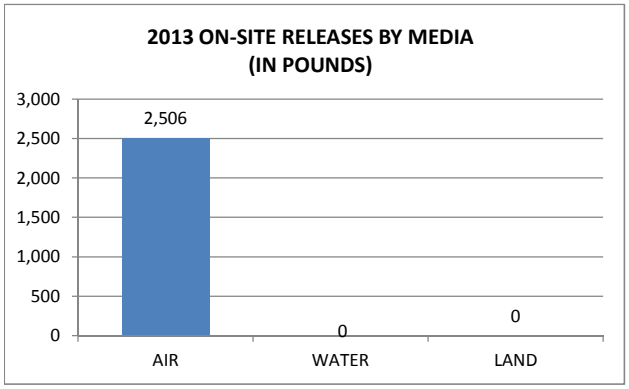
2013 TRI DATA (REPORTED IN POUNDS):

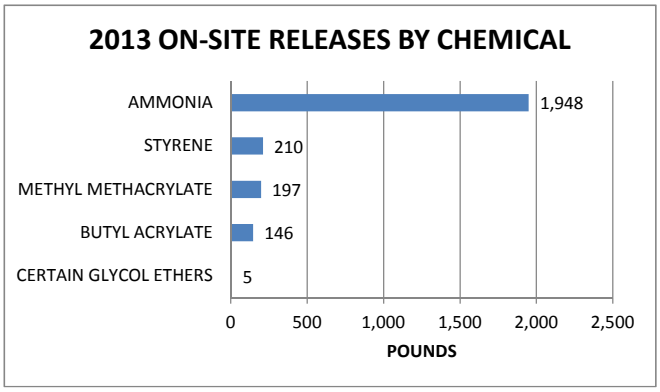
	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
AMMONIA	1,948	0	0	1,948	288	2,301	NO	NO
BUTYL ACRYLATE	146	0	0	146	61	58	NO	NO
CERTAIN GLYCOL ETHERS	5	0	0	5	271	0	NO	NO
METHYL METHACRYLATE	197	0	0	197	61	381	NO	NO
STYRENE	210	0	0	210	78	523	NO	YES
TOTAL	2,506	0	0	2,506	759	3,263		

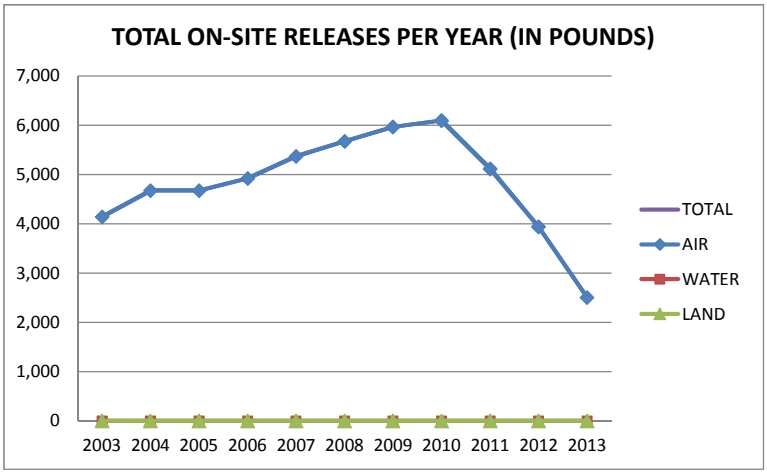
TRI FACILITY PROFILES

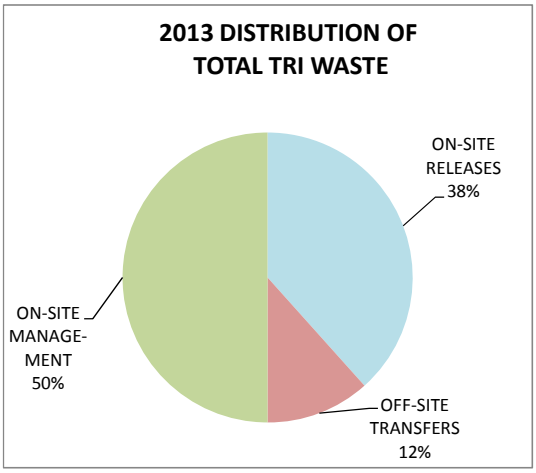
BASF SEAFORD, CONT.

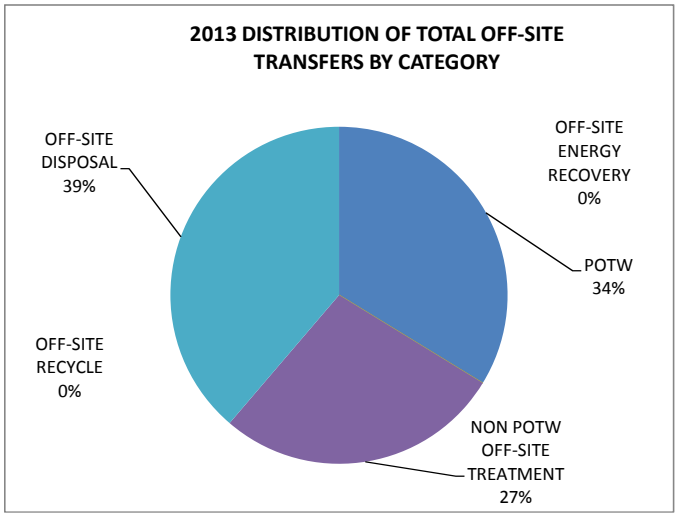
GRAPHICAL INFORMATION:

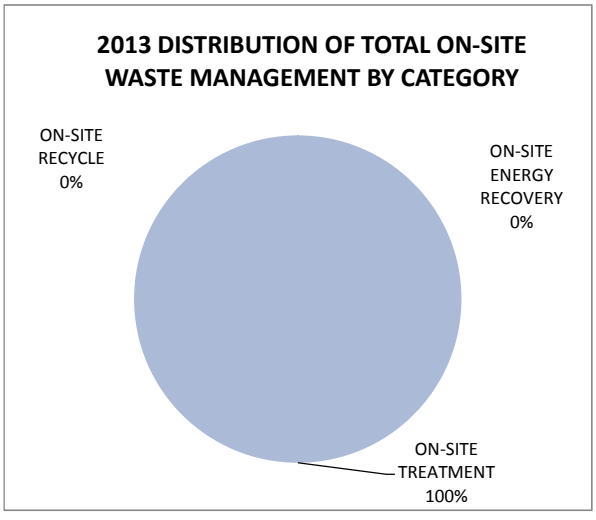








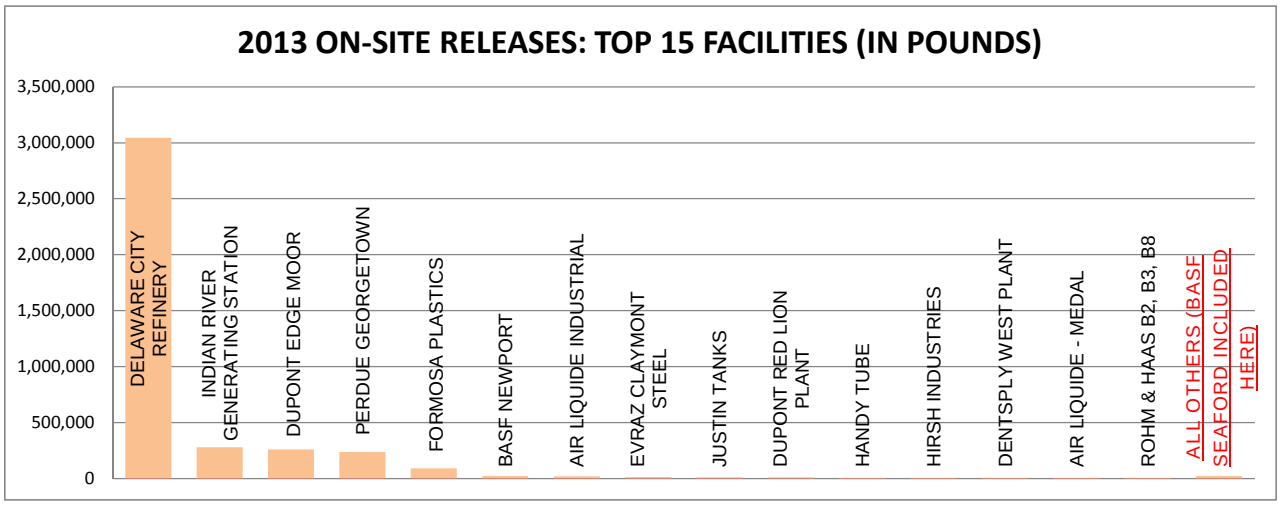




TRI FACILITY PROFILES

BASF SEAFORD, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:



BASF Seaford ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

BASF Seaford is ranked 48th in the on-site treatment of methyl methacrylate by chemical facilities (NAICS 325)(out of 166 facilities).

TRI FACILITY PROFILE

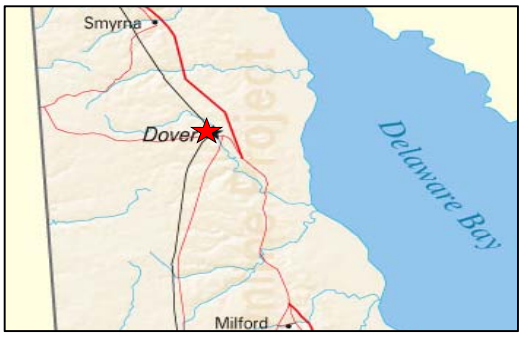
CARL KING

LOCATION/CONTACT:

Address: 1400 E. Lebanon Road
Dover, DE 19901

Phone: (301) 322-6691

Contact: Charlie Raines



FACILITY OVERVIEW:

Carl King distributes heating oil and bulk stores fuel on-site. The operation involves loading petroleum products onto tank wagons and distributing them to customers. The tank wagons are top loaded in a diked area.

Carl King has reported since 1998. The facility reported on three chemicals in 2013, (1,2,4-trimethylbenze, naphthalene, xylene(mixed isomers)), with all chemicals being reported on the short Form A. These chemicals are found in the fuels that are sold. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs. of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 lbs. to be eligible to submit a Form A report.)

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
1,2,4-TRIMETHYLBENZENE*	0	0	0	0	0	0	NO	NO
NAPHTHALENE*	0	0	0	0	0	0	NO	YES
XYLENE (MIXED ISOMERS)*	0	0	0	0	0	0	NO	NO
TOTAL	0	0	0	0	0	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

TRI reports for this facility were submitted on Short Form A. No on-site releases, off-site transfers, or on-site waste management activities are reported. Total reportable waste activities for this facility do not exceed 500 pounds per chemical reported.

TRI FACILITY PROFILES

COLOR WORKS

LOCATION/CONTACT:

Address: 251 Edwards Ave
New Castle, DE 19720

Phone: (302)324-8411

Contact: Sean Histed

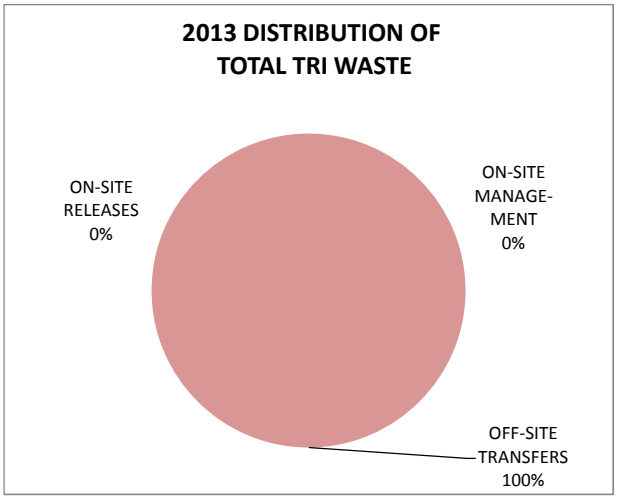
FACILITY OVERVIEW:

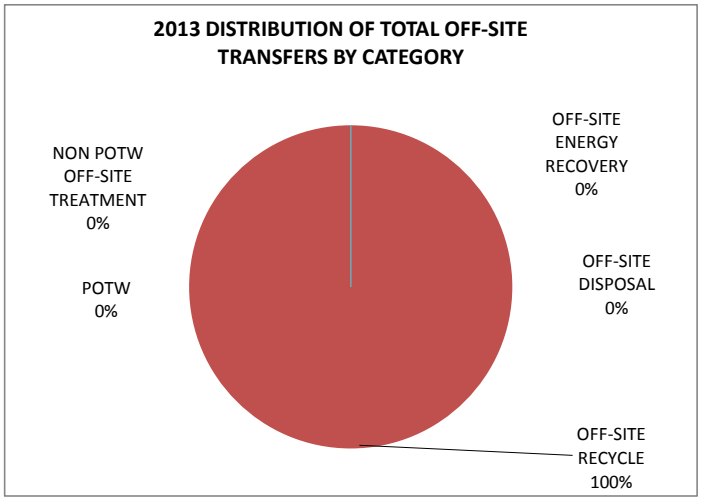
Color Works reported under the North American Industrial Classification System (NAICS) as 332812, which covers metal coating, engraving, and allied services to manufacturers. Color Works reported on one chemical in 2013 manganese. There were no reported on-site releases, with all waste being sent off-site for recycling.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
MANGANESE	0	0	0	0	1,094	0	NO	NO
TOTAL	0	0	0	0	1,094	0		

GRAPHICAL INFORMATION:





COLOR WORKS, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:

Color Works ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.

Color Works ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

TRI FACILITY PROFILES

CRODA

LOCATION/CONTACT:

Address: 315 Cherry Lane
New Castle, DE 19720

Phone: (302) 429-5269

Contact: Robert Touhey

FACILITY OVERVIEW:

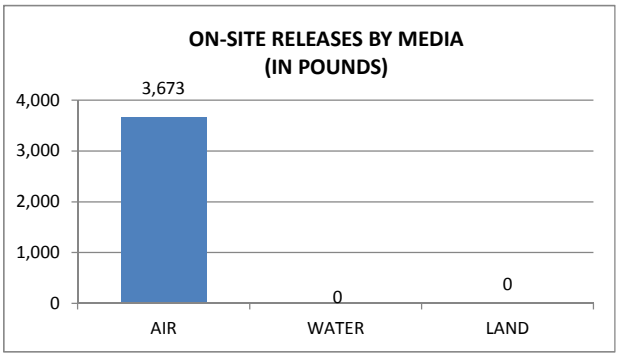
Croda manufactures products, known as surfactants, that promote the mixing of oil and water based ingredients in many consumer products, such as baby shampoo, shaving cream, mouthwash, pharmaceuticals, and many other personal care and industrial products.

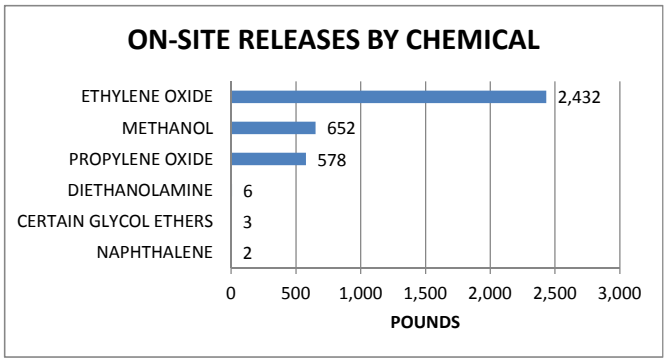
The facility has reported since 1987, previously as ICI Atlas Point and Uniqema, with Croda International acquiring Uniqema in 2006. Croda reported on six chemicals for 2013. All on-site releases were to air, with the largest being ethylene oxide. The majority of chemicals reported are primarily utilized as ingredients in the facility's products.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
CERTAIN GLYCOL ETHERS	3	0	0	3	3,141	0	NO	NO
DIETHANOLAMINE	6	0	0	6	41	0	NO	NO
ETHYLENE OXIDE	2,432	0	0	2,432	0	0	NO	YES
METHANOL	652	0	0	652	16,019	0	NO	NO
NAPHTHALENE	2	0	0	2	420	0	NO	YES
PROPYLENE OXIDE	578	0	0	578	0	0	NO	YES
TOTAL	3,673	0	0	3,673	19,621	0		

GRAPHICAL INFORMATION:

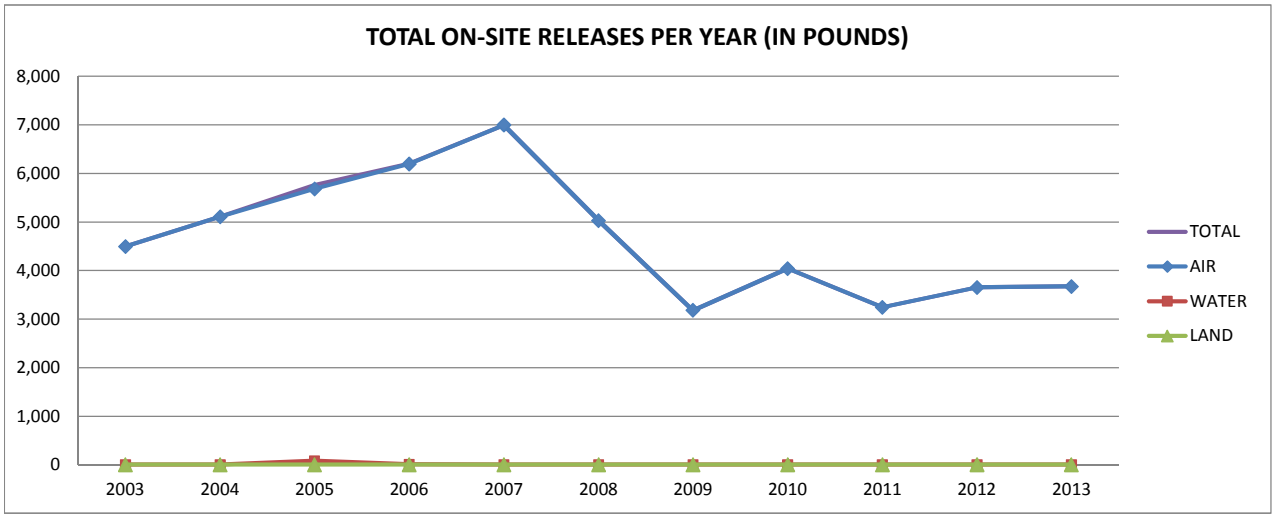


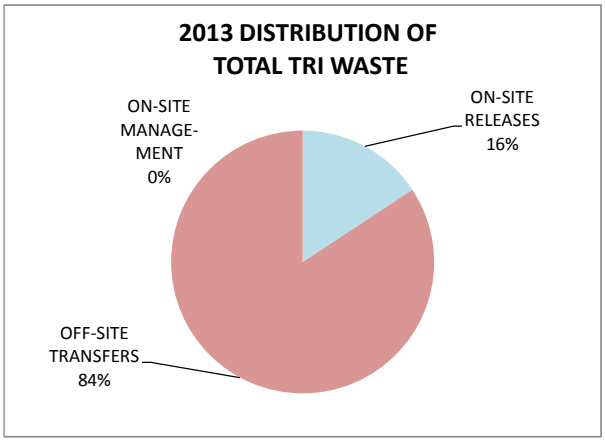


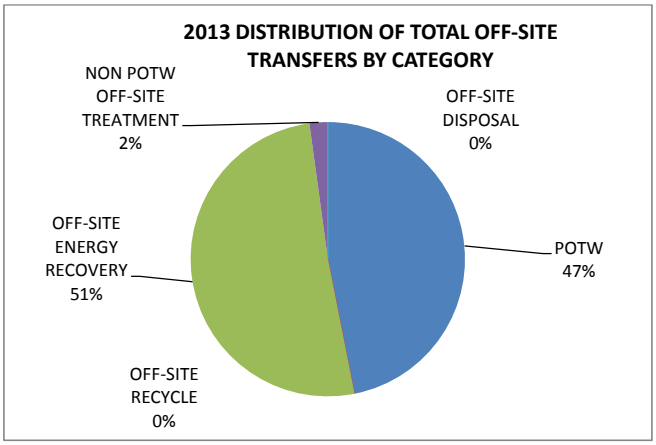
TRI FACILITY PROFILES

CRODA, CONT.

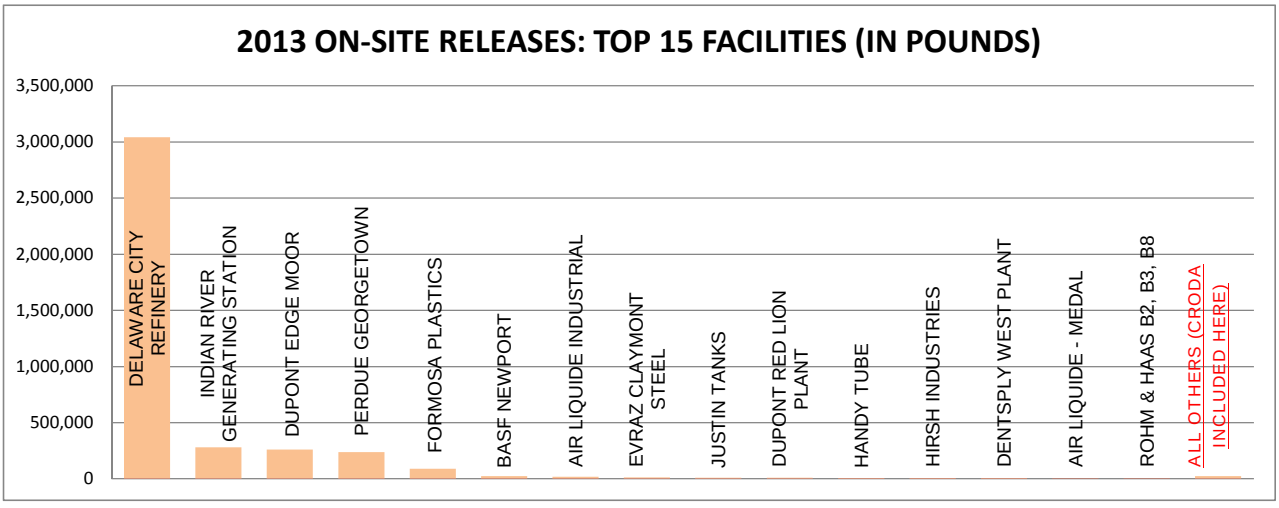
GRAPHICAL INFORMATION CONT.:







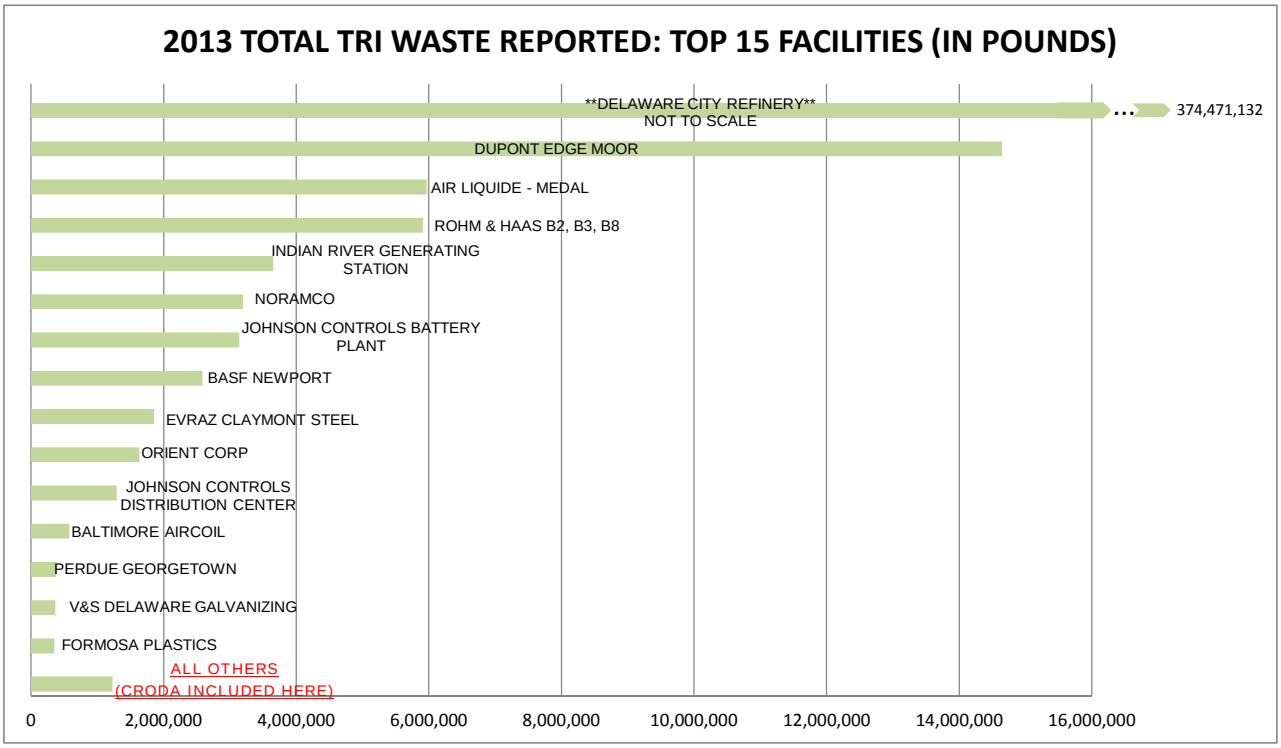
COMPARISON TO OTHER DELAWARE TRI FACILITIES:



TRI FACILITY PROFILES

CRODA, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES CONT.:



NOTABLE 2013 NATIONAL RANKINGS:

Croda ranks 26th in the nation for on-site releases of ethylene oxide (out of 115 facilities).

Croda ranks 38th in the nation for on-site releases of propylene oxide (out of 97 facilities).

TRI FACILITY PROFILES

DELAWARE CITY REFINERY

LOCATION/CONTACT:

Address: 4550 Wrangle Hill Road
Delaware City, DE 19706

Phone: (302)-834-6033

Contact: Lisa Lindsey

FACILITY OVERVIEW:

The Delaware City Refinery refines crude oil into automotive gasoline, diesel fuel, home heating oil, and a variety of other petroleum and energy products. In June of 2010, the Delaware City Refining Company LLC purchased the facility from Valero after the refinery had been idled in November 2009. The refinery began restarting process unit operations in mid-2011 following extensive maintenance activity and is fully operational.

For 2013 the refinery reported on 38 chemicals, with 3 million pounds being released on-site. The largest contributors were the 2.6 million pounds of nitrate compounds released to water, 257,679 pounds of sulfuric acid aerosol, and 36,039 pounds of ammonia, accounting for 96% of all on-site releases. Nitrogen, a naturally occurring compound in all crude oil, is removed during the refining process creating ammonia (NH3), which is processed at the Sulfur Recovery Unit and residual quantities are treated at the refinery's wastewater treatment. This ammonia is treated via nitrification at the treatment plant, creating the nitrate compounds that are released to water.

Sulfuric acid mist emissions are released from combustion units at the refinery including process heaters, boilers and combustion turbines. When a sulfur-bearing fuel such as refinery fuel gas is burned, the sulfur is initially converted to Sulfur dioxide (SO2). Under certain conditions, a small portion of the SO2 converts to Sulfur Trioxide (SO3). A fraction of the SO3 can undergo a further reaction to form sulfuric acid aerosol. Sulfuric acid mist emissions vary from year to year.

Aqueous Ammonia is utilized as a reactant for several combustion treatment processes such as the Selective Catalytic Reduction (SCR) and Selective Non-catalytic Reduction (SNCR), controls that are utilized at the refinery to reduce NOx emissions from sources such as process heaters, package boilers and the Fluid Coking Unit CO Boiler. Over 15 million pounds of ammonia is treated on-site, with less than 0.30 percent being released on-site to air and water.

On-site releases for the refinery are down 17.5% compared to 2012. This was primarily due to the reduction of nitrate compounds being released to water, which are down 775,029 pounds compared to 2012. Nitrate releases vary from year to year (see *Total On-site Releases Per Year Graph* on the next page).

An off-site transfer of asbestos for disposal (125,560 pounds) was recorded in 2013 related to asbestos remediation and abatement activities performed by the refinery. The disposal of asbestos off-site was down by 470,060 pounds compared to 2011 as higher amounts were generated related to repair and maintenance activities in preparation of the restart of the refinery.

TRI FACILITY PROFILES

DELAWARE CITY REFINERY, CONT.

The refinery reported over 371 million pounds of chemicals managed on-site, via treatment and energy recovery. The largest of amount reported was hydrogen sulfide with over 336 million pounds treated on-site. Hydrogen sulfide is a gas that is produced during the petroleum refining process that is treated and converted to elemental sulfur by sulfur recovery processes, a material that is sold for agricultural and chemical manufacturing uses.

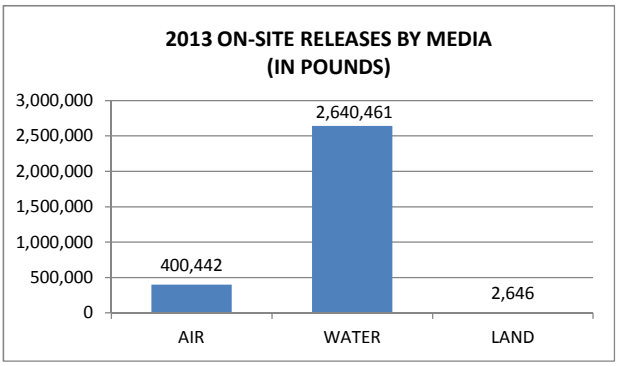
2013 TRI DATA (REPORTED IN POUNDS):

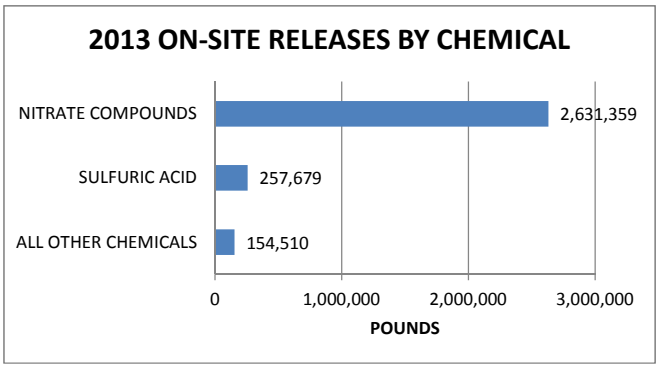
	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
1,2,4-TRIMETHYLBENZENE	1,203	5	0	1,208	0	63,921	NO	NO
1,3-BUTADIENE	396	0	0	396	0	0	NO	YES
2,4-DIMETHYLPHENOL	0	179	0	179	0	251,805	NO	YES
AMMONIA	29,968	6,071	0	36,039	0	15,158,543	NO	NO
ANTHRACENE	10	5	0	15	0	0	NO	NO
ASBESTOS (FRIABLE)	0	0	0	0	125,560	0	NO	YES
BENZENE	9,102	11	0	9,113	8	432,029	NO	YES
BENZO(G,H,I)PERYLENE	0	5	0	5	0	492	YES	NO
CARBON DISULFIDE	1,169	0	0	1,169	0	2,880,233	NO	NO
CARBONYL SULFIDE	668	0	0	668	0	13,667,098	NO	NO
CREOSOTE	467	0	2,646	3,113	17,061	0	NO	YES
CRESOL (MIXED ISOMERS)	0	359	0	359	0	331,741	NO	NO
CUMENE	3,192	5	0	3,197	0	3,318	NO	NO
CYANIDE COMPOUNDS	0	158	0	158	0	15,645	NO	NO
CYCLOHEXANE	1,840	5	0	1,845	0	7,379	YES	NO
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	NO	NO
ETHYLBENZENE	2,082	5	0	2,087	0	51,655	NO	YES
ETHYLENE	1,920	0	0	1,920	0	341,214	NO	NO
HYDROCHLORIC ACID	192	0	0	192	0	123,871	NO	NO
HYDROGEN CYANIDE	1,280	220	0	1,500	0	281,878	NO	NO
HYDROGEN SULFIDE	20,891	0	0	20,891	0	336,299,859	YES	NO
LEAD COMPOUNDS	99	3	0	102	59	0	YES	YES
MERCURY COMPOUNDS	75	2	0	77	2	0	YES	NO
METHANOL	5,462	5	0	5,467	0	38,261	NO	NO
MOLYBDENUM TRIOXIDE	14	0	0	14	0	0	NO	NO
NAPHTHALENE	2,146	147	0	2,293	0	10,493	NO	NO
N-HEXANE	30,085	5	0	30,090	0	62,251	NO	YES
NICKEL	1,342	1,709	0	3,051	36,762	0	NO	NO
NITRATE COMPOUNDS	0	2,631,359	0	2,631,359	0	0	NO	YES
PHENANTHRENE	1	5	0	6	0	43	YES	NO
PHENOL	129	179	0	308	0	302,605	NO	NO
POLYCYCLIC AROMATIC COMPOUNDS	224	4	0	228	0	405	YES	YES
PROPYLENE	8,602	0	0	8,602	0	511,882	NO	NO
STYRENE	13	5	0	18	0	1,366	NO	YES
SULFURIC ACID	257,679	0	0	257,679	0	0	NO	NO
TETRACHLOROETHYLENE	6	0	0	6	0	0	NO	YES
TOLUENE	14,178	5	0	14,183	0	199,695	NO	NO
XYLENE (MIXED ISOMERS)	6,007	5	0	6,012	2	210,448	NO	NO
TOTAL	400,442	2,640,461	2,646	3,043,549	179,454	371,248,130		

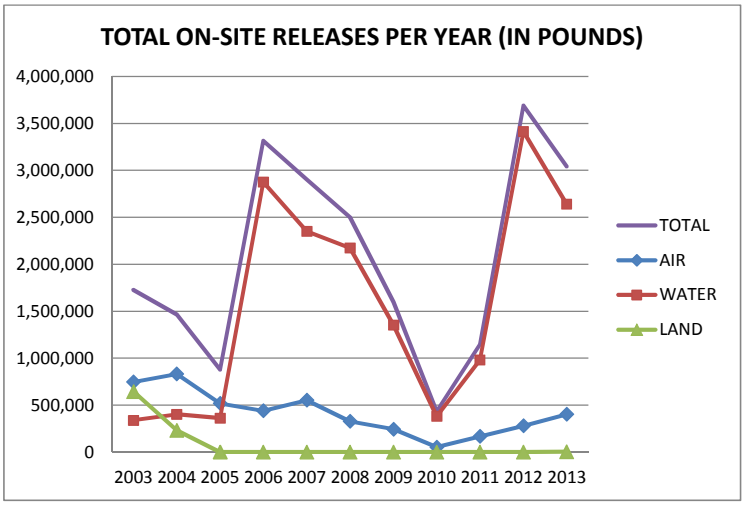
TRI FACILITY PROFILES

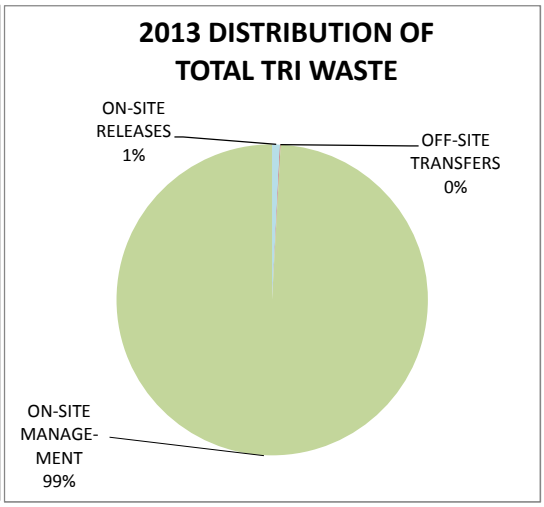
DELAWARE CITY REFINERY, CONT.

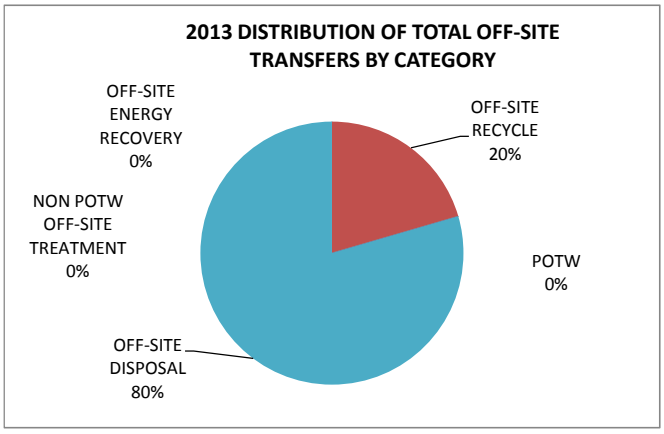
GRAPHICAL INFORMATION:

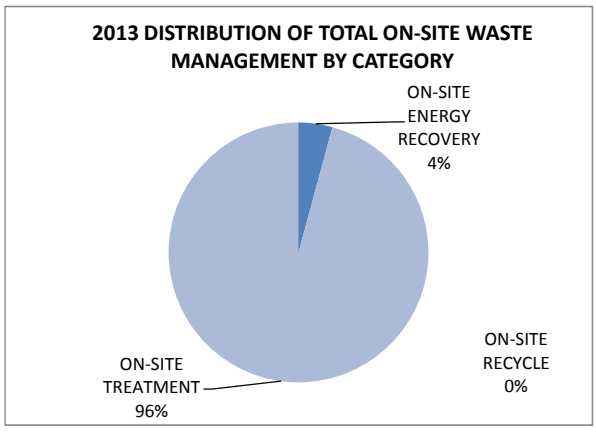










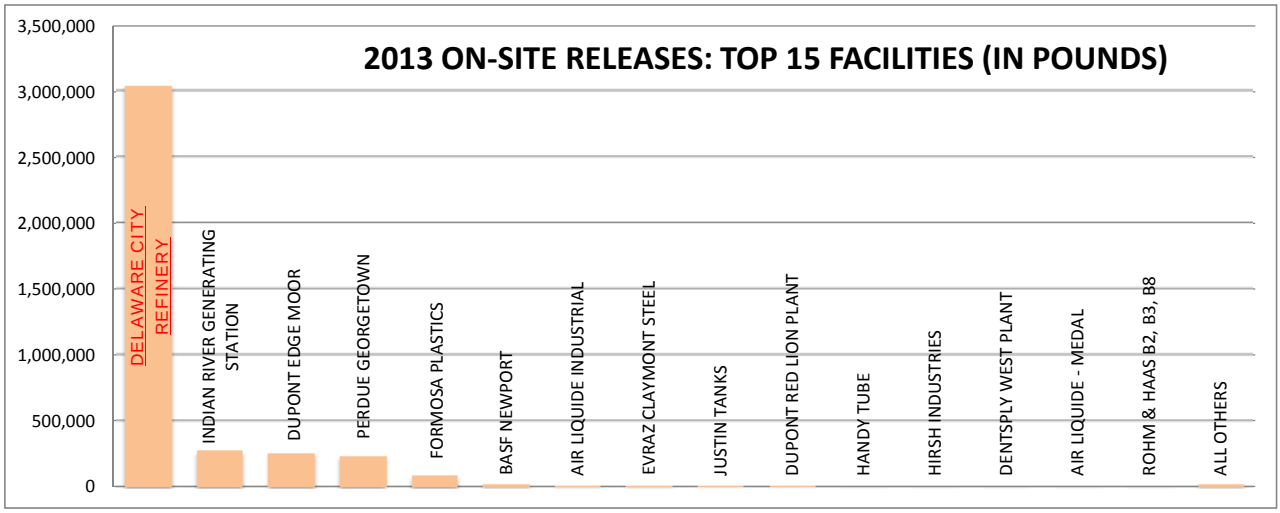


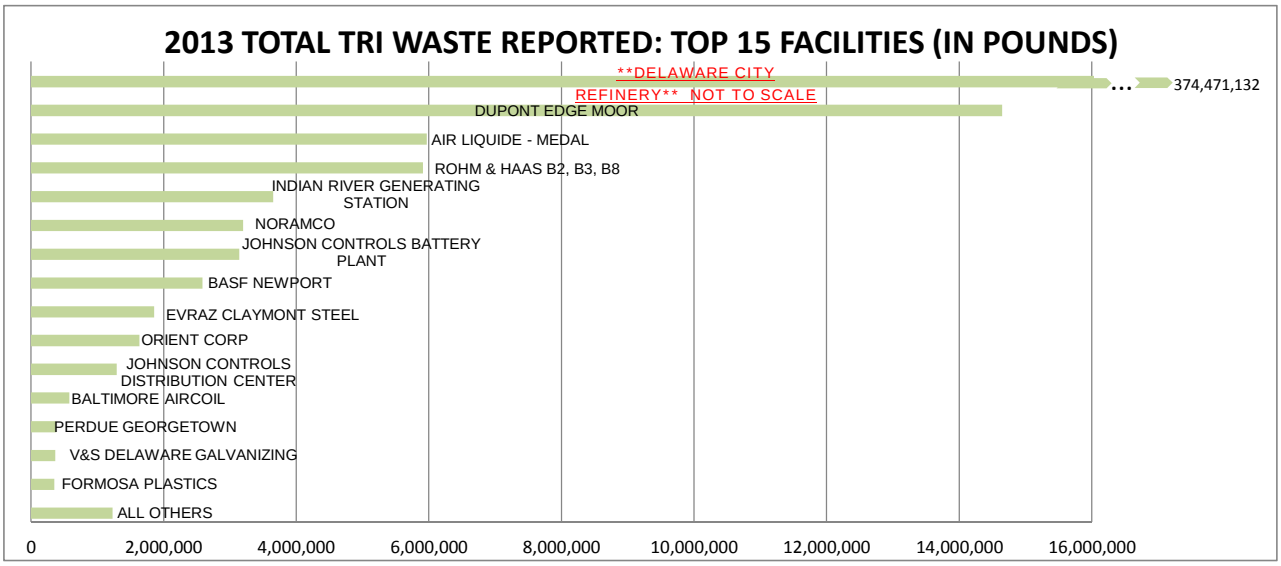
TRI FACILITY PROFILES

TOXICS RELEASE INVENTORY

DELAWARE CITY REFINERY, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE NATIONAL RANKINGS:

Delaware City Refinery ranks 11th in on-site releases to water.

Delaware City Refinery ranks 134th for total on-site releases.

Delaware City Refinery ranks 16th in the nation for on-site releases of nitrate compounds (out of 2,105 facilities).

Delaware City Refinery ranks 1st in the nation for total waste managed and for total on-site treament of hydrogen sulfide (out of 512 facilities).

Delaware City Refinery ranks 89th in on-site releases of sulfuric acid aerosols (out of 763 facilities).

Delaware City Refinery ranks 5th in off-site transfers of asbestos (friable) (out of 35 facilities).

TRI FACILITY PROFILES

DENTSPLY LAKEVIEW

LOCATION/CONTACT:

Address: 38 West Clarke Ave.
Milford, DE 19963

Phone: (302) 422-4511

Contact: Jesse Bautista

FACILITY OVERVIEW:

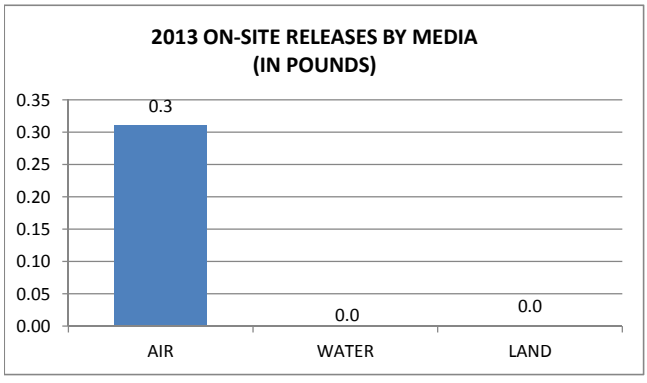
The Dentsply International LLC, Caulk Division (Caulk) produces a line of consumable products for the dental industry. These products include dental adhesives, dental impression materials, and restoratives. These products are used in dental maintenance and restoration applications. Caulk's East Masten Circle facility (Dentsply West) and the West Clarke Avenue facility (Dentsply Lakeview) are located in Milford.

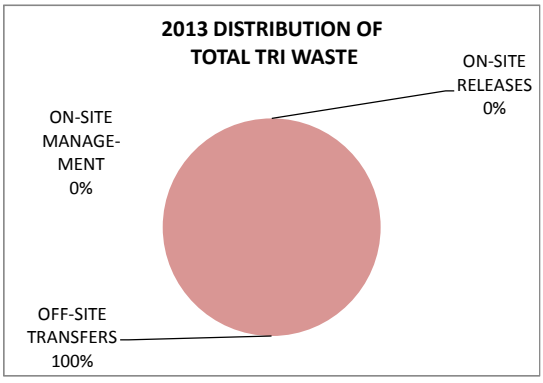
The facility has reported since 1987. For 2013, Dentsply Lakeview reported on one chemical, mercury. Virtually all of their mercury is used in their products or recycled (1,086 pounds recycled), with reported on-site mercury releases to air of 0.31 pounds.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
MERCURY	0.3	0.0	0.0	0	1,086	0	YES	NO
TOTAL	0.3	0.0	0.0	0	1,086	0		

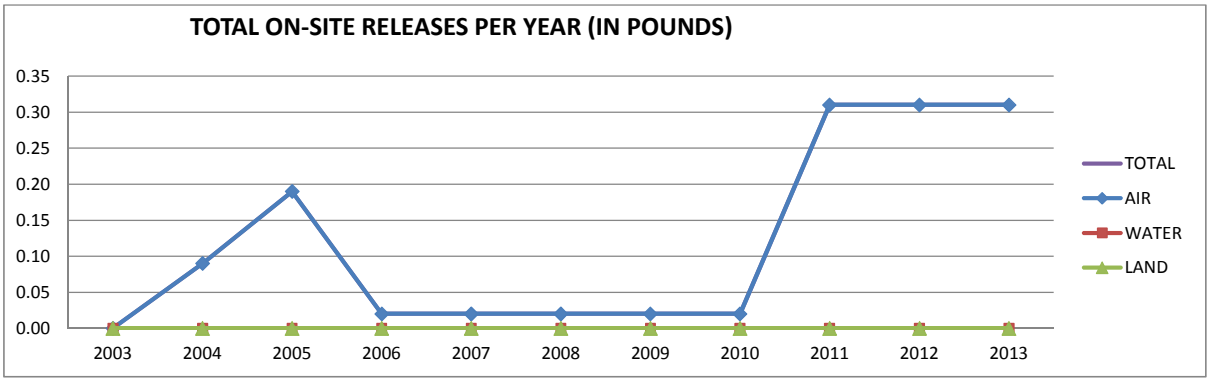
GRAPHICAL INFORMATION:

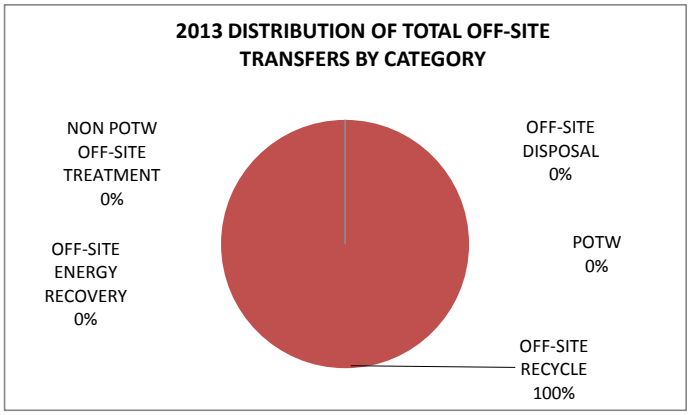




TRI FACILITY PROFILES

DENTSPLY LAKEVIEW, CONT.





COMPARISON TO OTHER DELAWARE TRI FACILITIES:

Dentsply Lakeview ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.

Dentsply Lakeview ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

Dentsply Lakeview ranks 16th in the nation for off-site transfers of mercury (out of 463 facilities).

TRI FACILITY PROFILES

DENTSPLY WEST

LOCATION/CONTACT:

Address: 779 E Masten Circle
Milford, DE 19963

Phone: (302) 422-4511

Contact: Jesse Bautista

FACILITY OVERVIEW:

The Dentsply International LLC, Caulk Division (Caulk) produces a line of consumable products for the dental industry. These products include dental adhesives, dental impression materials, and restoratives. These products are used in dental maintenance and restoration applications. Caulk's East Masten Circle facility (Dentsply West) and the West Clarke Avenue facility (Dentsply Main) are located in Milford.

The facility has reported since 1987. Dentsply West reported three TRI chemicals for 2013, methanol, methyl methacrylate (MMA), and toluene. Methanol is used as a processing aid in the manufacture of polymethacrylates. Methyl methacrylate (MMA) is also used in the manufacture of polymethacrylates. Toluene is used for cleaning. All on-site releases were reported as released to air.

Reported on-site releases have increased significantly since 2004 because of increased production, addition of new equipment, and more accurate reporting methods. In 2005, the facility reported significant increases in on-site releases for toluene and MMA, and the facility reported on-site release of methanol in 2005 for the first time since 2002. This facility did not submit any TRI reports for 2003. For 2013, on-site releases increased 17%, with production increasing 21% (see *Total On-site Releases Per Year Graph* on the next page).

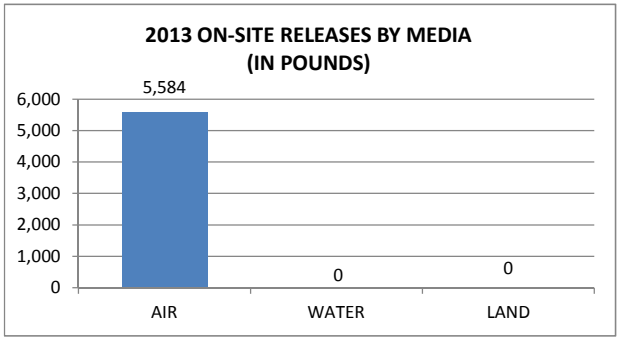
2013 TRI DATA (REPORTED IN POUNDS):

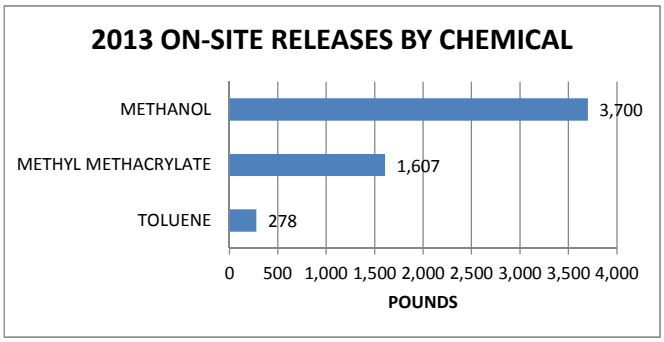
	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
METHANOL	3,700	0	0	3,700	7,932	0	NO	NO
METHYL METHACRYLATE	1,607	0	0	1,607	68	0	NO	NO
TOLUENE	278	0	0	278	15,244	0	NO	NO
TOTAL	5,584	0	0	5,584	23,245	0		

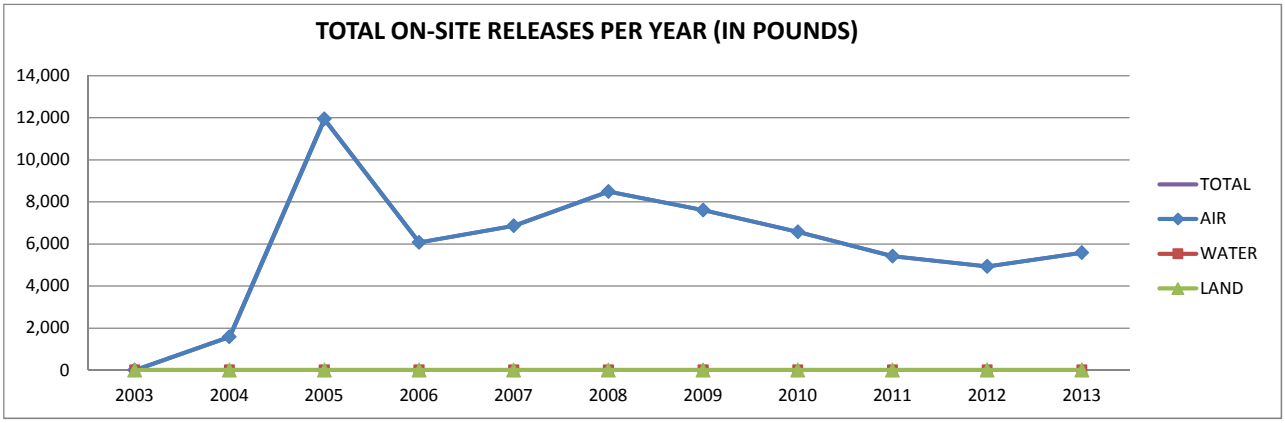
TRI FACILITY PROFILES

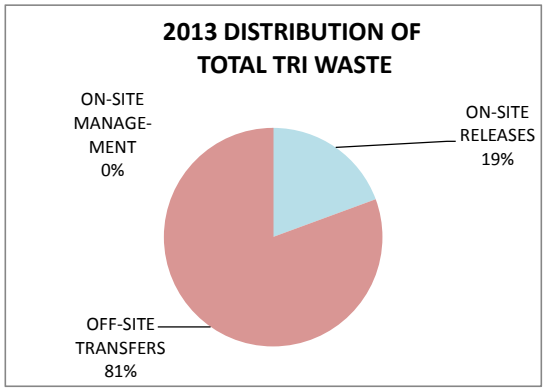
DENTSPLY WEST, CONT.

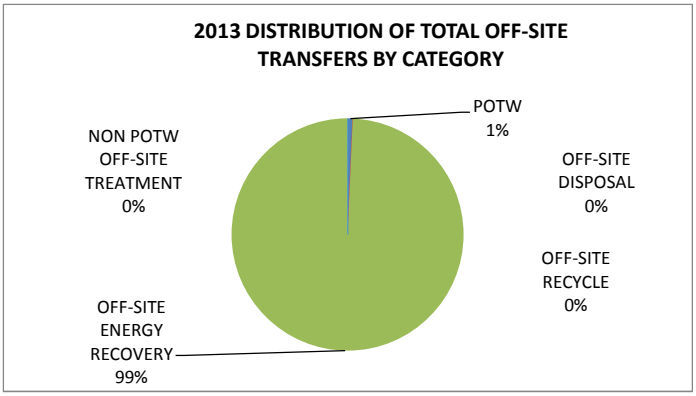
GRAPHICAL INFORMATION:







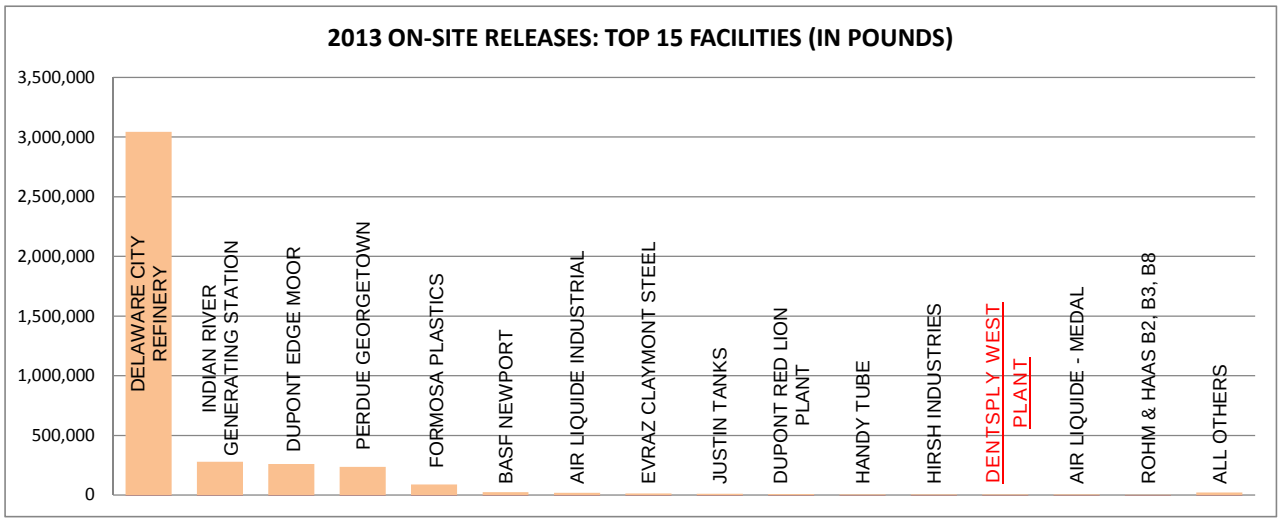


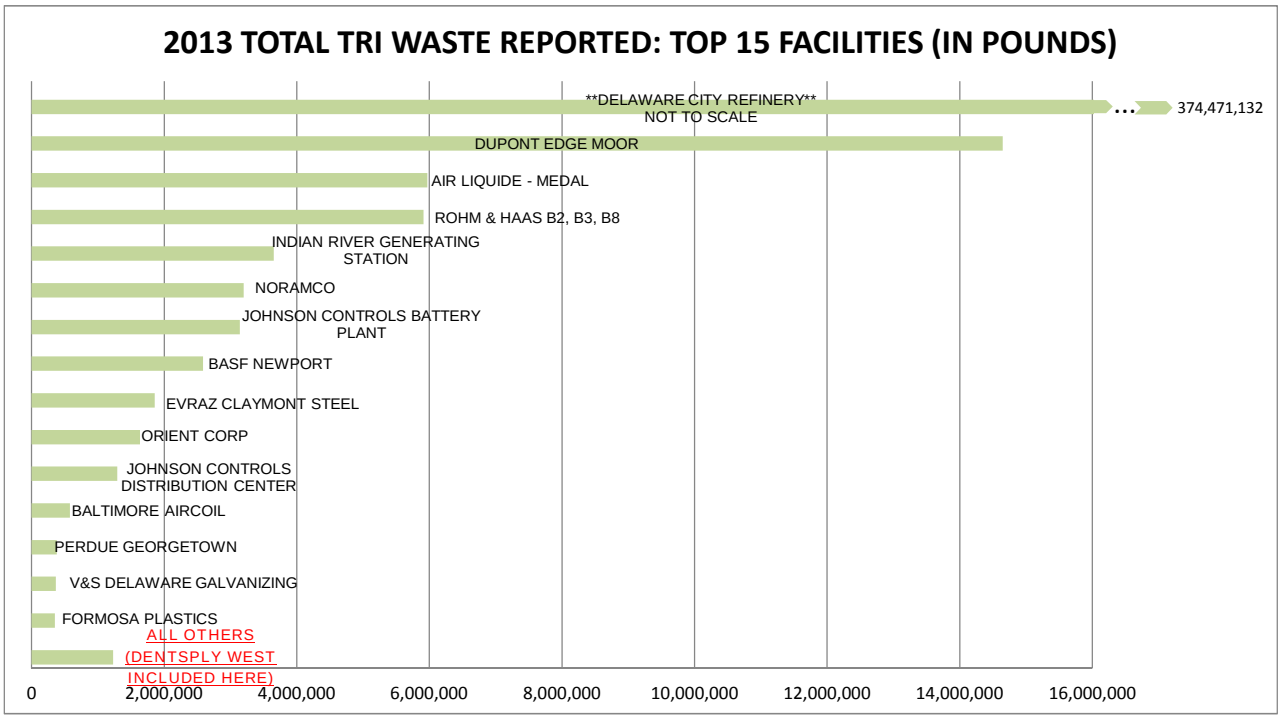


TRI FACILITY PROFILES

DENTSPLY WEST, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Dentsply West ranks 53rd in the nation total on-site releases for miscellanous manufacturing facilities (NAICS 339) (out of 342 facilities).

TRI FACILITY PROFILES

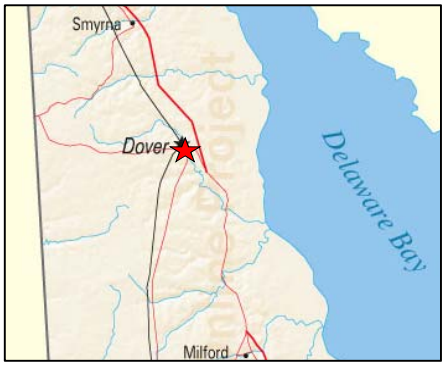
DOVER AIR FORCE BASE

LOCATION/CONTACT:

Address: 436 CES/CC 600 Chevron Ave.
Dover Air Force Base, DE 19902

Phone: (302) 677-3370

Contact: Jennifer Vallee



FACILITY OVERVIEW:

The Dover Air Force Base (DAFB) is a military installation that falls under the federal facility reporting requirements. DAFB is home to the 436th Airlift Wing, commonly known as the "Eagle Wing" and the 512th Airlift Wing, the Reserve associate, as the "Liberty Wing." Dover houses the C-5 Galaxy and C-17 Globemaster III, large transport military aircraft. Team Dover's mission focus is to safely fix and fly aircraft, prepare and deploy Airmen, move cargo, and return America's fallen heroes with dignity, honor and respect.

Dover Air Force Base (DAFB) has reported to TRI since 2001. For 2013, the facility reported on five chemicals, with all on-site releases being made to air. These chemicals are the by-product of jet fuel being used on DAFB. The reported TRI data is from the fuel utilized by transient aircraft stopping at DAFB, and the depot level maintenance taking place at the Jet Engine Test Cell. Transient vehicles include only vehicles stopping at the installation for fuel or rest, and that have no assigned mission at the facility. Vehicles with an assigned mission at the base fall under the motor-vehicle reporting exemption. On-site releases to air are down by 47% compared to 2012.

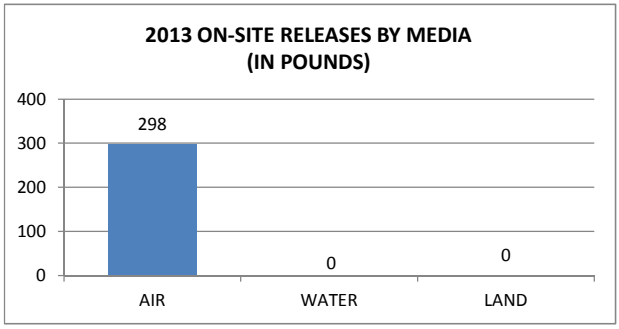
2013 TRI DATA (REPORTED IN POUNDS):

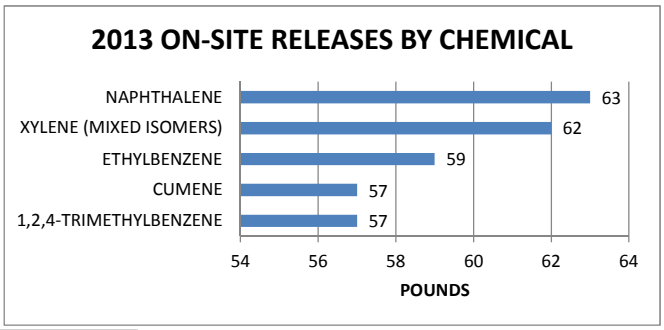
CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
1,2,4-TRIMETHYLBENZENE	57	0	0	57	0	0	NO	NO
CUMENE	57	0	0	57	0	0	NO	NO
ETHYLBENZENE	59	0	0	59	0	0	NO	YES
NAPHTHALENE	63	0	0	63	0	0	NO	YES
XYLENE (MIXED ISOMERS)	62	0	0	62	0	0	NO	NO
TOTAL	298	0	0	298	0	0		

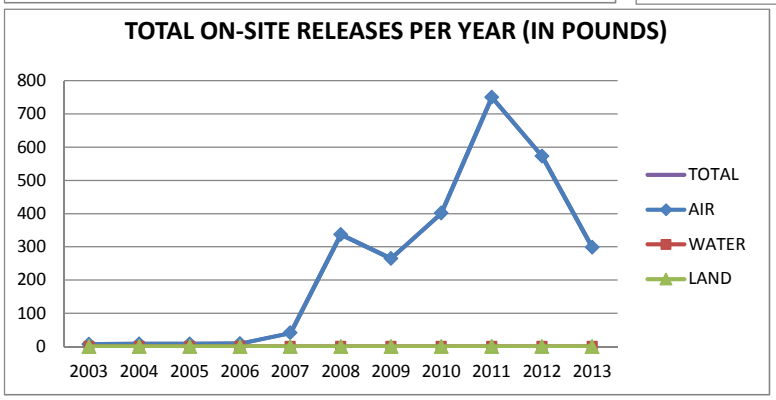
TRI FACILITY PROFILES

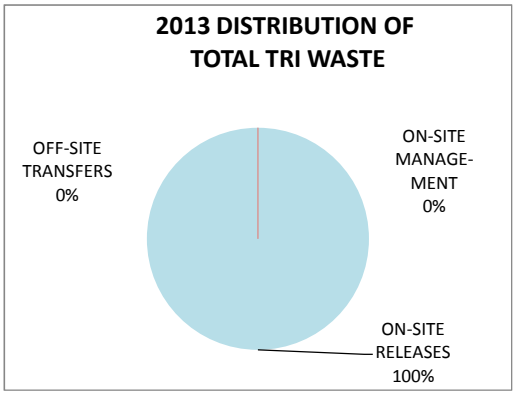
DOVER AIR FORCE BASE, CONT.

GRAPHICAL INFORMATION:

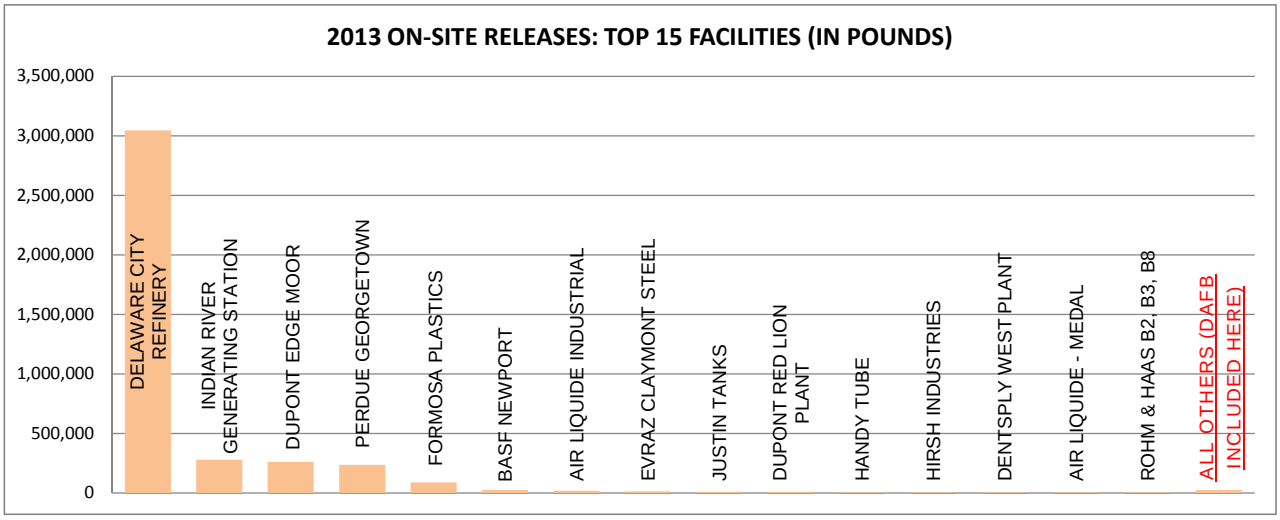








COMPARISON TO OTHER DELAWARE TRI FACILITIES:



Dover Air Force Base ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

TRI FACILITY PROFILES

DUHADAWAY TOOL AND DIE

LOCATION/CONTACT:

Address: 801 Dawson Drive
Newark, DE 19713

Phone: (302) 366-0113

Contact: John O'Donnell

FACILITY OVERVIEW:

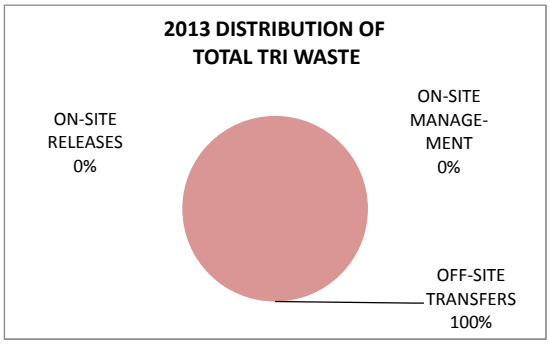
DuHadaway Tool and Die Shop produces precision crafted parts and assemblies for global power generation, automotive, military, and aerospace industries. The facility provides precision machining with the use of horizontal and vertical boring mills, machining centers, lathes, turning centers, electrical discharge machining (EDM), and welding stations.

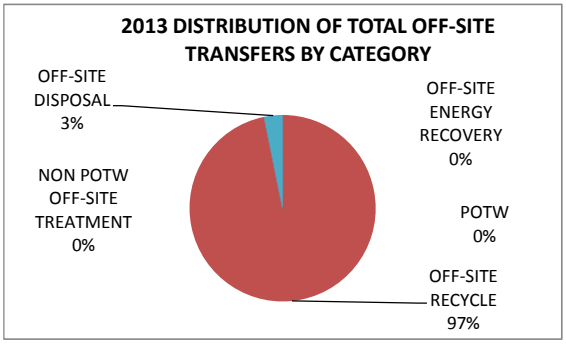
DuHadaway Tool and Die first filed a TRI report for the 2009 reporting year. The facility was below the reporting thresholds in 2010 and 2011. For 2013, the facility reported on two chemicals, chromium and nickel, with all waste being transferred off-site. Chromium and nickel are present in varying levels in the metals that are used to manufacture parts. The scrap and metal shavings that are the result of the manufacturing process are shipped off-site for recycling.

2013 TRI DATA (REPORTED IN POUNDS):

	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
CHROMIUM	0	0	0	0	10,303	0	NO	NO
NICKEL	0	0	0	0	7,349	0	NO	YES
TOTAL	0	0	0	0	17,652	0		

GRAPHICAL INFORMATION:

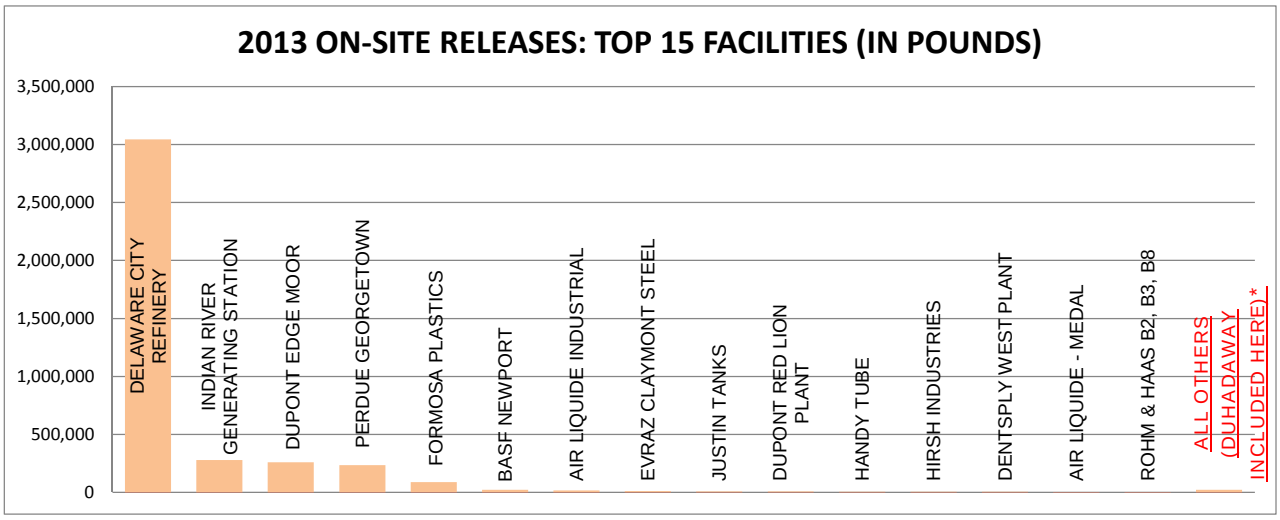




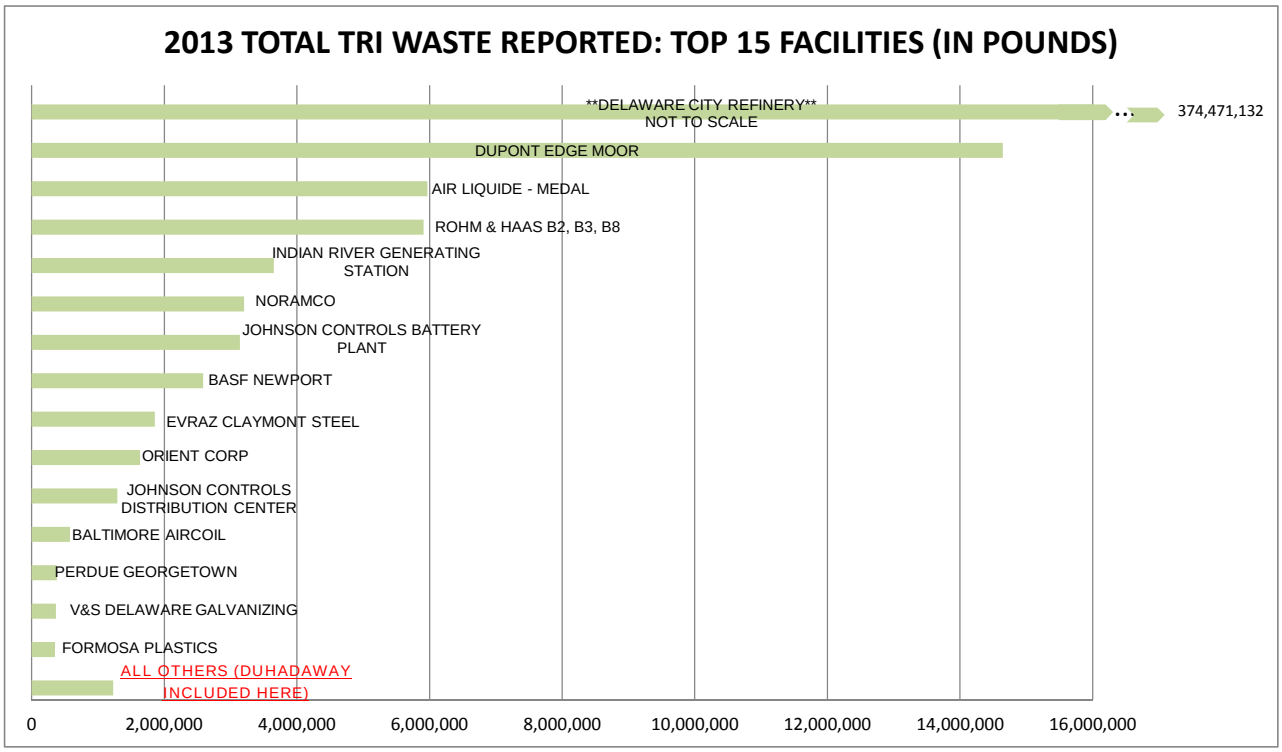
TRI FACILITY PROFILES

DUHADAWAY TOOL AND DIE, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:



*Duhadaway Tool and Die ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site. Comparisons only include facilities reporting on Form R.



TRI FACILITY PROFILES

DUPONT EDGE MOOR

LOCATION/CONTACT:

Address: 104 Hay Road
Edgemoor, DE 19809

Phone: (716) 879-1846

Contact: Peter Ciotta

FACILITY OVERVIEW:

DuPont Edge Moor is one of three domestic DuPont facilities that manufacture titanium dioxide, a white pigment that is used in the paint and paper industries. The facility also produces titanium tetrachloride and ferric chloride.

The facility has reported since 1987. For 2013, DuPont Edge Moor reported on 22 TRI chemicals. Carbonyl Sulfide alone accounted for 89% of the total onsite releases for 2013. Carbonyl sulfide is a gas by-product of the titanium dioxide production process, and is produced from the use of sulfur-bearing coke in the process of manufacturing the titanium dioxide from titanium-rich ores. Manganese compounds accounted for 5% of the total on-site releases. Annual releases of manganese compounds can fluctuate with the sources of raw materials the site utilizes. Carbonyl Sulfide (97.2%), hydrochloric acid aerosol (1.9%) and chlorine (0.8%) account for 99.8% of the total on-site releases to air for 2013. Hydrochloric acid is formed as a gas by-product of the titanium dioxide production process and chlorine is utilized as a raw material to manufacture titanium dioxide.

Since 2001, DuPont Edge Moor has reduced dioxin generation by 99% by implementing a capital project and by making process modifications. Over 98.98% (525.37 grams out of 530.75 grams generated) of the dioxins generated are contained within the solid material sent off-site. The remaining 1.02% of dioxins were released on-site to water and air. The on-site releases of Dioxin and Dioxin Like compounds (DLCs 5.39 grams) increased by 4.22 grams in 2013 compared to 2012. This was primarily due to an increase in the releases to water. The DLC in water can change based on process parameters. The dioxins released to water were calculated based on sampling analysis completed as required by the NPDES permit. The majority (93%) of the DLCs released to water reported by DuPont Edge Moor is either a dioxin or furan of the lowest toxicity level.

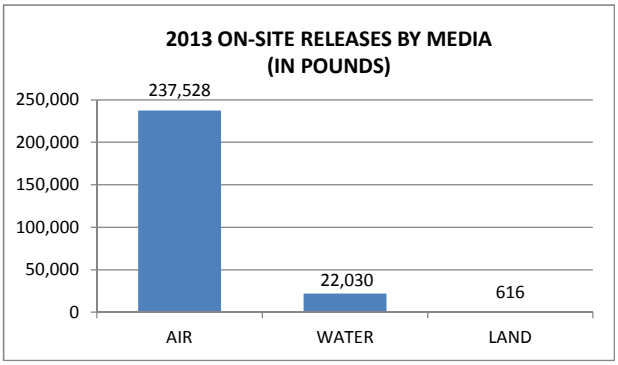
TRI FACILITY PROFILES

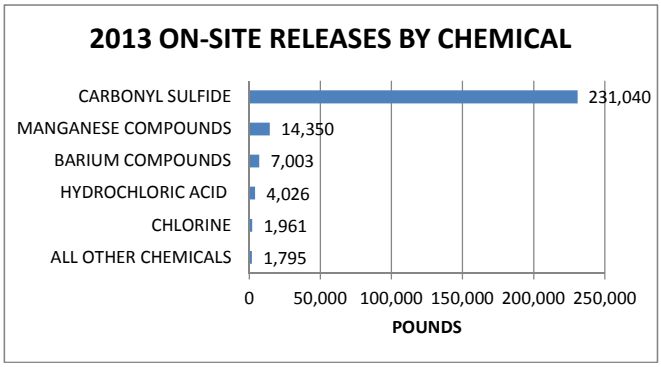
DUPONT EDGE MOOR, CONT.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
ARSENIC COMPOUNDS	0	131	0	131	1,025	0	NO	YES
BARIUM COMPOUNDS	1	7,001	0	7,003	8,758	0	NO	NO
CARBONYL SULFIDE	231,040	0	0	231,040	0	0	NO	NO
CHLORINE	1,961	0	0	1,961	0	969,939	NO	NO
CHROMIUM COMPOUNDS	0	18	0	19	179,148	0	NO	YES
COBALT COMPOUNDS	0	4	0	4	3,099	0	NO	YES
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	1	0	YES	NO
HEXACHLOROBENZENE	0	1	0	1	197	0	YES	YES
HYDROCHLORIC ACID	4,026	0	0	4,026	0	11,027,384	NO	NO
LEAD COMPOUNDS	0	84	0	84	8,594	0	YES	YES
MANGANESE COMPOUNDS	1	14,349	0	14,350	759,187	0	NO	NO
MERCURY COMPOUNDS	1	0	0	1	1	0	YES	NO
NICKEL COMPOUNDS	1	246	0	247	9,156	0	NO	YES
OCTACHLOROSTYRENE	0	0	0	0	4	0	YES	NO
PENTACHLOROBENZENE	0	0	0	0	8	0	YES	NO
PHOSGENE	301	0	0	301	0	165,815	NO	NO
POLYCHLORINATED BIPHENYLS	0	0	0	0	4	0	YES	YES
POLYCYCLIC AROMATIC COMPOUNDS	69	0	616	685	0	0	YES	YES
TITANIUM TETRACHLORIDE	39	0	0	39	0	1,104,310	NO	NO
TOLUENE	78	0	0	78	0	0	NO	NO
VANADIUM COMPOUNDS	1	110	0	111	135,665	0	NO	NO
ZINC COMPOUNDS	9	86	0	95	14,374	0	NO	NO
TOTAL	237,528	22,030	616	260,174	1,119,221	13,267,448		

GRAPHICAL INFORMATION:

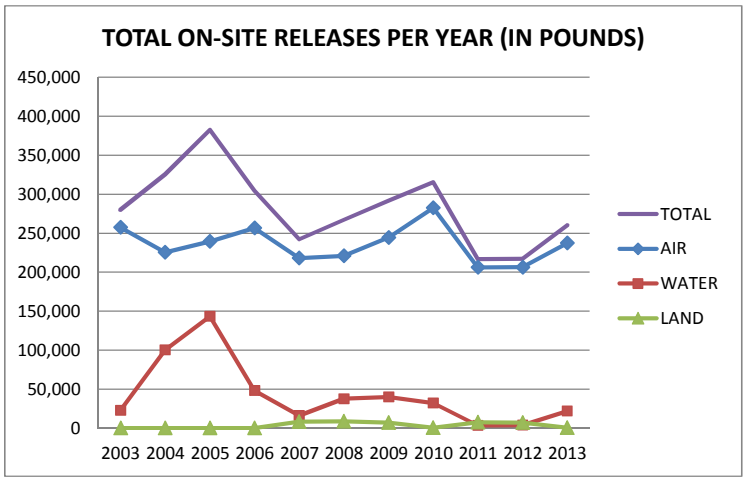


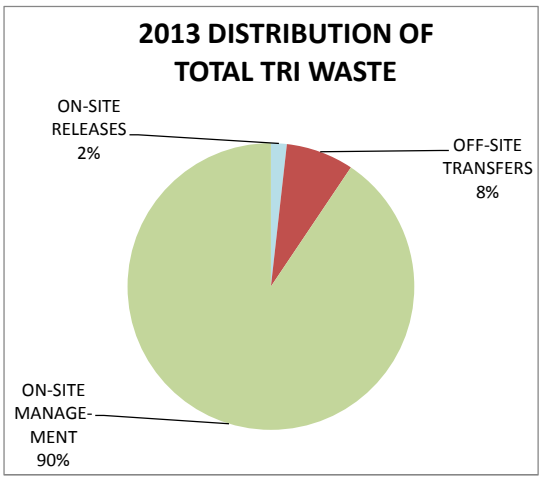


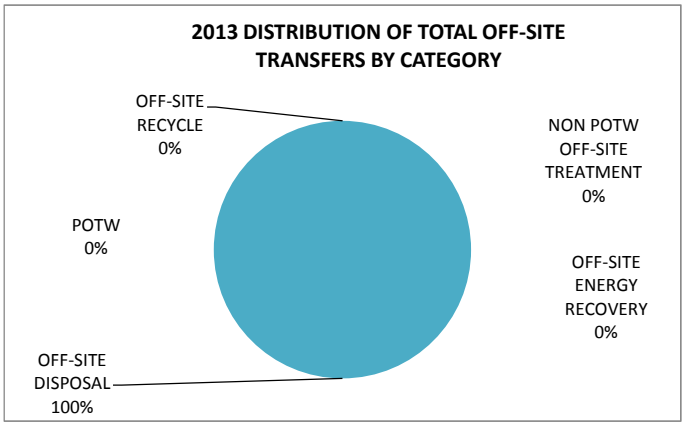
TRI FACILITY PROFILES

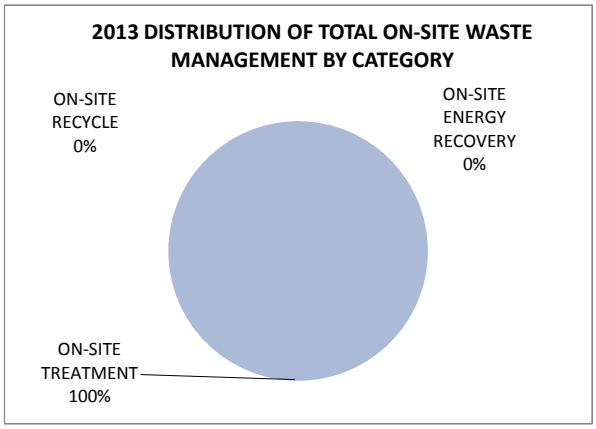
DUPONT EDGE MOOR, CONT.

GRAPHICAL INFORMATION CONT.:

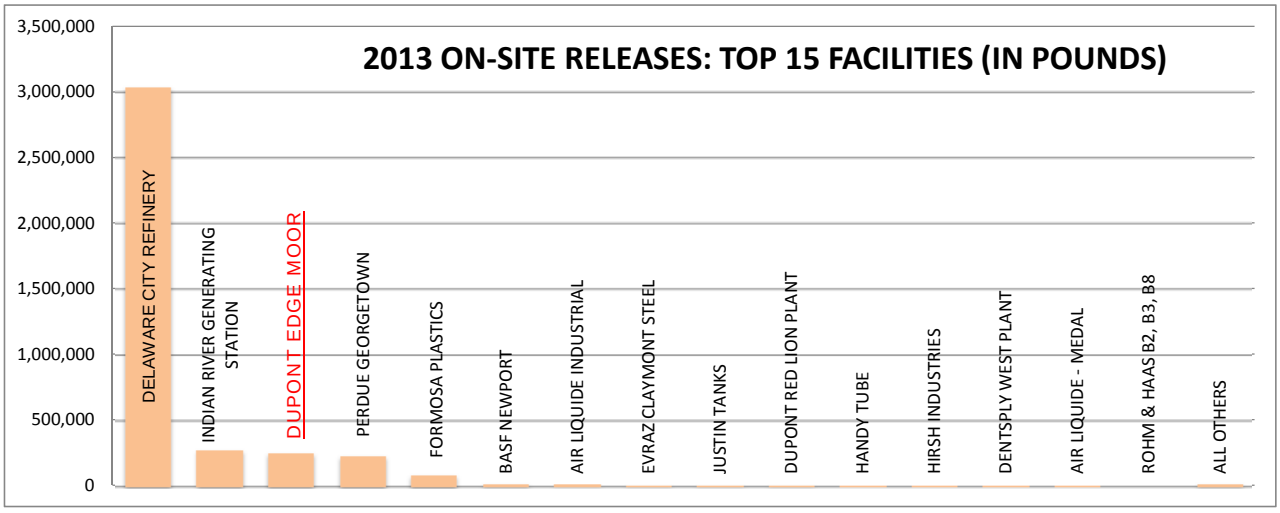








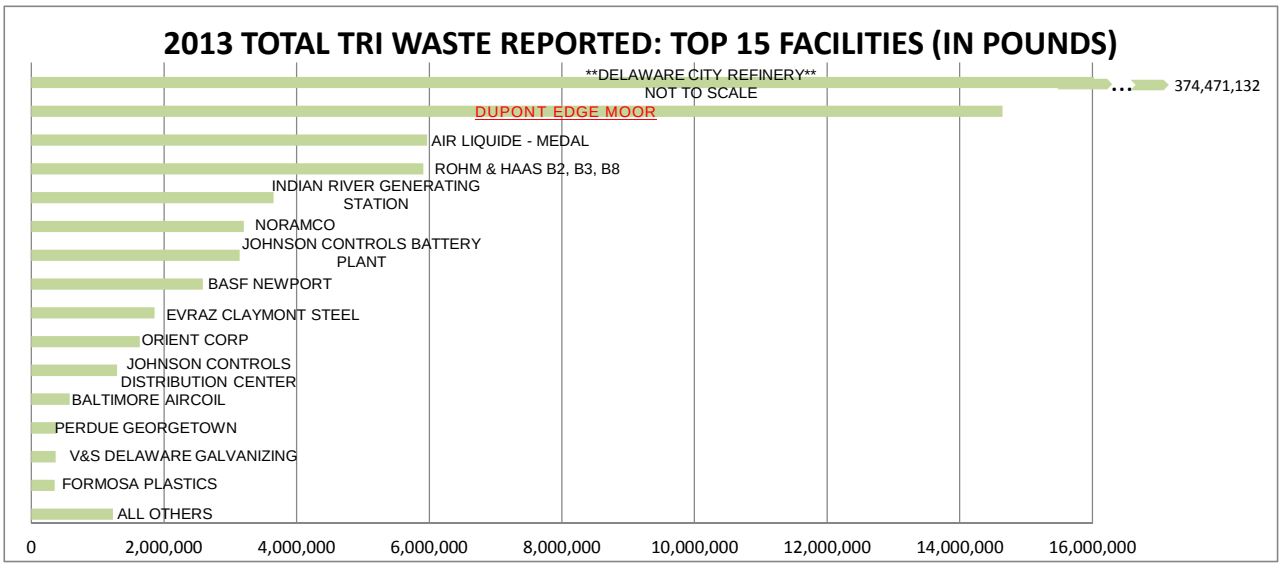
COMPARISON TO OTHER DELAWARE TRI FACILITIES:



TRI FACILITY PROFILES

DUPONT EDGE MOOR, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES CONT.:



NOTABLE 2013 NATIONAL RANKINGS:

DuPont Edge Moor ranks 14th in the nation for on-site release of carbonyl sulfide (out of 135 facilities).

DuPont Edge Moor ranks 16th in the nation for on-site treatment of hydrochloric acid aerosols (out of 1,107 facilities).

DuPont Edge Moor ranks 9th in the nation for on-site treatment of titanium tetrachloride (out of 33 facilities).

TRI FACILITY PROFILES

DUPONT RED LION

LOCATION/CONTACT:

Address: 766 Governor Lea Road
Delaware City, DE 19706

Phone: (302) 999-6493

Contact: Kristin Cecil

FACILITY OVERVIEW:

DuPont Red Lion, located north of the Delaware City Refinery(DCR), manufactures sulfuric acid derived from refinery gas received from DCR and spent sulfuric acid received from DCR and other refineries. The refinery gas is received by pipeline. Spent sulfuric acid and fresh sulfuric acid are shipped to and from the DuPont facility via pipeline, tank trucks and tank cars.

DuPont Red Lion has reported since 2005. The facility reported on four chemicals in 2013, hydrazine, hydrazine sulfate, hydrogen sulfide, and sulfuric acid. Hydrogen sulfide is used in the manufacturing process as a raw material. Hydrazine hydrate and hydrazine sulfate are used as process treatment chemicals.

All on-site releases were to air. For 2010, while the Delaware City Refinery was idle, the DuPont Red Lion facility was also idled and was below the TRI reporting threshold for sulfuric acid and was not required to report. The DuPont Red Lion facility re-started its operations in May of 2011 after an 18 month shutdown. In 2012, the DuPont facility was operational at more typical production rates for the entire year as compared to 7 months in 2011. For 2013, on-site releases increased slightly corresponding with an increase in production of 16% (see *Total On-site Releases Per Year Graph* on the next page).

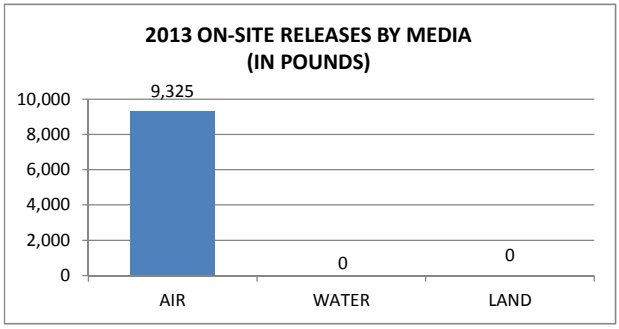
2013 TRI DATA (REPORTED IN POUNDS):

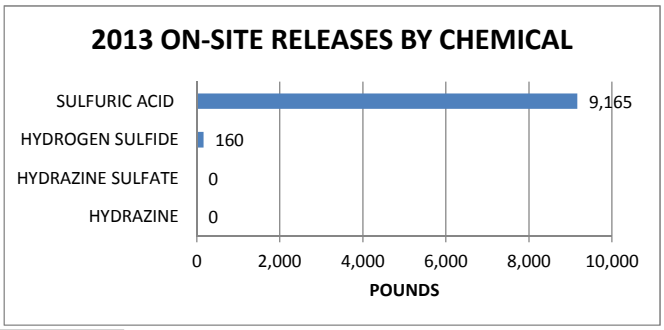
	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
HYDRAZINE	0	0	0	0	0	0	NO	YES
HYDRAZINE SULFATE	0	0	0	0	0	0	NO	YES
HYDROGEN SULFIDE	160	0	0	160	0	0	NO	NO
SULFURIC ACID	9,165	0	0	9,165	0	0	NO	NO
TOTAL	9,325	0	0	9,325	0	0		

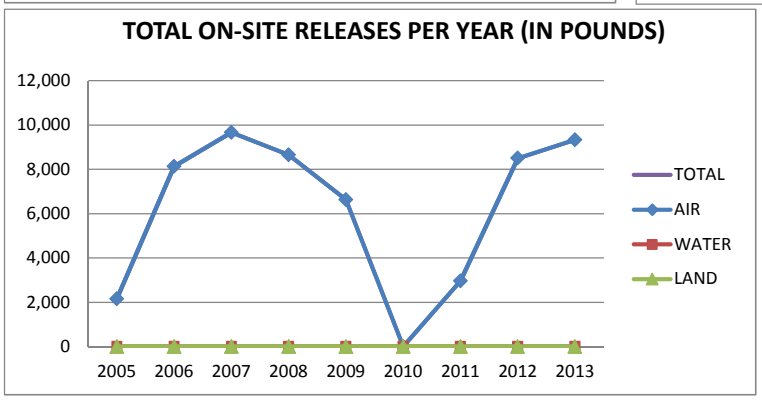
TRI FACILITY PROFILES

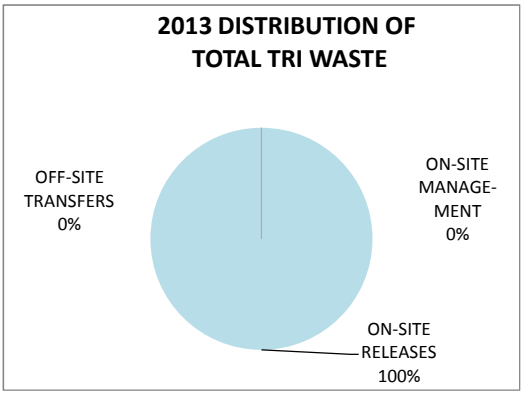
DUPONT RED LION, CONT.

GRAPHICAL INFORMATION:

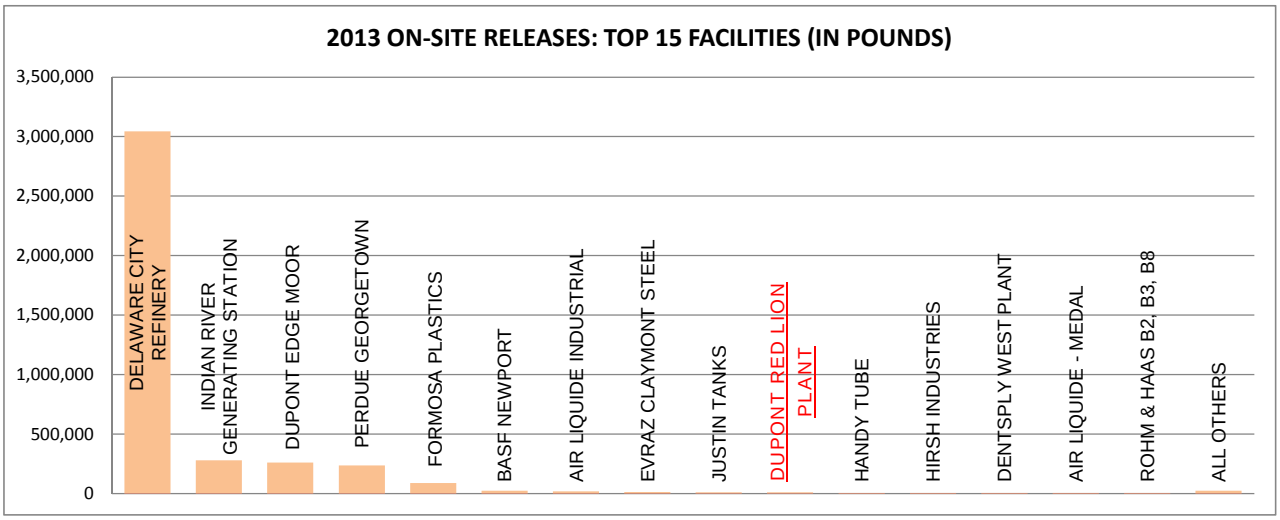








COMPARISON TO OTHER DELAWARE TRI FACILITIES



Dupont Red Lion ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE NATIONAL RANKINGS

Dupont Edge Moor ranks 51st in the nation for on-site releases of sulfuric acid aerosol for for chemical facilities (NAICS 325) (out of 112 facilities).

TRI FACILITY PROFILES

EDGE MOOR/HAY ROAD ENERGY CENTERS

LOCATION/CONTACT:

Address: 200 Hay Road
Wilmington, DE 19809

Phone: (713) 830-8833

Contact: Norma Dunn

FACILITY OVERVIEW:

The Calpine Edge Moor/Hay Road facilities are located along the Delaware River a mile north of the Port of Wilmington and produce electricity. Pepco Holdings, Inc. (PHI) sold the generation assets owned by Conectiv Energy to Calpine Corporation in 2010. Based in Houston, Texas, Calpine Corporation is an electricity generating company and converted the Edge Moor, DE and Deepwater, NJ plants to burning natural gas exclusively. All coal combustion was discontinued in 2010. The ceasing of burning coal, has significantly reduced releases on-site made by the facility.

For 2013, the facility reported on 4 chemicals, ammonia, mercury, polycyclic aromatic compounds (PACs) and dioxin and dioxin like compounds (DLCs), with the on-site releases only to air. All the chemicals released except ammonia are formed as by-products during combustion process due to impurities in the fuel. Ammonia is utilized at the facilities for pollution control.

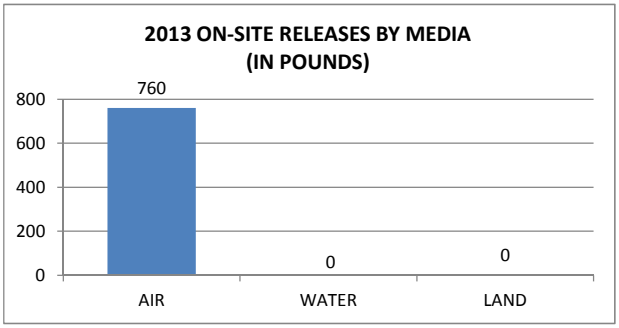
2013 TRI DATA (REPORTED IN POUNDS):

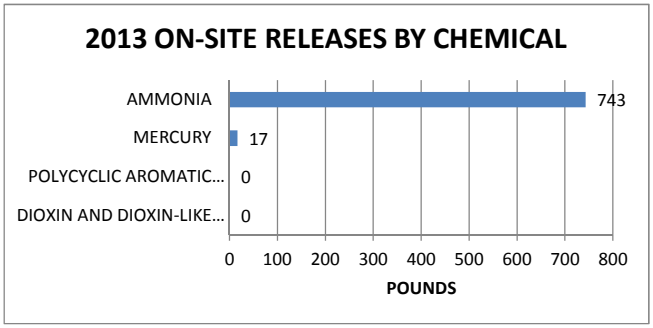
	ON-SITE RELEASES				OFF-SITE	ON-SITE		
CHEMICAL	AIR	WATER	LAND	TOTAL	TRANSFERS	MANAGEMENT	PBT	CARCINOGEN
AMMONIA	743	0	0	743	30	0	NO	NO
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	YES	NO
MERCURY	17	0	0	17	0	0	YES	NO
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	0	YES	YES
TOTAL	760	0	0	760	30	0		

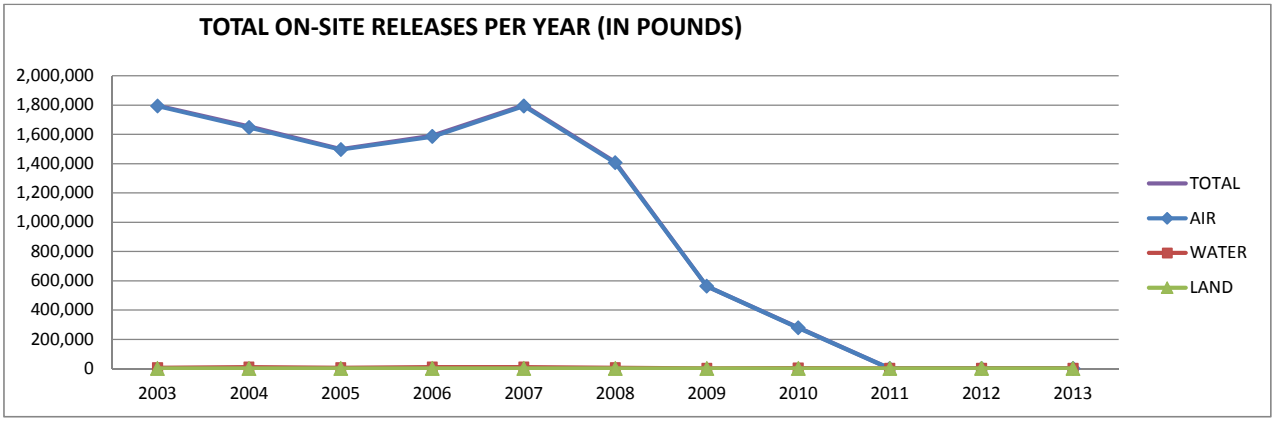
TRI FACILITY PROFILES

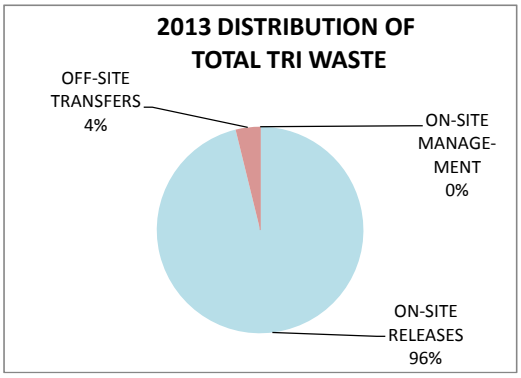
EDGE MOOR/HAY ROAD ENERGY CENTERS, CONT.

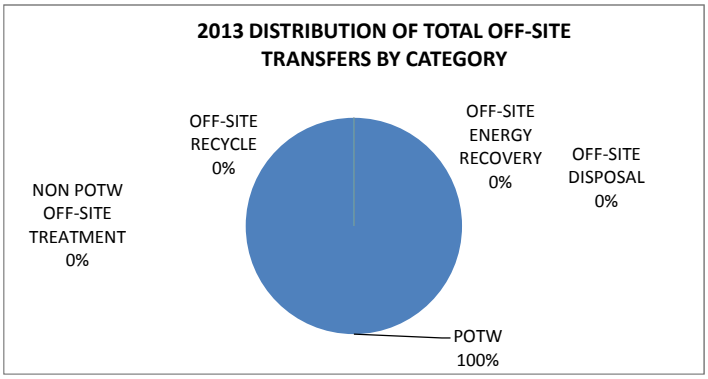
GRAPHICAL INFORMATION:







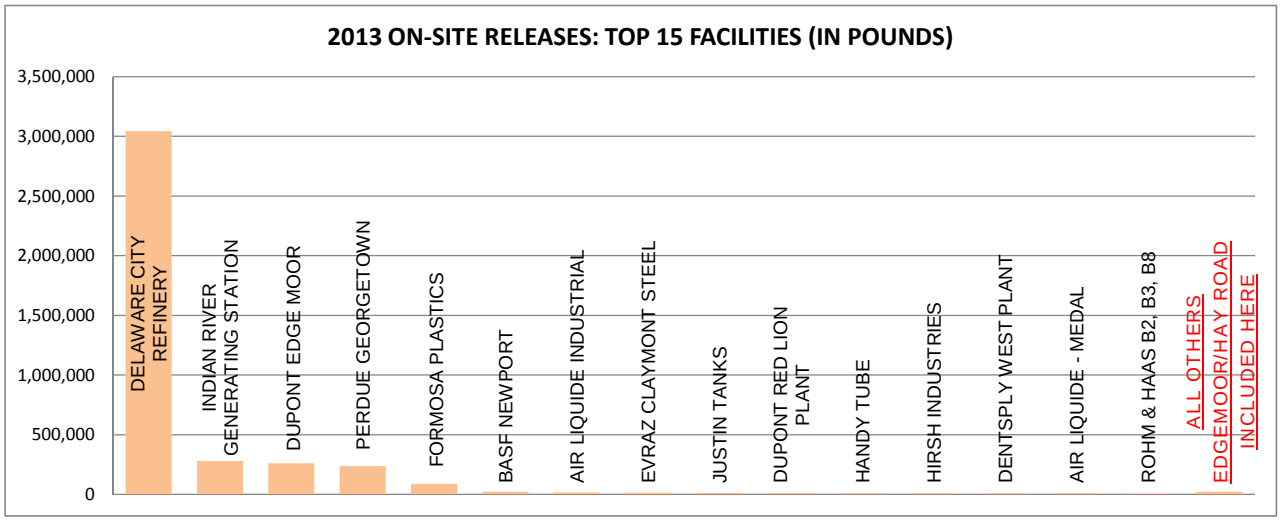




TRI FACILITY PROFILES

EDGE MOOR/HAY ROAD ENERGY CENTERS,

COMPARISON TO OTHER DELAWARE TRI FACILITIES:



Edge Moor/Hay Road Energy Center ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

Edge Moor-Hay Road Energy Centers ranks 26 for on-site releases of mercury from electric utility facilities (NAICS code 2211) (out of 39 facilities).

TRI FACILITY PROFILES

EVRAZ CLAYMONT

LOCATION/CONTACT:

Address: 4001 Philadelphia Pike
Claymont, DE 19703

Phone: (302)-792-5400

Contact: Tomasz Wesolowski

FACILITY OVERVIEW:

Evraz Claymont Steel (ECS) manufactures high strength low alloy carbon steel plate for heavy construction and industrial applications. The facility purchases and recycles up to 500,000 tons of scrap steel annually and melts it in an electric arc furnace making this facility the largest metal recycler in the state of Delaware. The melted steel is cast into large slabs which are rolled into plates of thicknesses from 1/4" to 5-1/2". The plates are sold throughout North America.

ECS has reported since 1989, previously as CitiSteel. For 2013, ECS reported on-site releases of eight TRI chemicals; seven metallic compounds and dioxin compounds, for 2013. The majority of waste is shipped off- site for recycling and most of the on-site releases were to land.

A consent decree was entered into between DNREC and ECS in 2010 requiring ECS to maintain its participation in the mercury pollution prevention program. Also, the consent decree required the upgrades to the Air pollution Control System (installation of additional baghouse capacity) to minimize air pollutants release by capturing and collecting air pollutants (dust) from certain operations in the melt shop area, including the electric arc furnace, stir station, and ladle reheat operation. This work was completed in 2013.

The plant ceased operations at the end of 2013.

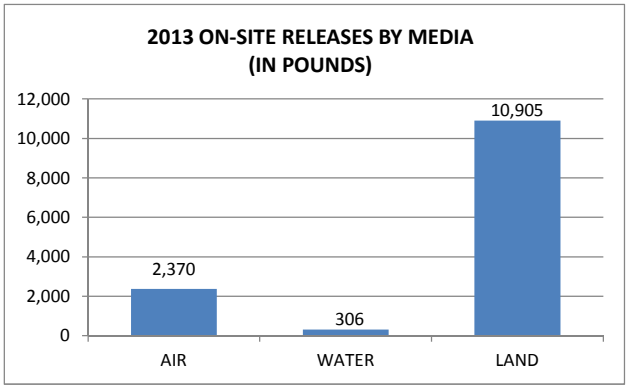
2013 TRI DATA (REPORTED IN POUNDS):

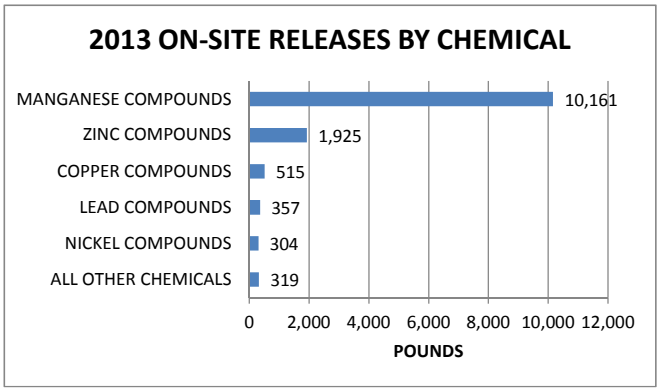
	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
CHROMIUM COMPOUNDS	76	3	147	226	20,170	0	NO	NO
COPPER COMPOUNDS	93	53	369	515	24,038	0	NO	NO
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	NO	NO
LEAD COMPOUNDS	250	54	53	357	112,603	0	NO	NO
MANGANESE COMPOUNDS	293	15	9,853	10,161	192,775	0	NO	NO
MERCURY COMPOUNDS	93	0	0	93	2	0	NO	NO
NICKEL COMPOUNDS	20	20	264	304	3,448	0	NO	NO
ZINC COMPOUNDS	1,545	161	219	1,925	1,489,573	0	NO	YES
TOTAL	2,370	306	10,905	13,581	1,842,609	0		

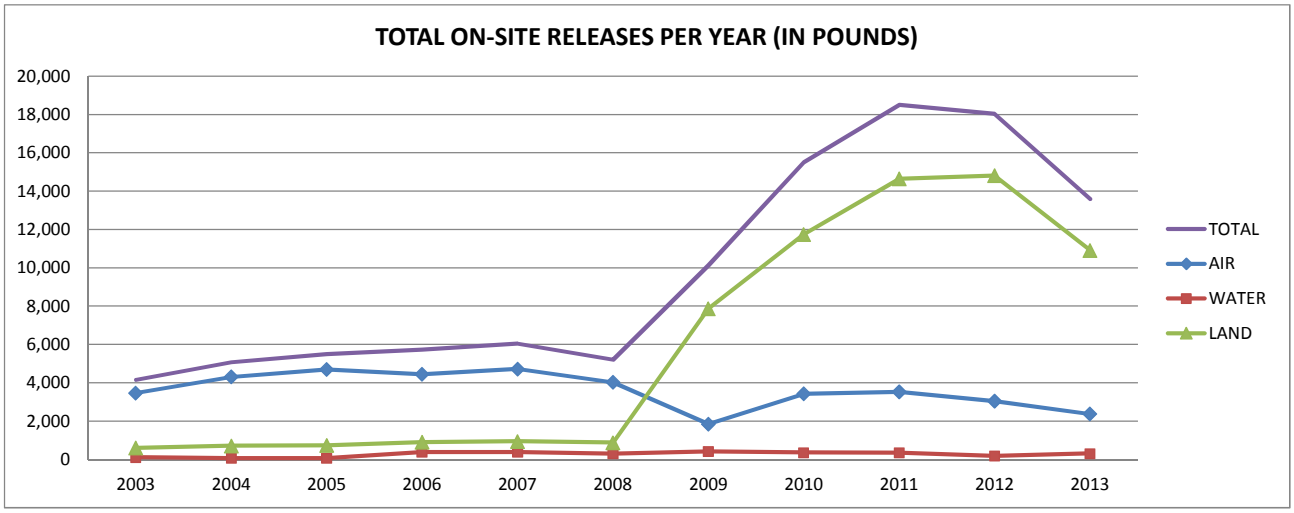
TRI FACILITY PROFILES

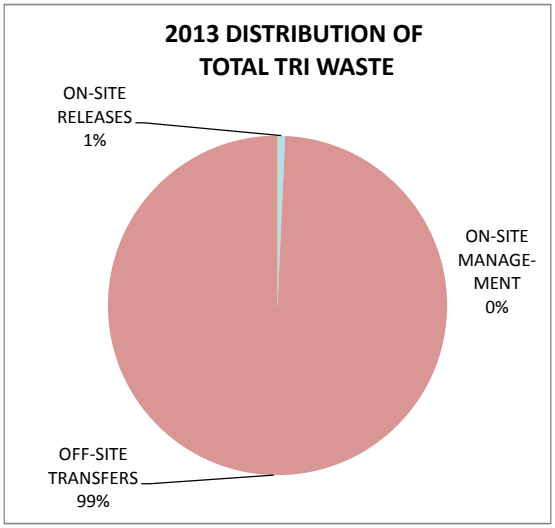
EVRAZ CLAYMONT STEEL, CONT.

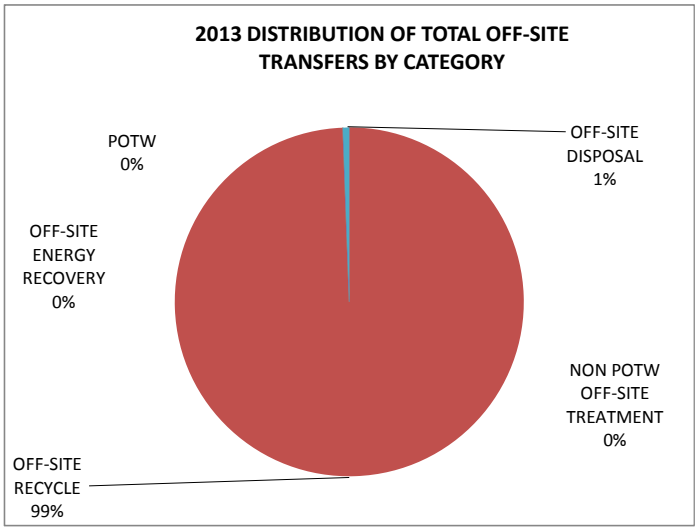
GRAPHICAL INFORMATION:







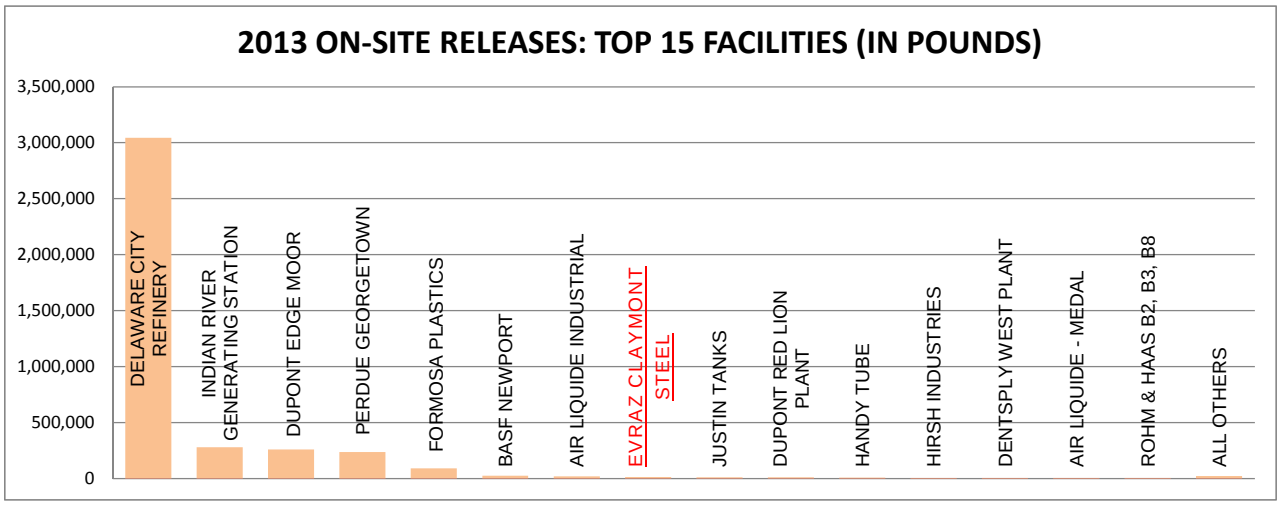


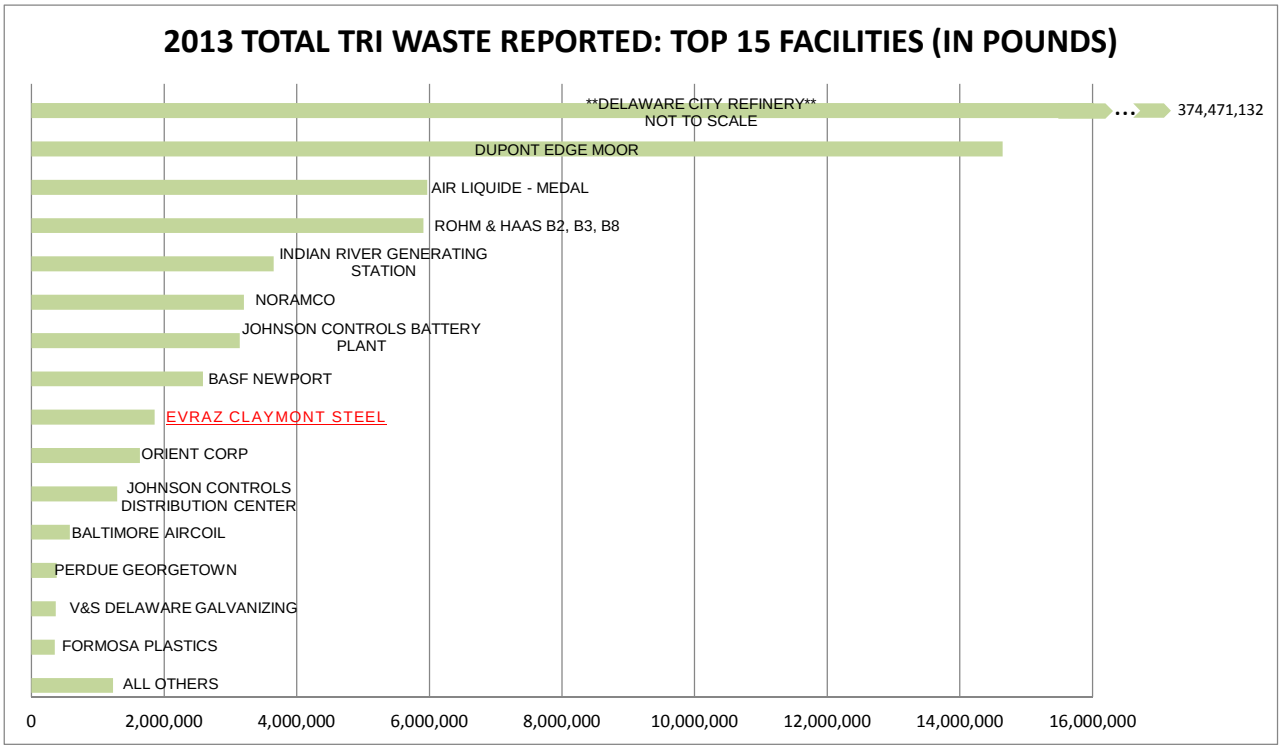


TRI FACILITY PROFILES

EVRAZ CLAYMONT STEEL, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Evraz Claymont Steel ranks 21 for on-site releases of manganese compounds by primary metals facilities (NAICS code 331) (out of 243 facilities).

Evraz Claymont Steel ranks 85th in the nation for off-site transfers of zinc compounds (out of 2,987 facilities).

TRI FACILITY PROFILES

FORMOSA PLASTICS

LOCATION/CONTACT:

Address: 780 Schoolhouse Road
Delaware City, DE 19706

Phone: (302)-836-2256

Contact: Kimberly Bennett

FACILITY OVERVIEW:

Formosa Plastics, located in the Delaware City complex, produces polyvinyl chloride (PVC) resin for bulk sale to other industries that produce PVC based products, such as containers, flooring, carpet backing, upholstery, toys, and gloves.

The facility has reported since 1987. Formosa reported on four TRI chemicals for 2013; vinyl acetate monomer, vinyl chloride monomer, ammonia, and dioxins and dioxin-like compounds. Vinyl acetate monomer (VAM) is a raw material used in certain products and is released through the drying process. Vinyl chloride monomer (VCM) is the primary ingredient for producing PVC and is released as residual unreacted monomer during the drying process of the PVC resin. Permits regulate the concentration of the residual monomer in the PVC before drying. Ammonia is also used in several of Formosa's products and is released during the PVC drying process. Trace amounts of dioxins and dioxin-like compounds were detected in the plant emissions (0.000011 pounds) and waste and recycled solids (0.000143 pounds), possibly the result of on-site incineration of waste gases. Scrubber water from the incinerator is processed by the wastewater treatment system.

For 2013, total on-site releases were down by 41%, compared to 2012 (see *Total On-site Releases Per Year Graph* on the next page). These reductions were primarily the result of a decrease in production, as well as adjustments that were made in the calculations for vinyl acetate.

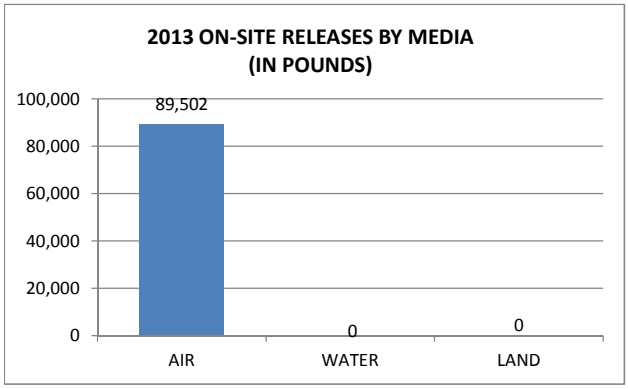
2013 TRI DATA (REPORTED IN POUNDS):

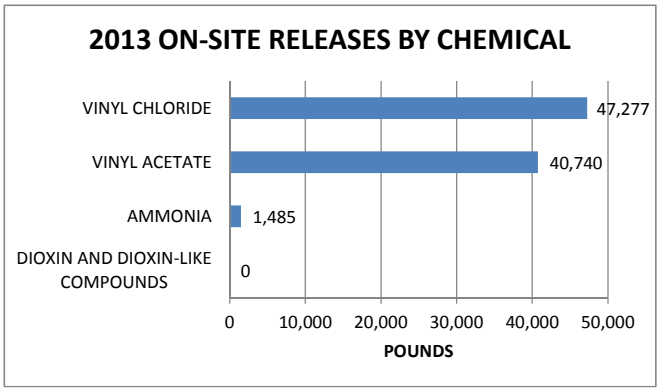
	ON-SITE RELEASES				OFF-SITE	ON-SITE		
CHEMICAL	AIR	WATER	LAND	TOTAL	TRANSFERS	MANAGEMENT	PBT	CARCINOGEN
AMMONIA	1,485	0	0	1,485	0	0	NO	NO
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	YES	NO
VINYL ACETATE	40,740	0	0	40,740	0	0	NO	YES
VINYL CHLORIDE	47,277	0	0	47,277	147	263,480	NO	YES
TOTAL	89,502	0	0	89,502	147	263,480		

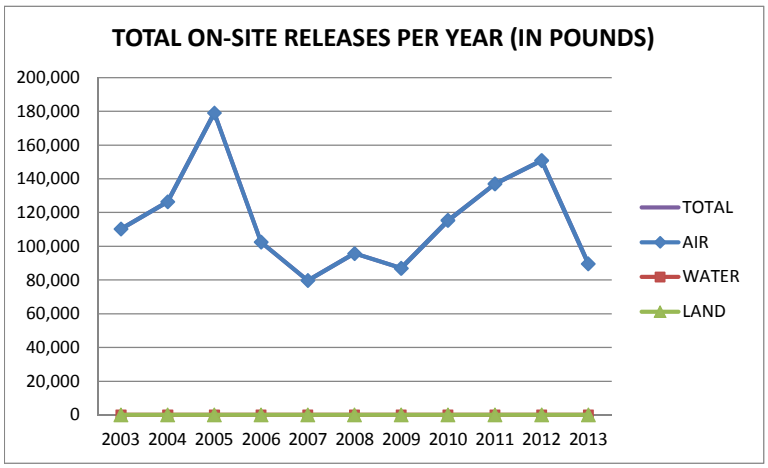
TRI FACILITY PROFILES

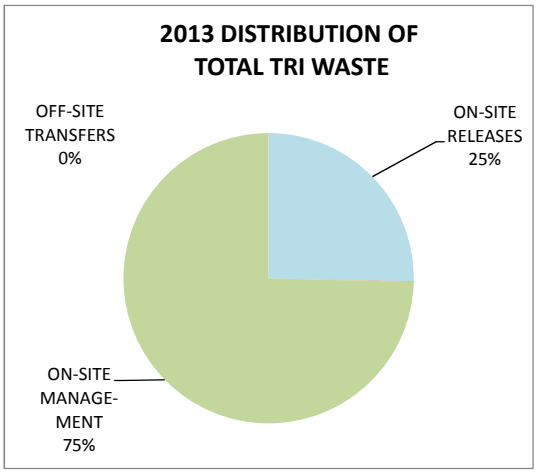
FORMOSA PLASTICS, CONT.

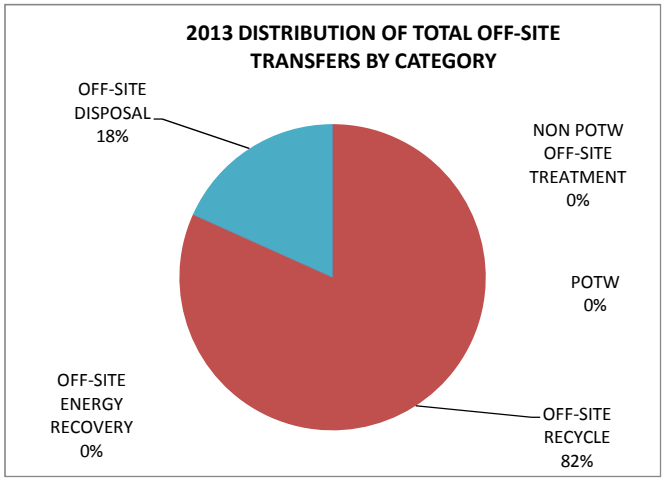
GRAPHICAL INFORMATION:

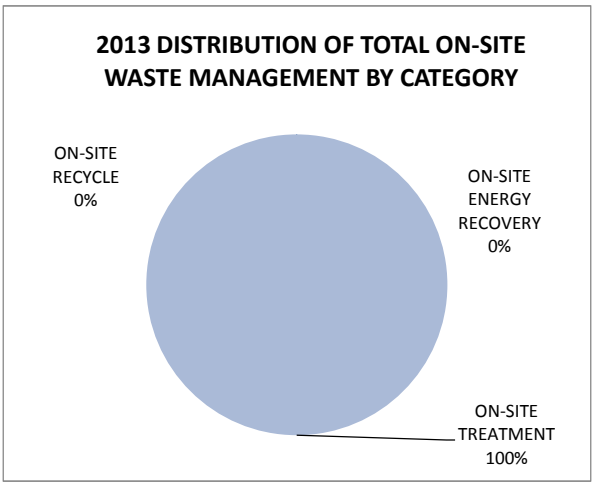








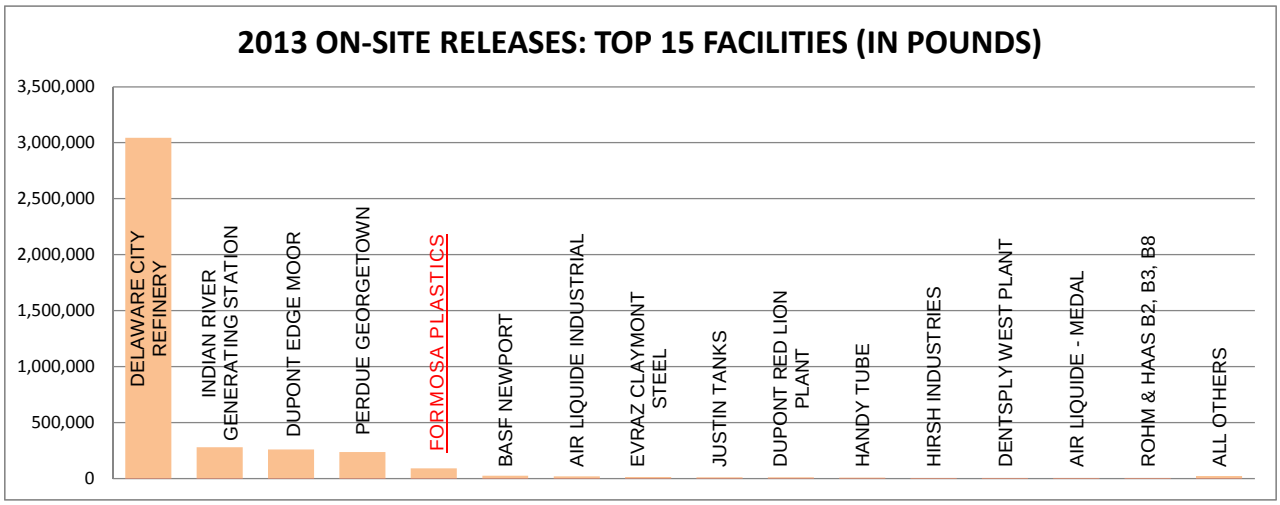


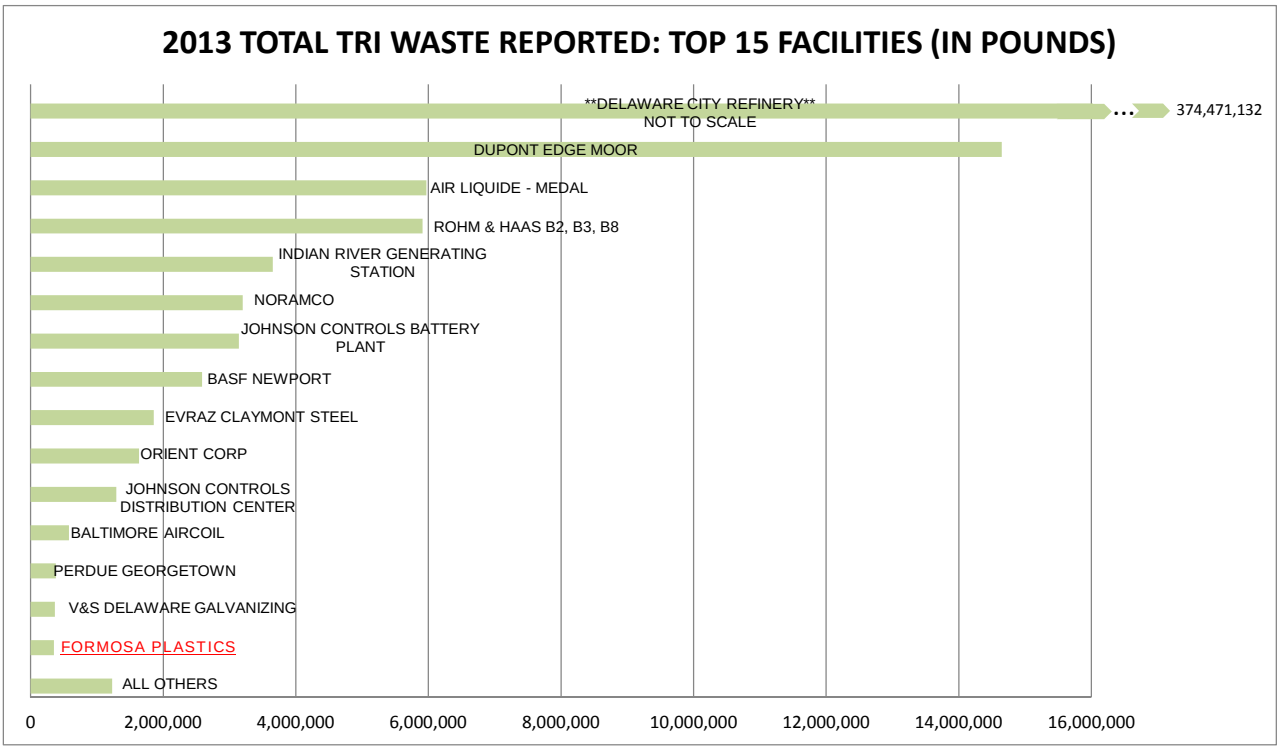


TRI FACILITY PROFILES

FORMOSA PLASTICS, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Formosa Plastics ranks 3 in the nation for on-site releases of vinyl chloride (out of 41 facilities).

Formosa Plastics ranks 11 in the nation for on-site releases of vinyl acetate (out of 153 facilities).

Formosa Plastics ranks 14 in the nation for on-site treatment of vinyl chloride (out of 41 facilities).

TRI FACILITY PROFILES

FUJI FILMS

LOCATION/CONTACT:

Address: 233 Cherry Lane
New Castle, DE 19720

Phone: (302) 472-1257

Contact: Maureen Concordia

FACILITY OVERVIEW:

Fuji Film Imaging Colorants, Inc. produces both purified dye or inks, as well as several raw material intermediates used in the manufacture of dyes and inks. The processes are essentially a series of physical chemical steps involving no complex chemical reactions (i.e. exothermic) requiring significant process safety precautions.

The facility has reported since 1993, previously as Avecia. Fuji Film reported on one chemical in 2013, nitrate compounds on short Form A. The nitrate compounds are added into a vessel with other chemicals to make aqueous ink formulations. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs. of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.)

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
NITRATE COMPOUNDS*	0	0	0	0	0	0	NO	NO
TOTAL	0	0	0	0	0	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

TRI reports for this facility were submitted on Short Form A. No on-site releases, off-site transfers, or on-site waste management activities are reported. Total reportable waste activities for this facility do not exceed 500 pounds per chemical reported.

TRI FACILITY PROFILES

GAC SEAFORD

LOCATION/CONTACT:

Address: 25938 Nanticoke Street
Seaford, DE 19973

Phone: (813) 248-2101

Contact: Michael Thrasher

FACILITY OVERVIEW:

GAC Seaford manufactures asphalt based roof and driveway coatings and repair products. The products are manufactured in a batch process then filled into retail sized containers. The products are palletized and shipped to retail chains across the northeast.

The facility has reported since 1988. GAC Seaford reported one chemical in 2013, trimethylbenzene, on short form A. Trimethylbenzene is listed as a minor/trace component of Mineral Spirits on some supplier material safety data sheets. Mineral Spirits is used to thin asphalt to make it flowable at ambient temperatures so it can be used as a cold process coating, sealant, or adhesive in finished products. Mineral spirits is not a generated waste at the site. Any unused mineral spirits from a previous batch is reworked into the next process batch. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs. of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.)

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
1,2,4-TRIMETHYLBENZENE*	0	0	0	0	0	0	NO	NO
TOTAL	0	0	0	0	0	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

TRI reports for this facility were submitted on Short Form A. No on-site releases, off-site transfers, or on-site waste management activities are reported. Total reportable waste activities for this facility do not exceed 500 pounds per chemical reported.

TRI FACILITY PROFILES

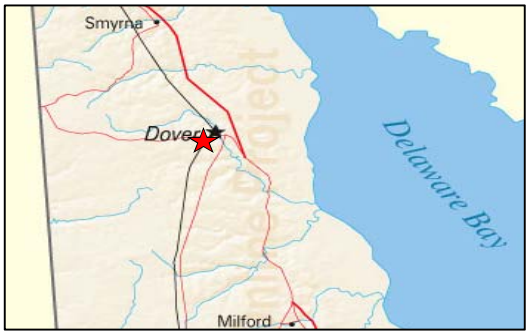
HANDY TUBE

LOCATION/CONTACT:

Address: 124 Vepco Boulevard
Camden, DE 19934

Phone: (302)-697-9521

Contact: John Coates



FACILITY OVERVIEW:

Handy Tube Corporation specializes in the production of seamless stainless steel coiled and straight length tubing. These tubes are produced for numerous Applications in the Petrochemical, Oil and Gas, Subsea and Downhole, Geothermal, Chromatography, Flow Measurement and Sensing, Medical, Ship Building, Military, Aerospace, Semiconductor and Instrumentation industries. HandyTube produces continuous seamless coils which can be in excess of 6,000 feet. The tubing ranges in size from .020 to 3/4 inch outer diameter.

The facility has reported since 1987, previously as Camdel Metals. Trichloroethylene (TCE) is the primary TRI chemical reported by Handy Tube and makes up 100% of the on-site release amount. It is used as a solvent to clean the tubing. After 1994, Handy Tube switched to a closed vacuum system for the TCE, which significantly reduced releases to air (92,000 pounds of TCE were released to air in 1994). Handy Tube has continued to make improvements to the closed vacuum system that has further reduced TCE releases to air. Of the scrap metal generated at the facility, 99% is sent off-site for recycle.

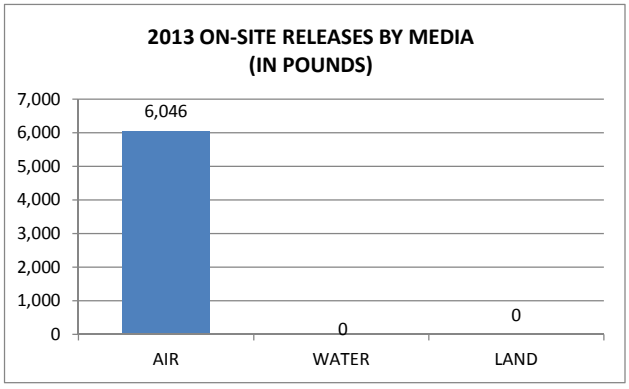
2013 TRI DATA (REPORTED IN POUNDS):

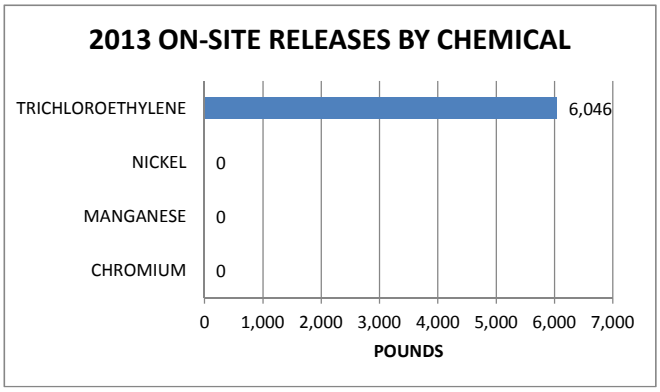
CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
CHROMIUM	0	0	0	0	45,133	0	NO	NO
MANGANESE	0	0	0	0	4,767	0	NO	NO
NICKEL	0	0	0	0	44,727	0	NO	NO
TRICHLOROETHYLENE	6,046	0	0	6,046	12,766	0	NO	NO
TOTAL	6,046	0	0	6,046	107,393	0		

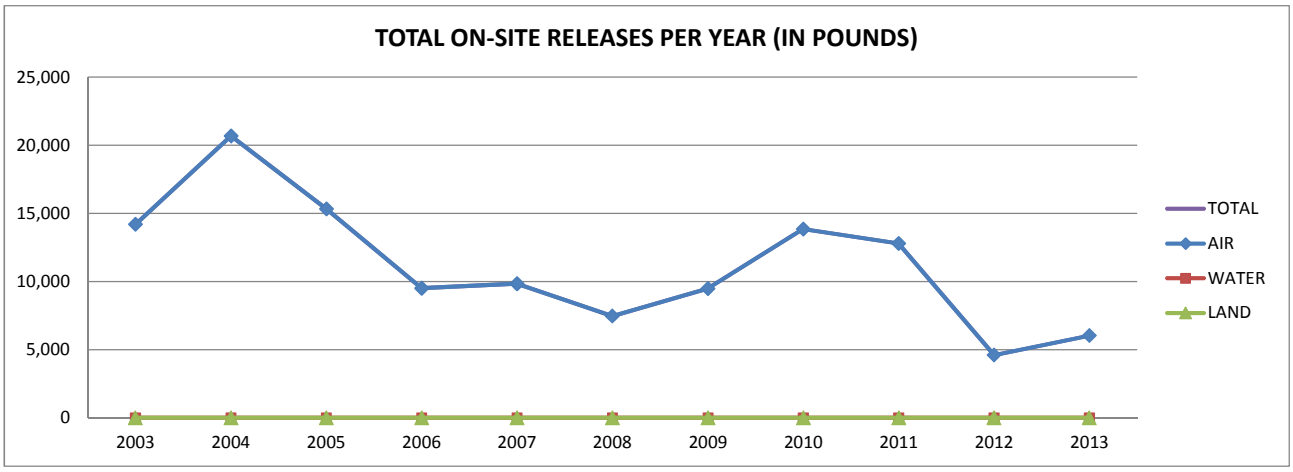
TRI FACILITY PROFILES

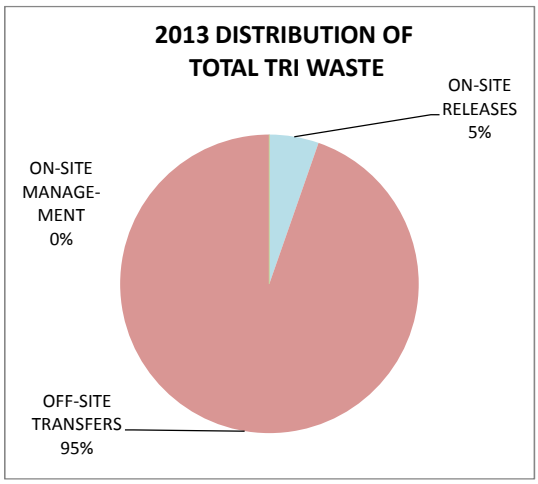
HANDY TUBE, CONT.

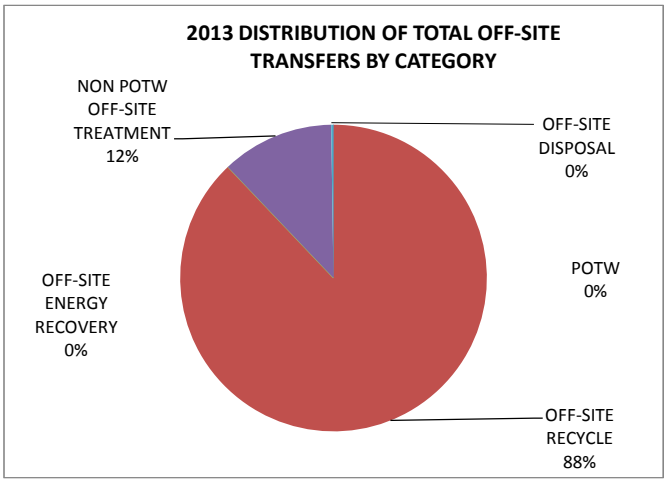
GRAPHICAL INFORMATION:







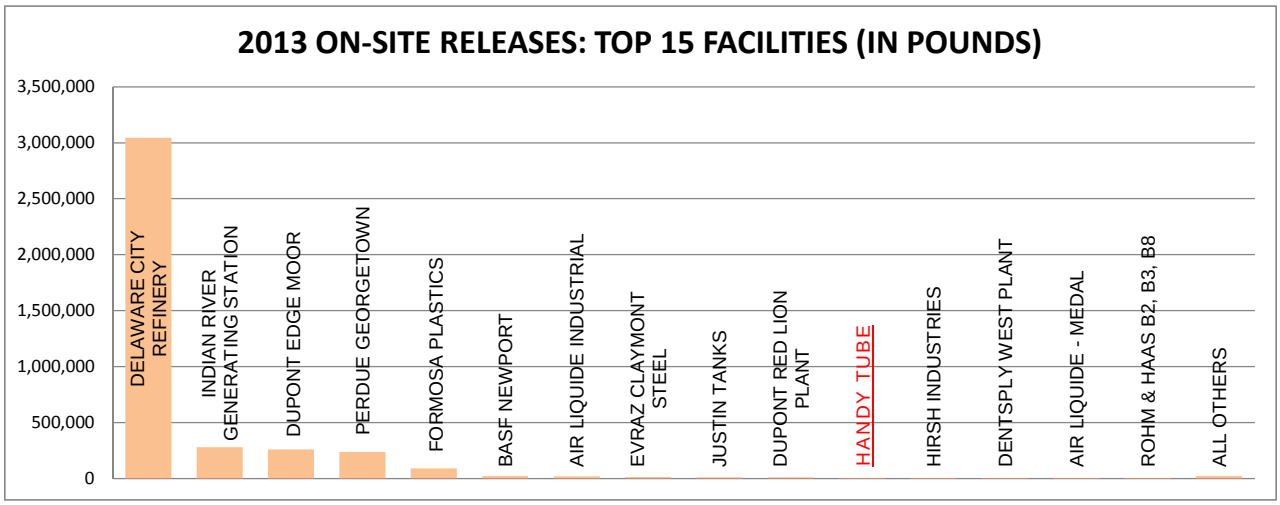


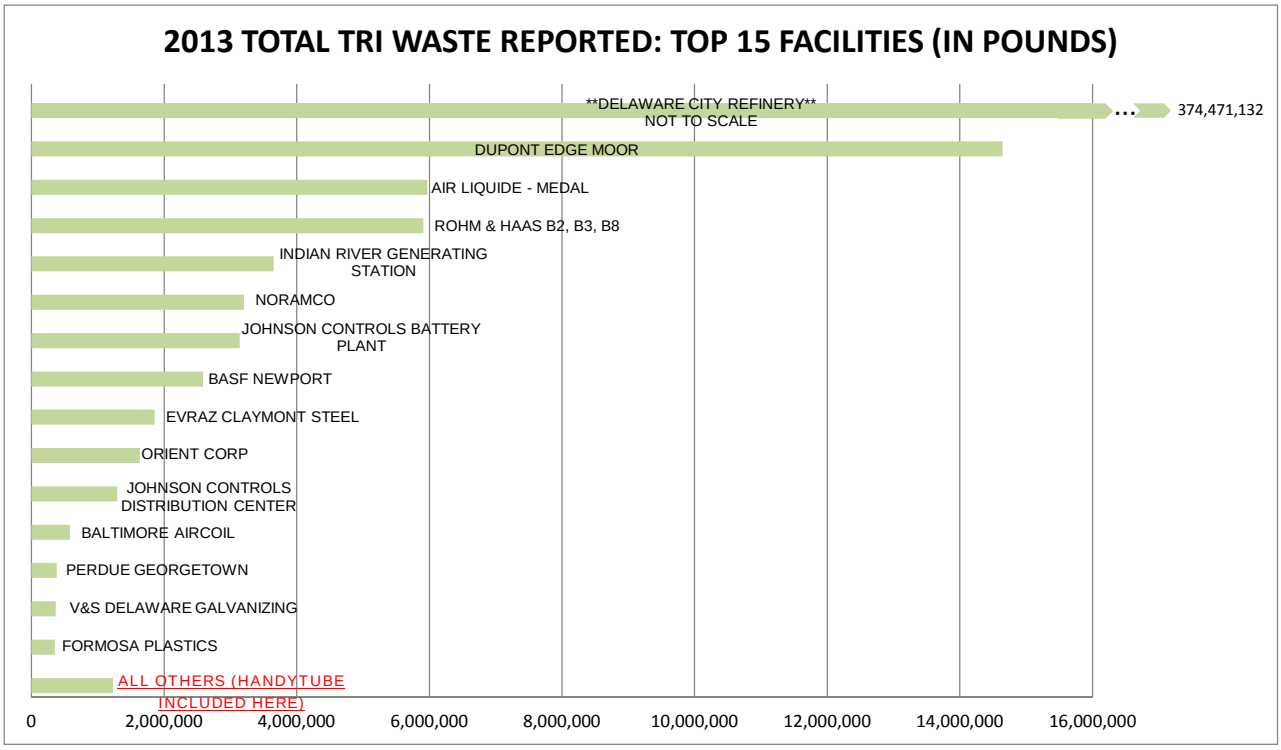


TRI FACILITY PROFILES

HANDY TUBE, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Handytube ranks 74th in the nation for on-site releases of trichloroethylene (out of 202 facilities).

TRI FACILITY PROFILES

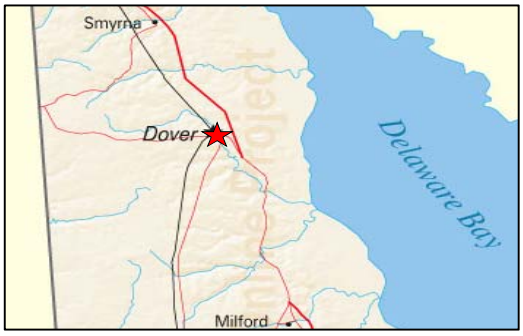
HANESBRANDS

LOCATION/CONTACT:

Address: 631 Ridgley Street
Dover, DE 19904

Phone: (336)-519-2715

Contact: Tommy Thompson



FACILITY OVERVIEW:

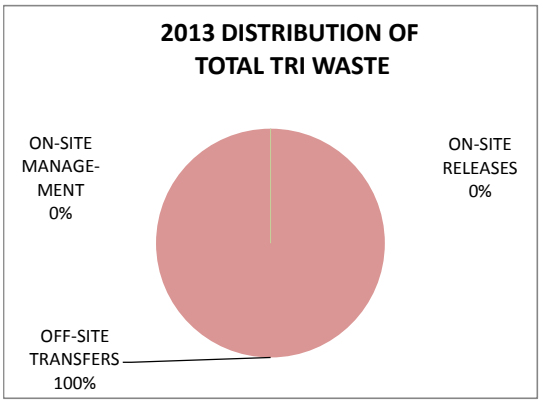
Hanesbrands makes the 18-Hour material for the Playtex 18-Hour Bras. By compounding the latex with different chemicals, a rubber latex is produced. This latex is placed on an engraved roll which then goes through a process which coats the rubber latex with adhesive and nylon fabric is adhered to both sides to create the 18-Hour material.

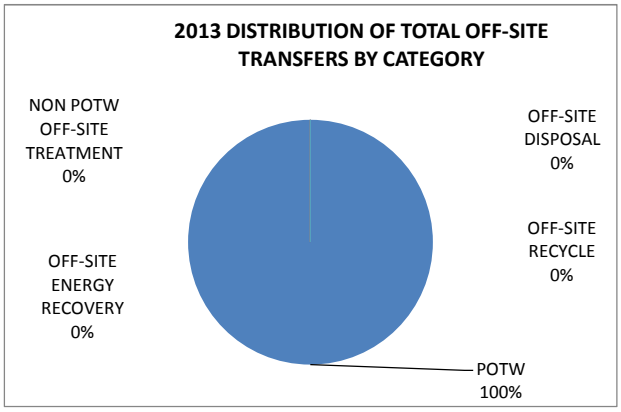
Hanesbrands has reported since 2003, formerly as Sara Lee Apparel and Playtex Apparel. The facility reported on 1 chemical in 2013, nitrate compounds. Nitrate Compounds are a by-product of compounding the latex and are transferred off-site for treatment.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
NITRATE COMPOUNDS	0	0	0	0	44,740	0	NO	NO
TOTAL	0	0	0	0	44,740	0		

GRAPHICAL INFORMATION:

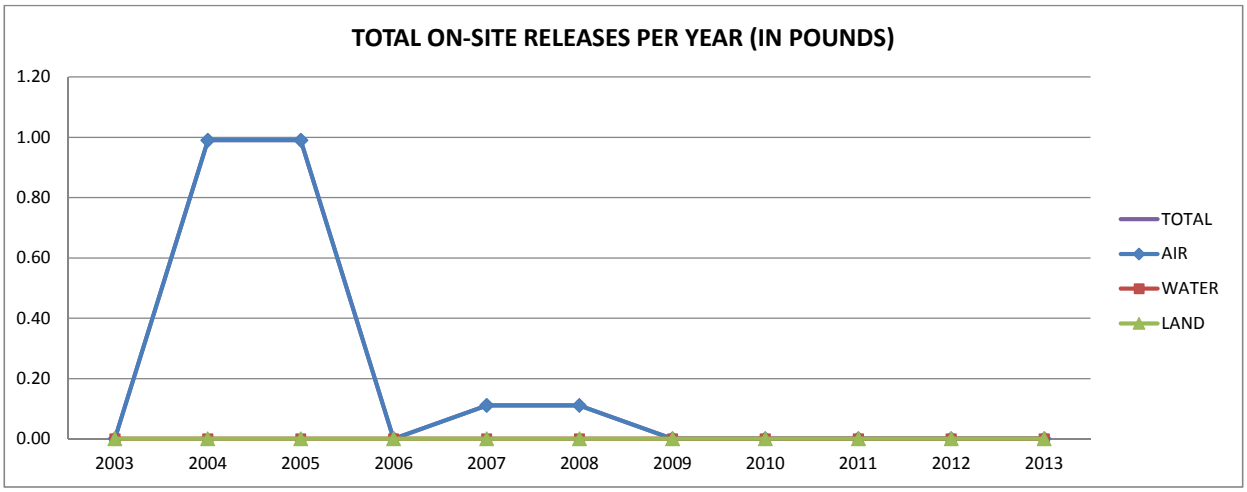




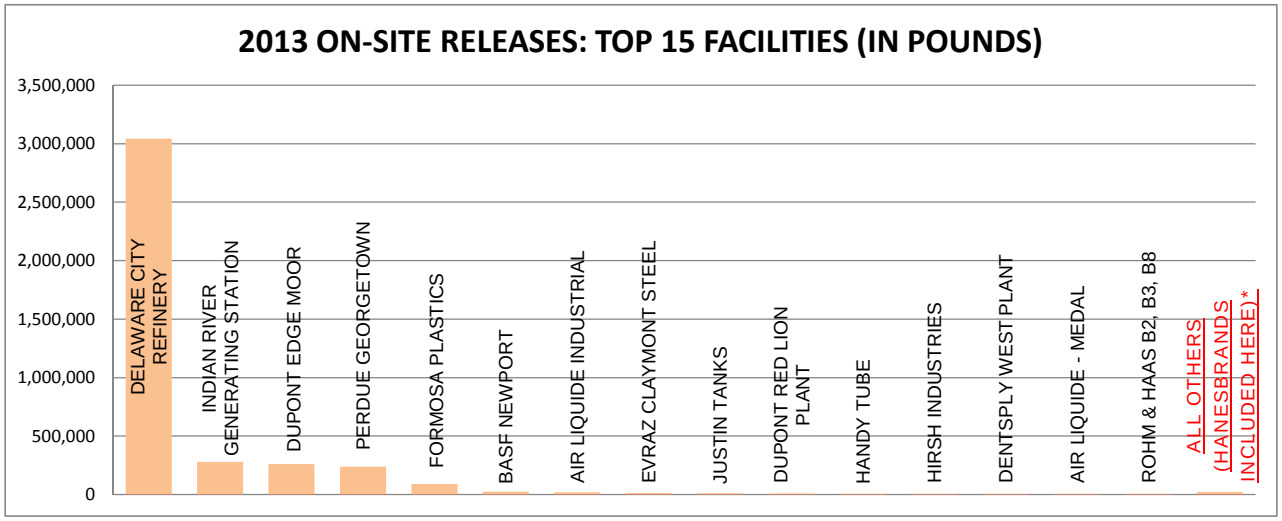
TRI FACILITY PROFILES

HANESBRANDS, CONT.

GRAPHICAL INFORMATION CONT.:



COMPARISON TO OTHER DELAWARE TRI FACILITIES:

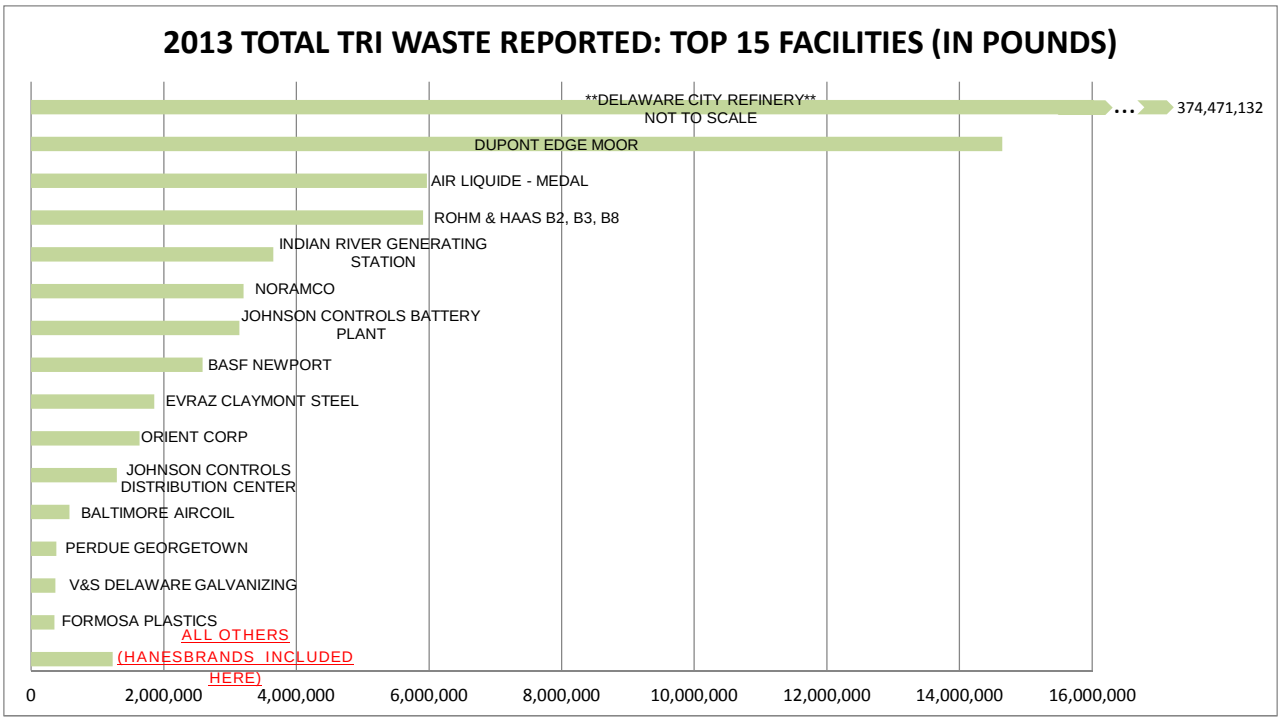


*Hanesbrands ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site. Comparisons only include facilities reporting on Form R.

TRI FACILITY PROFILES

HANESBRANDS, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES CONT.:



NOTABLE 2013 NATIONAL RANKINGS:

Hanesbrands ranks 3rd in the off-site transfer of nitrate compounds for textile facilities (NAICS 313/314) (out of 9 facilities).

TRI FACILITY PROFILES

HERITAGE CONCRETE-BEAR

LOCATION/CONTACT:

Address: 1250 Porter Road
Bear, DE 19701

Phone: (717)-236-7023

Contact: John Rice

FACILITY OVERVIEW:

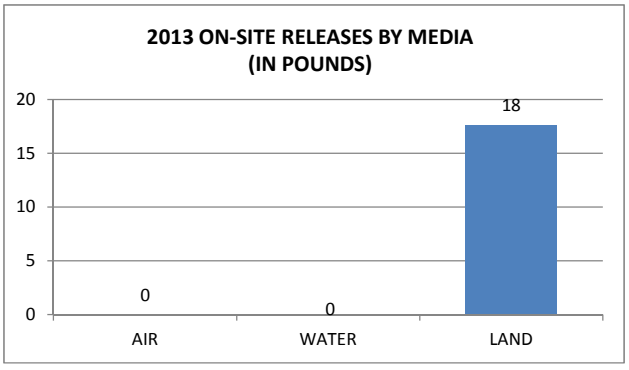
Heritage Concrete reported under the North American Industrial Classification System (NAICS) as 327320, which covers ready-mix concrete manufacturing.

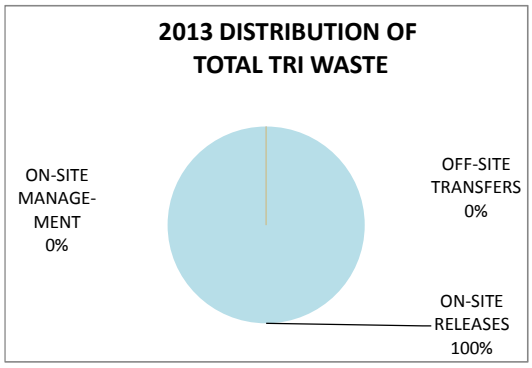
Heritage Concrete has four facilities in Delaware that report to TRI located in Bear, Cheswold, Frankford, and Wilmington. This is the first year the company has reported to TRI. These facilities each reported on one chemical in 2013, lead, with on-site releases to air and land. Lead is reported as being processed as an impurity.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
LEAD	0	0	18	18	0	0	YES	YES
TOTAL	0	0	18	18	0	0		

GRAPHICAL INFORMATION:





HERITAGE CONCRETE-BEAR, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:

Heritage Concrete-Bear ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.

Heritage Concrete-Bear ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

Heritage Concrete-Bear ranks 57th in on-site releases of lead for stone/clay/glass facilities (NAICS 327) (out of 767 facilities).

TRI FACILITY PROFILES

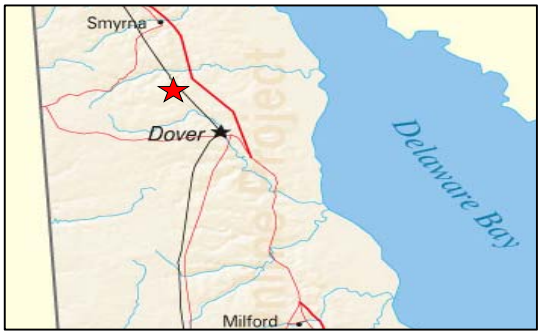
HERITAGE CONCRETE-CHESWOLD

LOCATION/CONTACT:

Address: 376 Holly Oak Lane
Cheswold, DE 19936

Phone: (717)-236-7023

Contact: John Rice



FACILITY OVERVIEW:

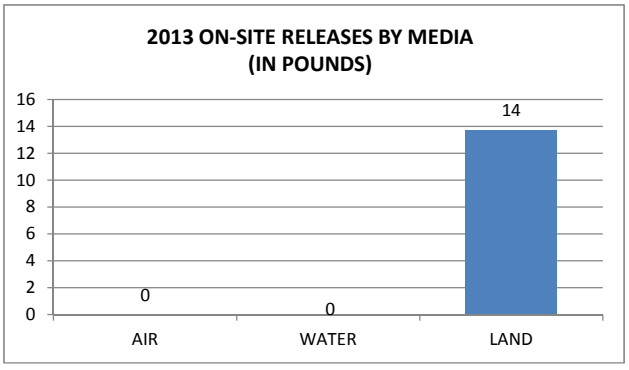
Heritage Concrete reported under the North American Industrial Classification System (NAICS) as 327320, which covers ready-mix concrete manufacturing.

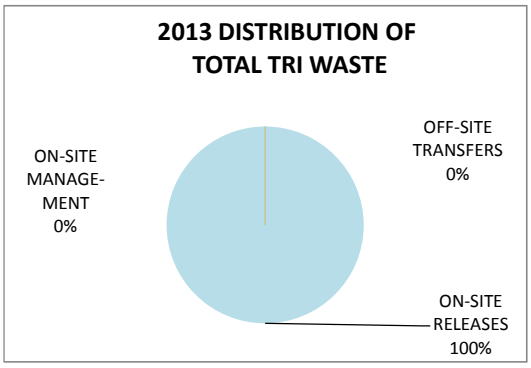
Heritage Concrete has four facilities in Delaware that report to TRI located in Bear, Cheswold, Frankford, and Wilmington. This is the first year the company has reported to TRI. These facilities each reported on one chemical in 2013, lead, with on-site releases to air and land. Lead is reported as being processed as an impurity.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
LEAD	0	0	14	14	0	0	YES	YES
TOTAL	0	0	14	14	0	0		

GRAPHICAL INFORMATION:





HERITAGE CONCRETE-CHESWOLD, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:

Heritage Concrete-Cheswold ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.

Heritage Concrete Cheswold ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

Heritage Concrete-Cheswold ranks 61st in on-site releases of lead for stone/clay/glass facilities (NAICS 327) (out of 767 facilities).

TRI FACILITY PROFILES

HERITAGE CONCRETE-FRANKFORD

LOCATION/CONTACT:

Address: 29610 Lazy Lagoon Road
Frankford, DE 19945

Phone: (717)-236-7023

Contact: John Rice

FACILITY OVERVIEW:

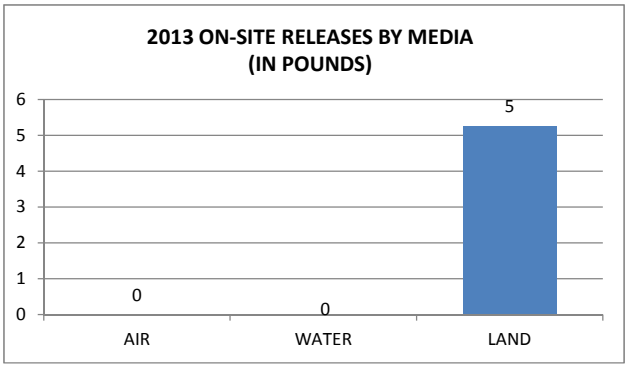
Heritage Concrete reported under the North American Industrial Classification System (NAICS) as 327320, which covers ready-mix concrete manufacturing.

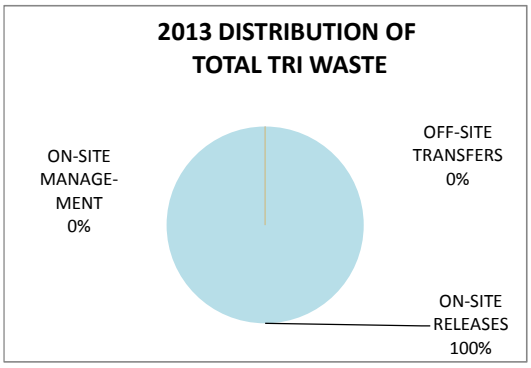
Heritage Concrete has four facilities in Delaware that report to TRI located in Bear, Cheswold, Frankford, and Wilmington. This is the first year the company has reported to TRI. These facilities each reported on one chemical in 2013, lead, with on-site releases to air and land. Lead is reported as being processed as an impurity.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
LEAD	0	0	5	5	0	0	YES	YES
TOTAL	0	0	5	5	0	0		

GRAPHICAL INFORMATION:





TRI FACILITY PROFILES

HERITAGE CONCRETE-FRANKFORD,

COMPARISON TO OTHER DELAWARE TRI FACILITIES:

Heritage Concrete-Frankford ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.

Heritage Concrete-Frankford ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

Heritage Concrete-Bear ranks 79th in on-site releases of lead for stone/clay/glass facilities (NAICS 327) (out of 767 facilities).

TRI FACILITY PROFILES

HERITAGE CONCRETE-WILMINGTON

LOCATION/CONTACT:

Address: 1100 Heald Street
Wilmington, DE 19801

Phone: (717)-236-7023

Contact: John Rice

FACILITY OVERVIEW:

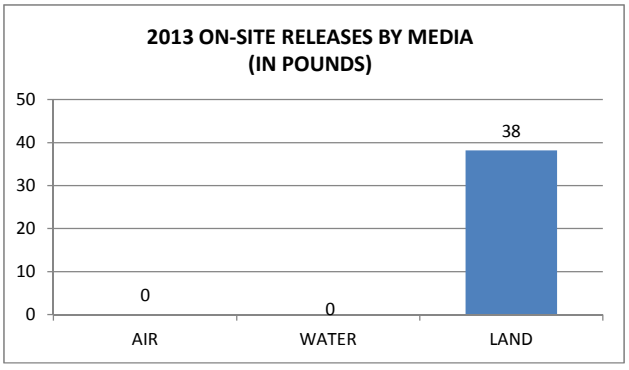
Heritage Concrete reported under the North American Industrial Classification System (NAICS) as 327320, which covers ready-mix concrete manufacturing.

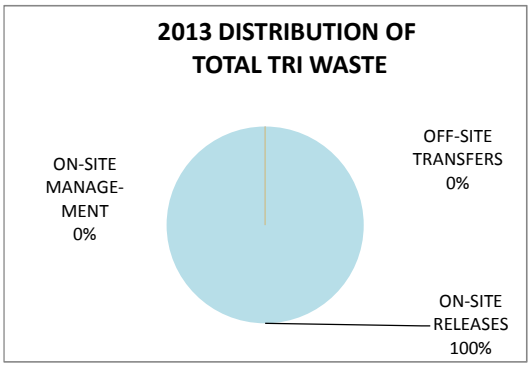
Heritage Concrete has four facilities in Delaware that report to TRI located in Bear, Cheswold, Frankford, and Wilmington. This is the first year the company has reported to TRI. These facilities each reported on one chemical in 2013, lead, with on-site releases to air and land. Lead is reported as being processed as an impurity.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
LEAD	0	0	38	38	0	0	YES	YES
TOTAL	0	0	38	38	0	0		

GRAPHICAL INFORMATION:





HERITAGE CONCRETE-WILMINGTON, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:

Heritage Concrete-Wilmington ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.

Heritage Concrete-Wilmington ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

Heritage Concrete-Bear ranks 43rd in on-site releases of lead for stone/clay/glass facilities (NAICS 327) (out of 767 facilities).

TRI FACILITY PROFILES

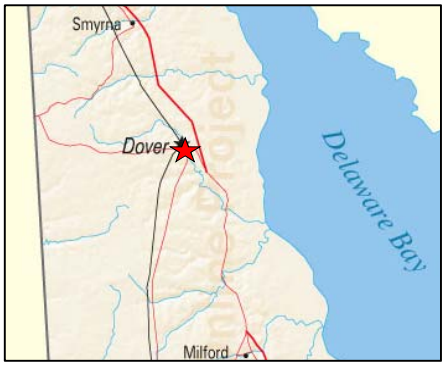
HIRSH INDUSTRIES

LOCATION/CONTACT:

Address: 1525 McKee Road
Dover, DE 19904

Phone: (302)-678-3454

Contact: Ken Murr



FACILITY OVERVIEW:

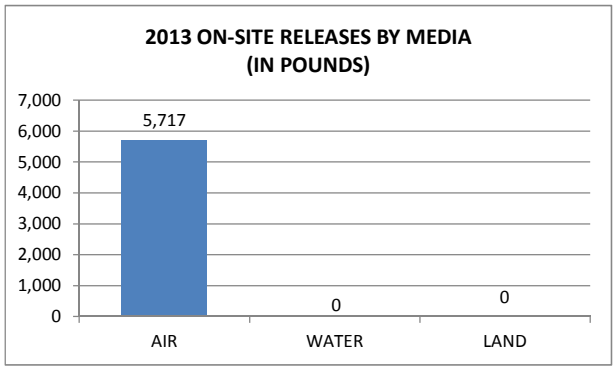
Hirsh Industries produces a line of consumer durables. These products include file cabinets, shelving units, and lateral filing systems. These items are used in home and office applications.

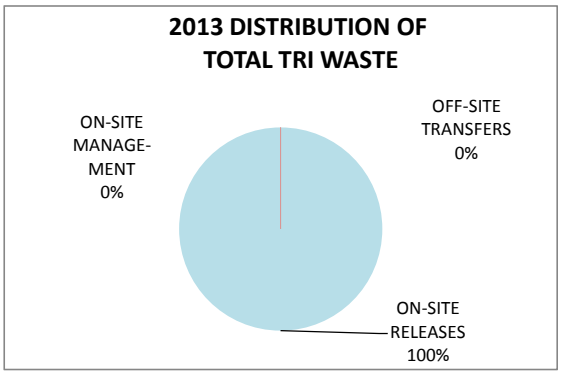
Hirsh industries has reported since 1989, previously as Steel Works and General Metal Craft. The facility reported one TRI chemical in 2013, certain glycol ethers, with on-site releases made only to air. The chemical is used as a component in the water based coatings for their painting process. On-site releases for 2013 increased by 31% compared to 2012, as a result of higher coatings use, due to increased production demands for Lateral Filing Cabinets. Releases, however, in general have trended downward since 2009, the result of utilizing improved paint products from their vendors.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
CERTAIN GLYCOL ETHERS	5,717	0	0	5,717	0	0	NO	NO
TOTAL	5,717	0	0	5,717	0	0		

GRAPHICAL INFORMATION:

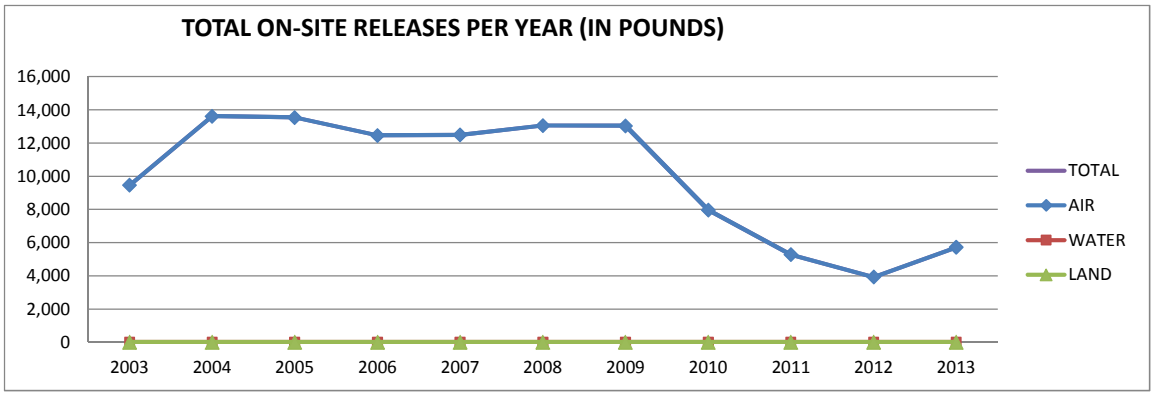




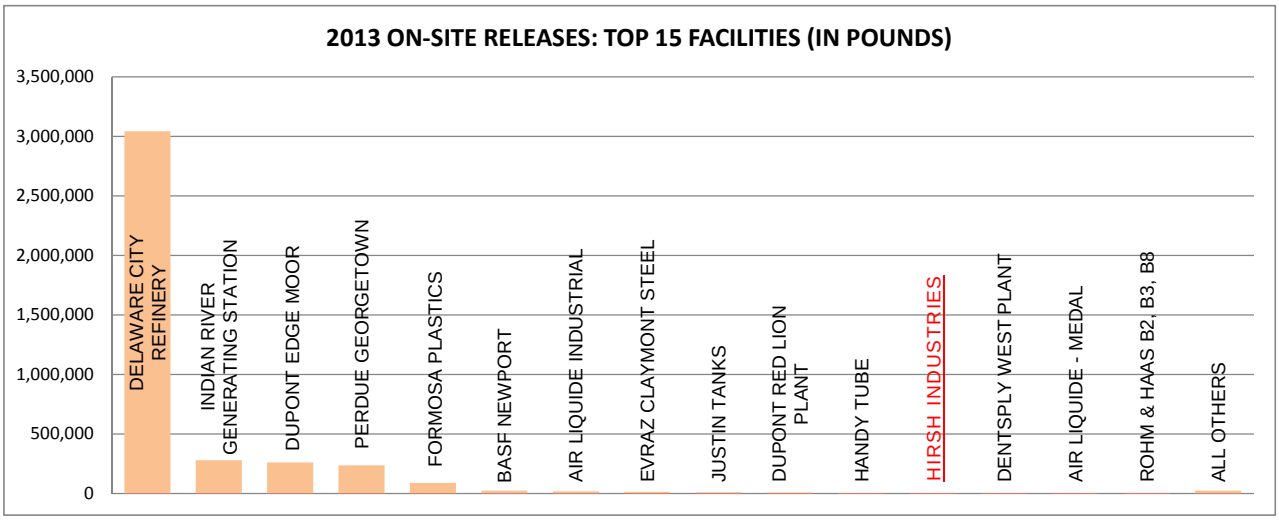
TRI FACILITY PROFILES

HIRSH INDUSTRIES, CONT.

GRAPHICAL INFORMATION:



COMPARISON TO OTHER DELAWARE TRI FACILITIES:



Hirsh Industries ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

Hirsh Industries ranks 6th in the on-site releases of certain glycol ethers for furniture facilities (NAICS 337) (out of 10 facilities).

TRI FACILITY PROFILES

HONEYWELL

LOCATION/CONTACT:

Address: 6100 Philadelphia Pike
Claymont, DE 19703

Phone: (302)-791-6748

Contact: Russell Davis

FACILITY OVERVIEW:

Honeywell manufactures specialty chemicals that are used in the production of hydrocarbon resins, lubricants, and adhesives.

The facility has reported since 1987, previously as Allied Signal. Honeywell reported four TRI chemicals for 2013. All on-site releases were to air. Releases of boron trifluoride, hydrogen fluoride, and polycyclic aromatic compounds (PACs) accounted for over 99% of the on-site releases, while releases of methanol accounted for less than 1%. The chemicals reported are utilized in the manufacture of fluorine based chemicals. The PAC's were from the paving of roadways within the plant.

In 2013, Honeywell discontinued the use of hexane and ammonia at the facility resulting in significantly reducing on-site releases. On-site releases decreased by a total of 79% compared to 2012.

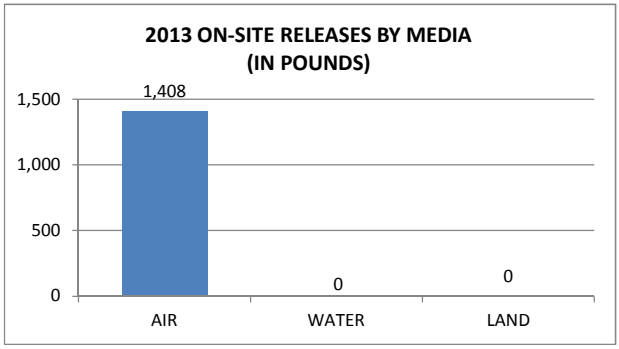
2013 TRI DATA (REPORTED IN POUNDS):

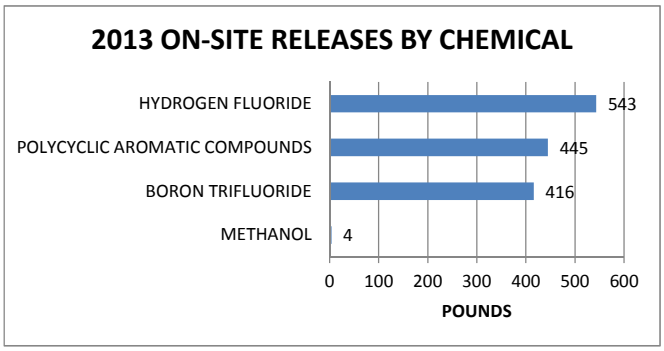
	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
BORON TRIFLUORIDE	416	0	0	416	4	0	NO	NO
HYDROGEN FLUORIDE	543	0	0	543	0	84	NO	NO
METHANOL	4	0	0	4	1,080	0	NO	NO
POLYCYCLIC AROMATIC COMPOUNDS	445	0	0	445	0	0	YES	YES
TOTAL	1,408	0	0	1,408	1,084	84		

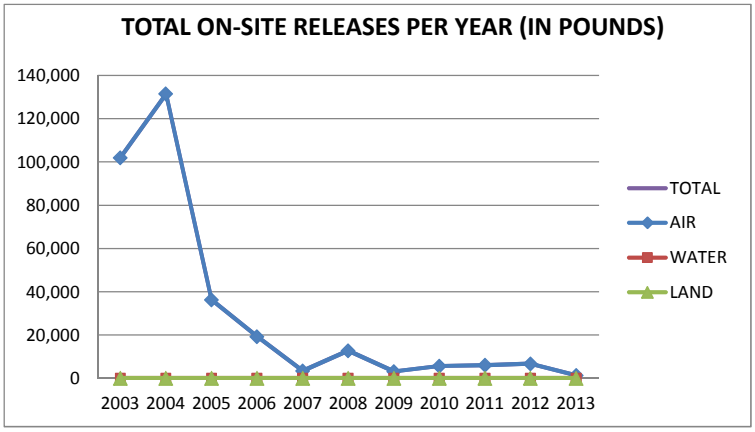
TRI FACILITY PROFILES

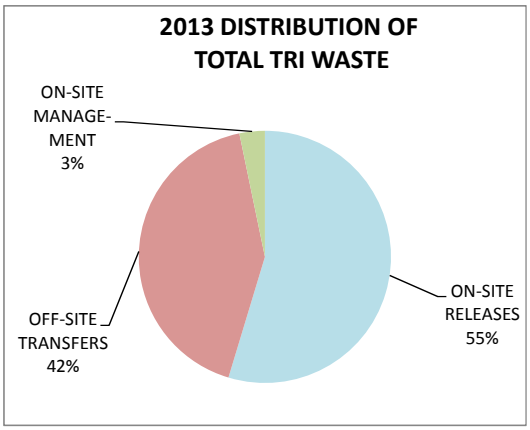
HONEYWELL, CONT.

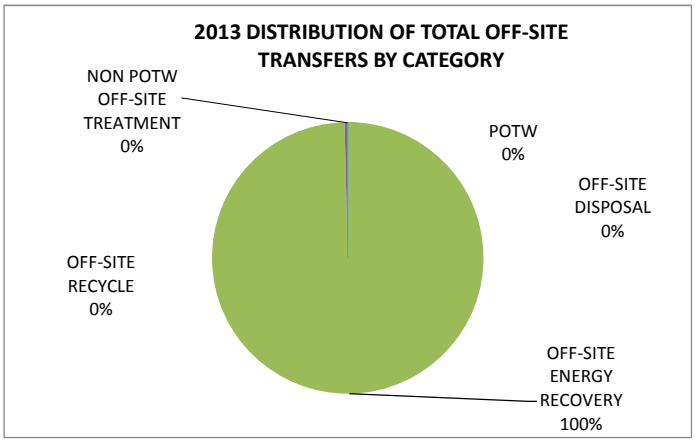
GRAPHICAL INFORMATION:

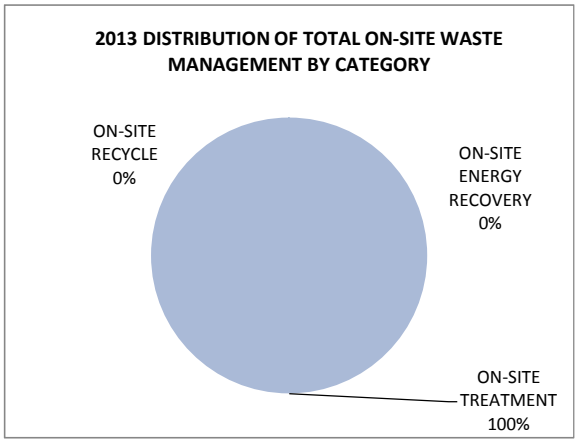








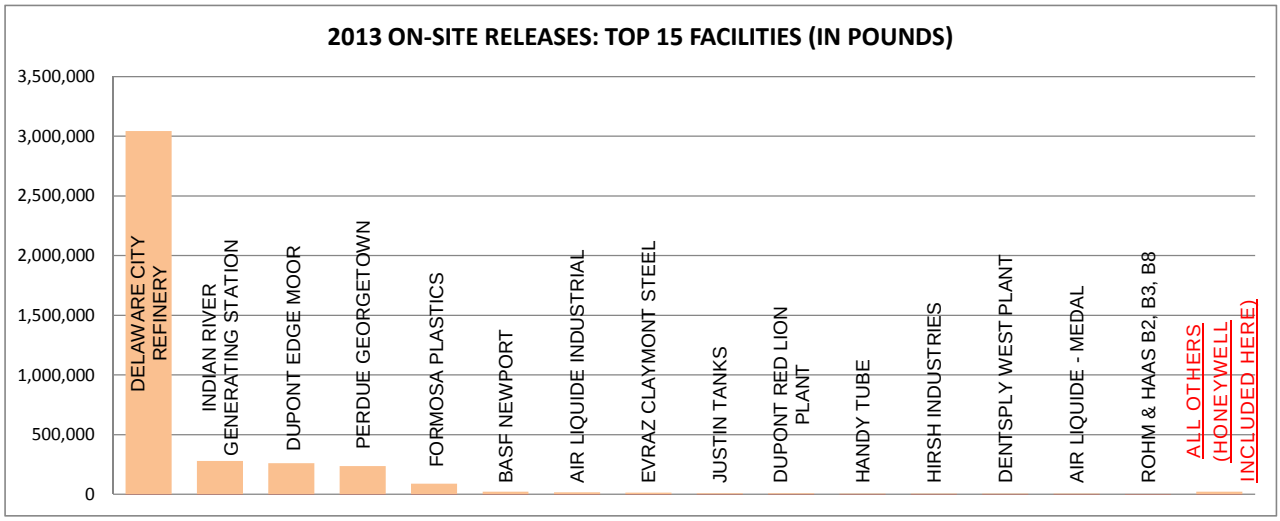




TRI FACILITY PROFILES

HONEYWELL, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:



Honeywell ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

Honeywell ranks 3rd nationally in on-site releases of boron trifluoride (out of 21 facilities).

TRI FACILITY PROFILES

IKO

LOCATION/CONTACT:

Address: 120 Hay Road
Wilmington, DE 19809

Phone: (302) 764-3100

Contact: Mike Peterson

FACILITY OVERVIEW:

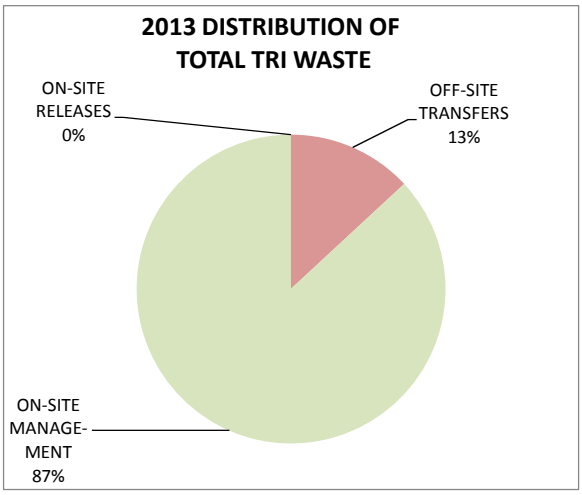
IKO Production, Inc. manufactures residential roofing products, mainly asphalt shingles, which are made from fiberglass mat coated with asphalt and finished with colored roofing granules.

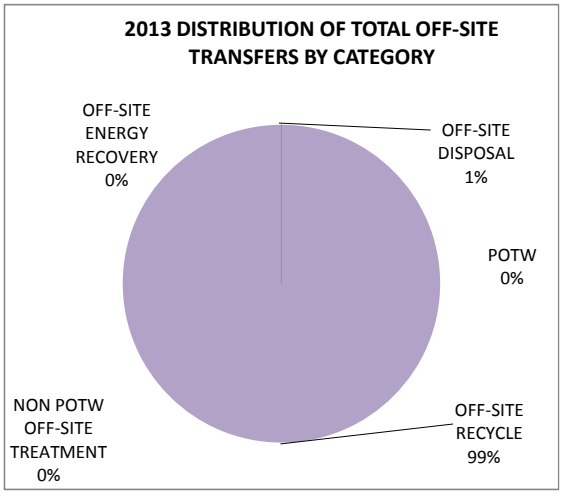
IKO has reported since 2000. The facility reported on one chemical in 2013, polycyclic aromatic compounds (PACs), with all the waste being manage on and off-site. PACS are a byproduct of asphalt, which is a residual petroleum product from crude oil distillation.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	83	551	YES	YES
TOTAL	0	0	0	0	83	551		

GRAPHICAL INFORMATION:

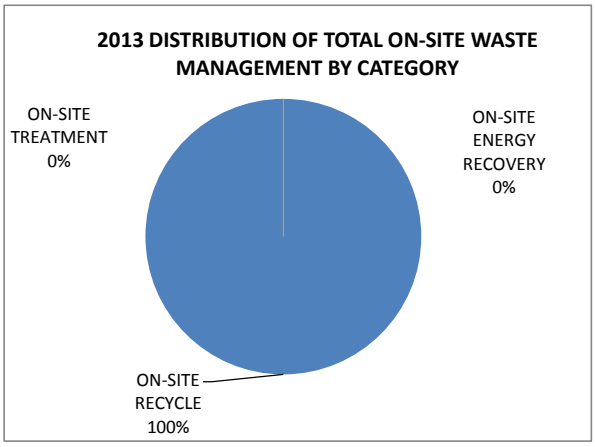




TOXICS RELEASE INVENTORY

IKO, CONT.

GRAPHICAL INFORMATION CONT.:



COMPARISON TO OTHER DELAWARE TRI FACILITIES:

IKO ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.

IKO ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

IKO ranks 62nd in the nation for on-site recycling of polycyclic aromatic compounds (out of 1,764 facilities).

TRI FACILITY PROFILES

INDIAN RIVER GENERATING STATION

LOCATION/CONTACT:

Address: 29416 Power Plant Road
Dagsboro, DE 19939

Phone: (609)-524-4529

Contact: David Gaier

FACILITY OVERVIEW:

Indian River Generating Station is a 426 megawatt facility that produces electricity, primarily from the combustion of coal. The facility previously consisted of four coal burning units and one combustion turbine. As of 2011, Units #1 and #2 were retired and Unit #3 was retired at the end of 2013.

For these units, these retirements took place even after additional emission controls and operational strategies were applied. These applications include reduced sulfur content of the coal burned for SO2 reduction, Activated Carbon Injection (ACI) for Mercury reductions, and Selective Non-Catalytic Reduction (SNCR) for NOx reductions. On Unit 4, in addition to SNCR and ACI technology, in 2011 the facility installed a Circulating Dry Scrubber (CDS) with a Baghouse for removal of acid gases including SO2 and HCl, metals, and particulate matter and Selective Catalytic Reduction (SCR) for NOx reductions. These shutdowns along with the additional controls have reduced the overall on-site releases by 96% compared to 2003.

The Indian River Plant reported on eleven TRI chemicals for 2013. Five of these were metal compounds, three were acid gases, one was dioxin and dioxin like compounds and the remaining two were ammonia and naphthalene. All the compounds except ammonia are formed during the combustion process as a result of impurities within the coal and oil. Ammonia is a product of the nitrogen oxide emissions reduction process and naphthalene is in the oil consumed at the facility.

Coal analysis data, emissions data, and emissions factors are used as a basis for calculating releases. This gives a more representative total release for the year because it represents all the data for the year, not just the data collected during a single stack test.

Acid gasses including hydrochloric acid, sulfuric acid, and hydrofluoric acid accounted for 43% of the on-site releases for 2013 compared to 98% in 2011. On-site releases for acid gases in 2013 decreased by 39% compared to 2012 and 93% compared to 2011. These decreases are due to the acid gases primarily being treated on-site by the CDS control technology.

Metal compounds, formed as a result of impurities in the coal, are largely captured (99%) in the fly ash and bottom ash. The majority of coal ash is disposed of in the on-site landfill, which includes a liner system and leachate collection. For 2013, chromium, copper, and zinc were below the reporting threshold.

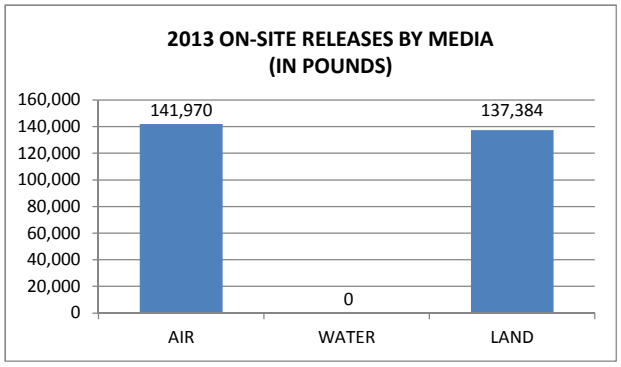
TRI FACILITY PROFILES

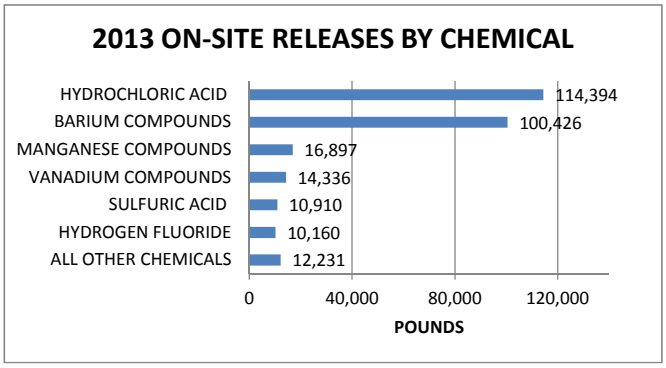
INDIAN RIVER GENERATING STATION, CONT.

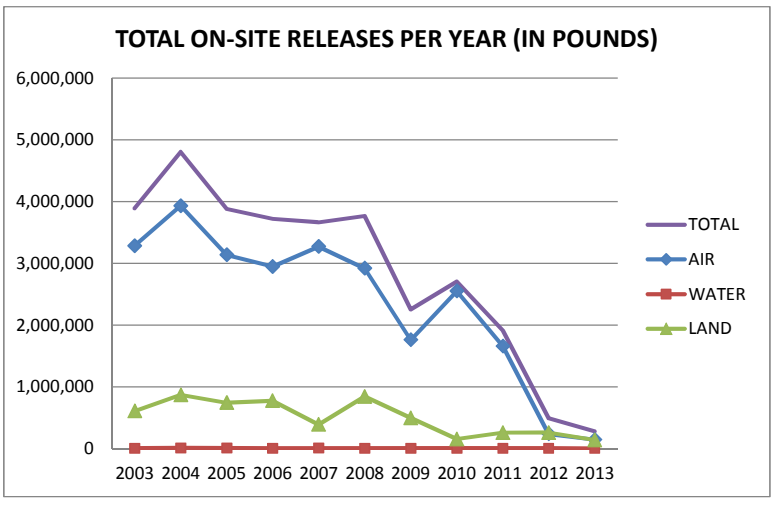
2013 TRI DATA (REPORTED IN POUNDS):

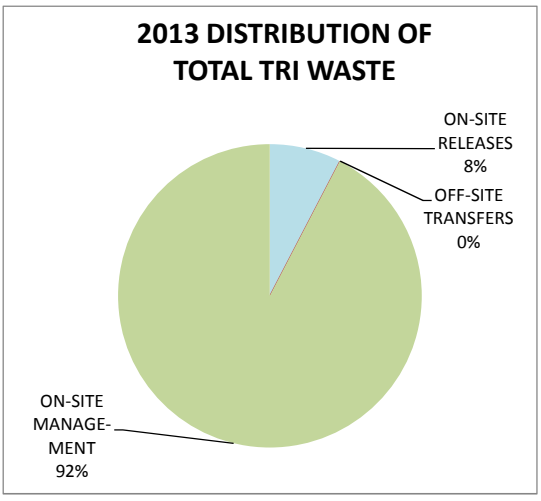
CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
AMMONIA	5,823	0	0	5,823	0	268,538	NO	NO
BARIUM COMPOUNDS	386	0	100,040	100,426	1	0	NO	NO
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0	0	0	0	0	0	YES	NO
HYDROCHLORIC ACID	114,394	0	0	114,394	0	1,246,982	NO	NO
HYDROGEN FLUORIDE	10,160	0	0	10,160	0	93,825	NO	NO
LEAD COMPOUNDS	74	0	6,217	6,291	0	0	YES	YES
MANGANESE COMPOUNDS	136	0	16,761	16,897	0	0	NO	NO
MERCURY COMPOUNDS	4	0	113	117	0	0	YES	NO
NAPHTHALENE	0	0	0	0	0	0	NO	YES
SULFURIC ACID	10,910	0	0	10,910	0	1,763,045	NO	NO
VANADIUM COMPOUNDS	83	0	14,253	14,336	0	0	NO	NO
TOTAL	141,970	0	137,384	279,354	1	3,372,390		

GRAPHICAL INFORMATION:





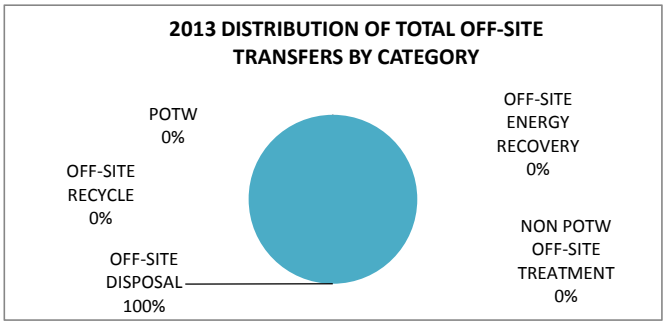


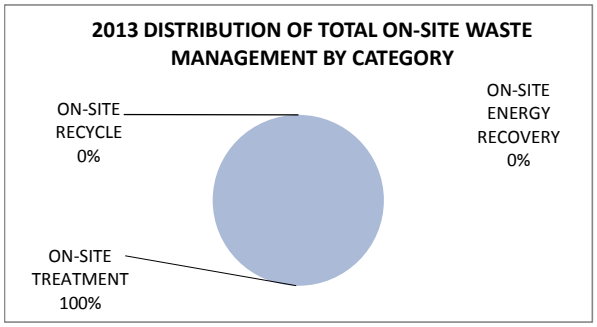


TRI FACILITY PROFILES

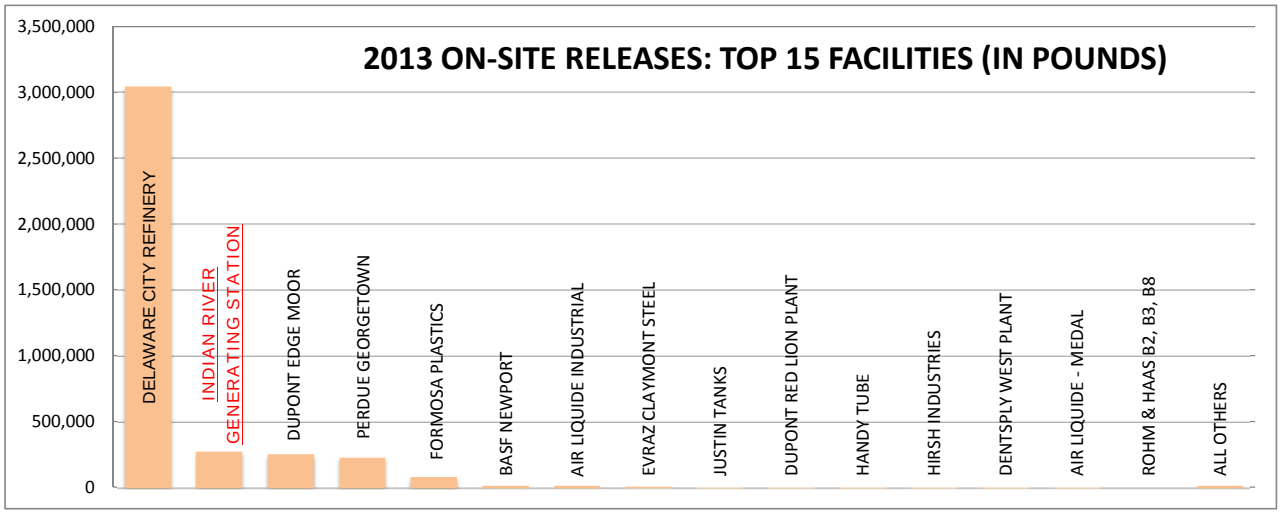
INDIAN RIVER GENERATING STATION, CONT.

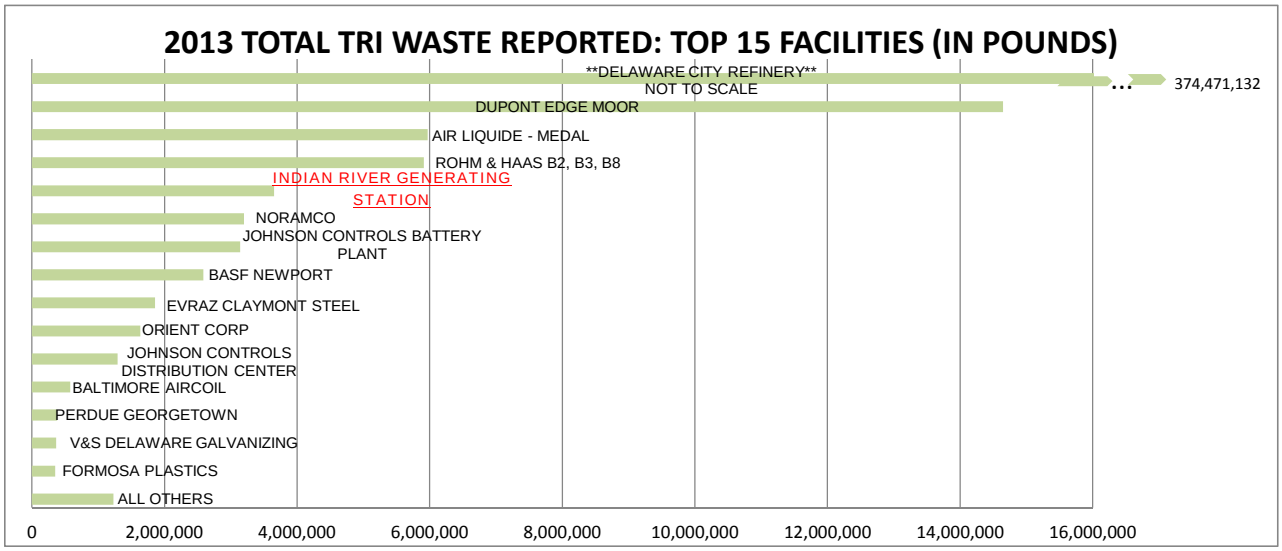
GRAPHICAL INFORMATION CONT.:





COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Indian River Generating Station ranks 76th in on-site treatment of sulfuric acid aerosol (out of 763 facilities).

Indian River Generating Station ranks 78th in on-site treatment of hydrochloric acid aerosol by electric utility facilities (NAICS 2211) (out of 359 facilities).

TRI FACILITY PROFILES

INTERVET

LOCATION/CONTACT:

Address: 29160 Intervet Lane
Millsboro, DE 19966

Phone: (302) 934-4265

Contact: Tom Bastian

FACILITY OVERVIEW:

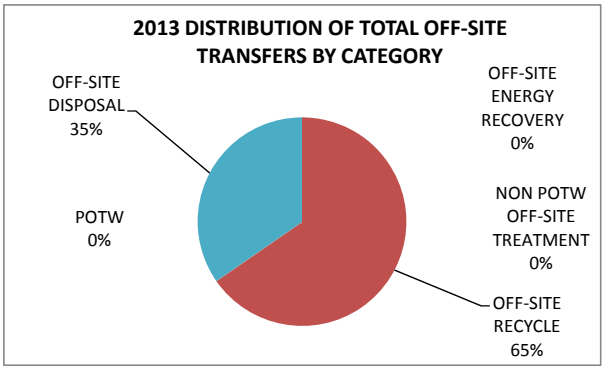
Intervet reported under the North American Industrial Classification System (NAICS) as 325414, which covers biological product manufacturing. The facility, located in Millsboro, is a fully integrated Animal Health site dedicated to the biomanufacturing of animal vaccines.

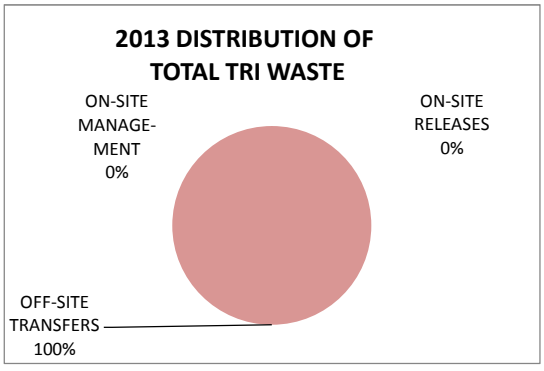
Intervet has reported since 2000. For 2013 , the facility reported on one chemical, mercury compounds. All waste reported for mercury compounds were transferred off-site for disposal. Mercury compounds are utilized in the production of vaccines (Thimerosal) as a preservative and mercury containing light bulbs are at the site.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
MERCURY COMPOUNDS	0	0	0	0	5	0	YES	NO
TOTAL	0	0	0	0	5	0		

GRAPHICAL INFORMATION:





INTERVET, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:

Intervet ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.

Intervet ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

Intervet ranks 52nd in the off-site transfer of mercury compounds for chemical facilities (NAICS 325) (out of 110 facilities).

TRI FACILITY PROFILES

JOHNSON CONTROLS BATTERY PLANT

LOCATION/CONTACT:

Address: 700 N. Broad Street
Middletown, DE 19709

Phone: (302)-376-4052

Contact: Cory Hulsing

FACILITY OVERVIEW:

Johnson Controls Battery Plant manufactures the internal lead parts of batteries that are formed and filled 1.5 miles away at their Middletown Distribution Center, before being shipped to customers. These completed batteries are used in a wide variety of vehicle types including passenger, commercial, agricultural, golf carts, and boats.

Johnson Controls Battery plant has reported since 1987. The facility reported on two chemicals in 2013, with on-site releases only from lead compounds, to both air and water. Lead compounds are utilized in the manufacturing of the battery's internal (positive and negative) plates and for completing the circuit between these plates throughout the battery. The other chemical reported antimony compounds, an impurity within the lead received from smelters, are recycled off-site. The facility assumes worst case for the impurity, which is 3% of all lead.

The majority of waste is sent off-site for recycling, with less than 0.01 % being released on-site. On-site releases for 2013 increased by 18% compared to 2012, but are down 17% overall since 2003 (see *Total On-site Releases Per Year Graph* on the next page).

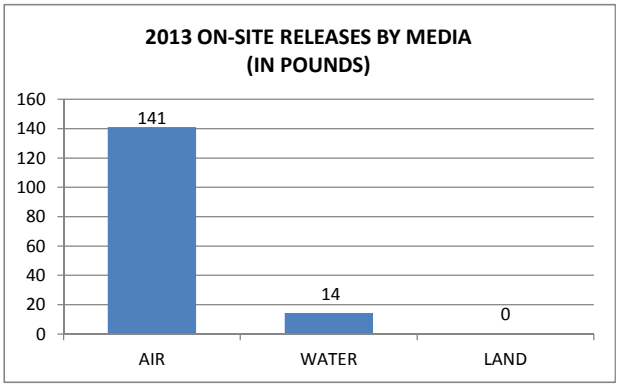
2013 TRI DATA (REPORTED IN POUNDS):

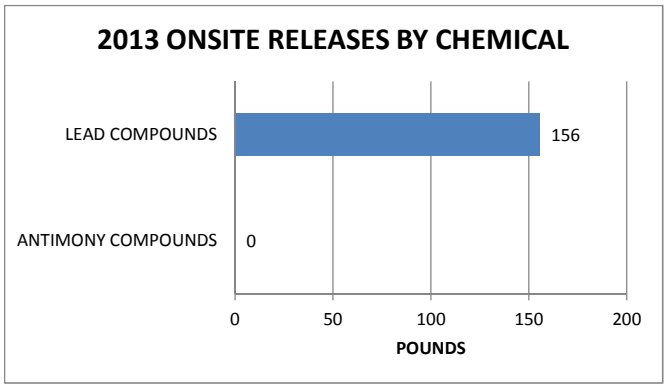
CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
ANTIMONY COMPOUNDS	0	0	0	0	11,943	0	NO	NO
LEAD COMPOUNDS	141	14	0	156	3,127,571	0	YES	YES
TOTAL	141	14	0	156	3,127,571	0		

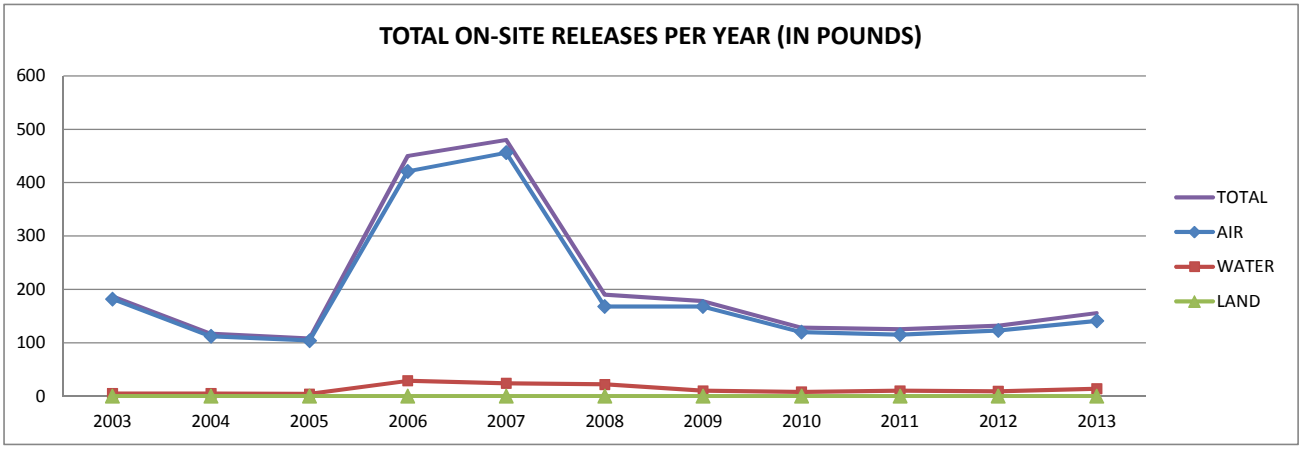
TRI FACILITY PROFILES

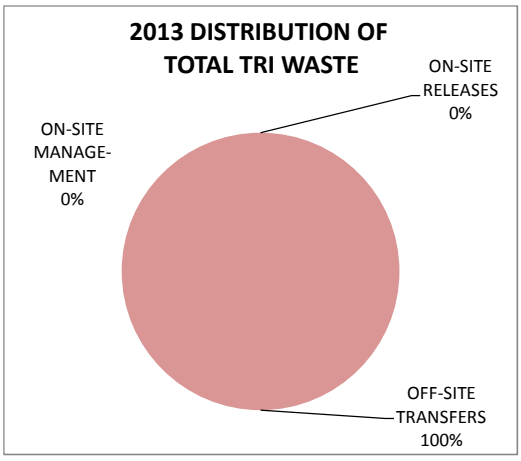
JOHNSON CONTROLS BATTERY PLANT, CONT.

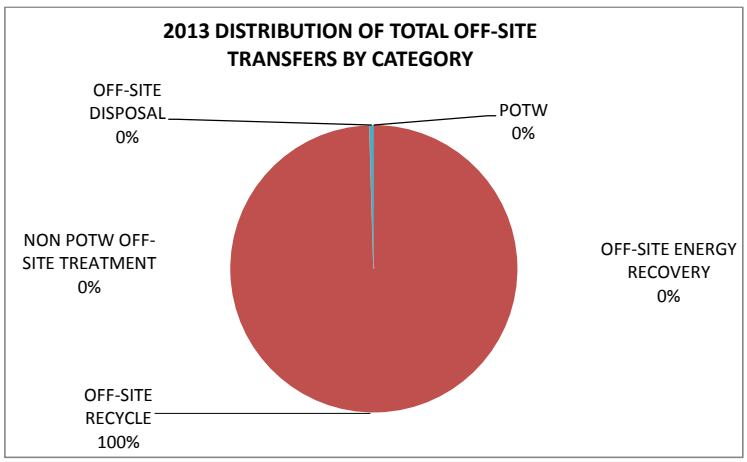
GRAPHICAL INFORMATION:







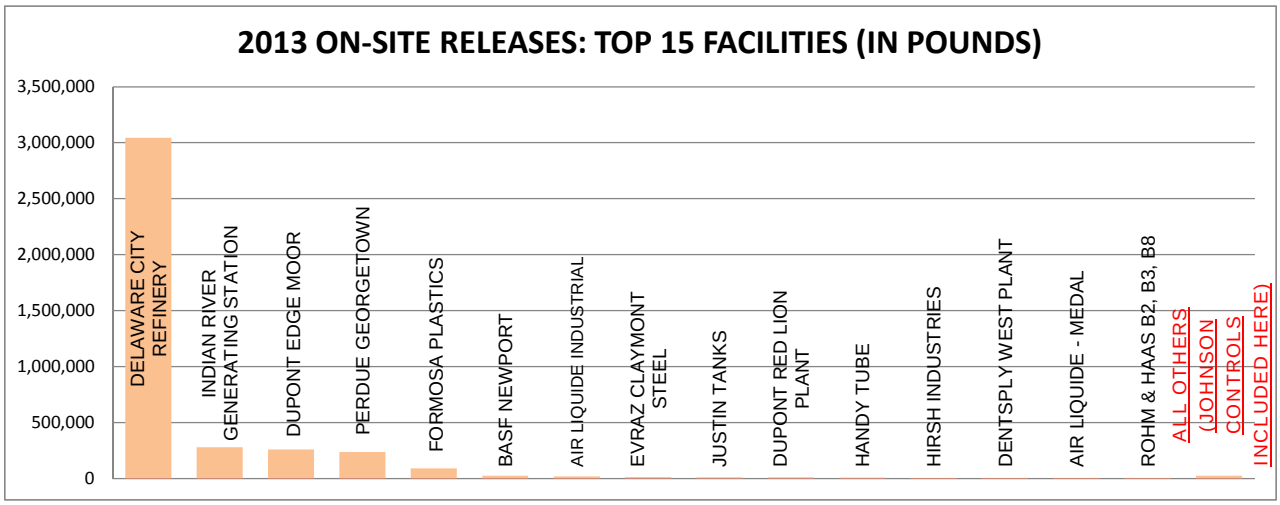


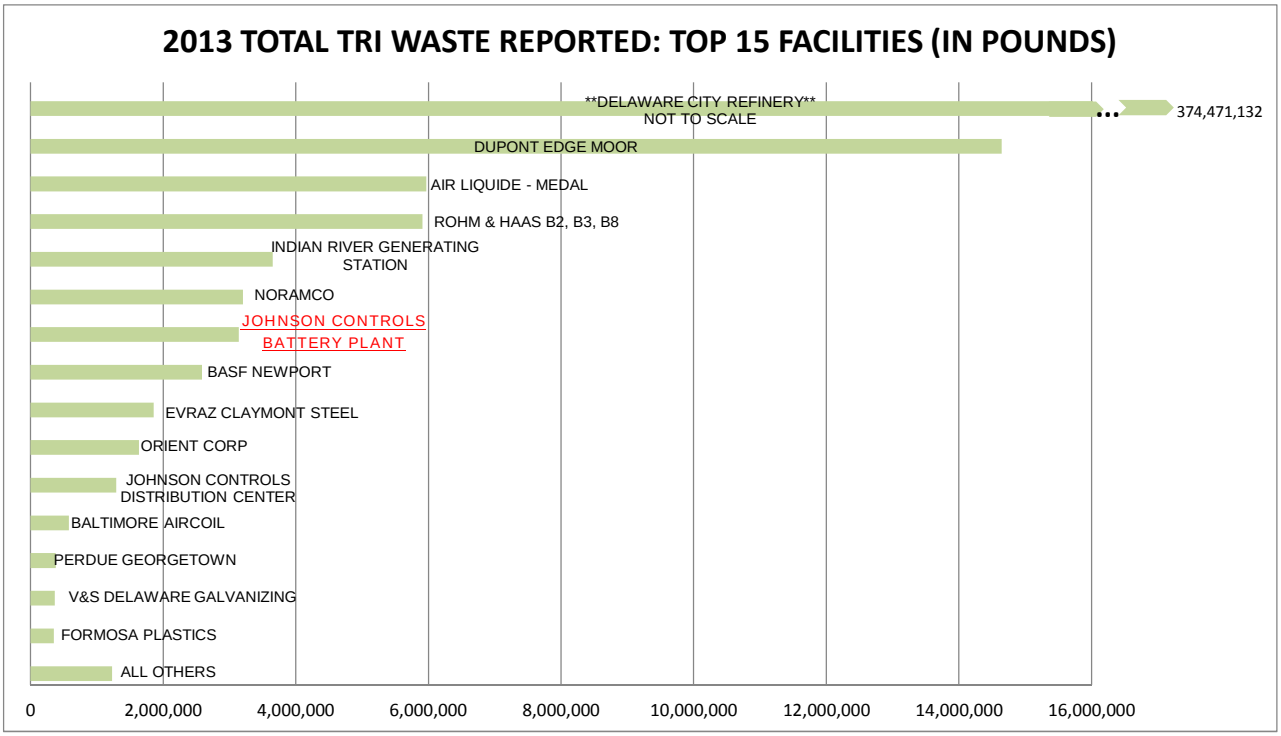


TRI FACILITY PROFILES

JOHNSON CONTROLS BATTERY PLANT, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Johnson Controls ranks 16th in the nation for off-site transfers of lead compounds (out of 3,782 facilities).

TRI FACILITY PROFILES

JOHNSON CONTROLS DISTRIBUTION CENTER

LOCATION/CONTACT:

Address: 50 Patriot Drive
Middletown, DE 19709

Phone: (302)-696-3209

Contact: Rick Thompson

FACILITY OVERVIEW:

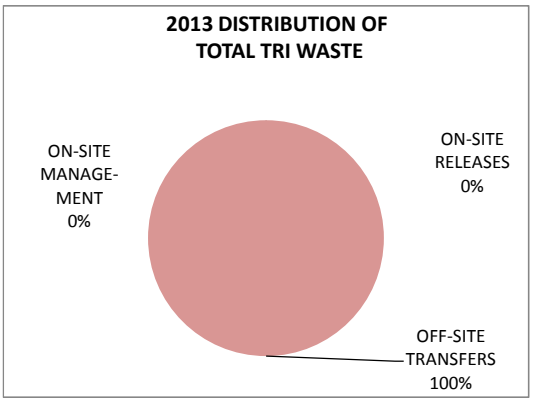
Johnson Controls Distribution Center forms and fills batteries, then prior to shipping; the batteries are washed and then labeled with the specified decal by the customer. From their battery plant, that is located 1.5 miles away in Middletown, the batteries are mostly shipped to customers within the Northeast. These batteries are used in a wide variety of vehicle types including passenger, commercial, agricultural, golf carts, and boats. In addition to many types of batteries Johnson Controls Middletown Distribution Center ships, there are just as many brands that leave the facility each day as well.

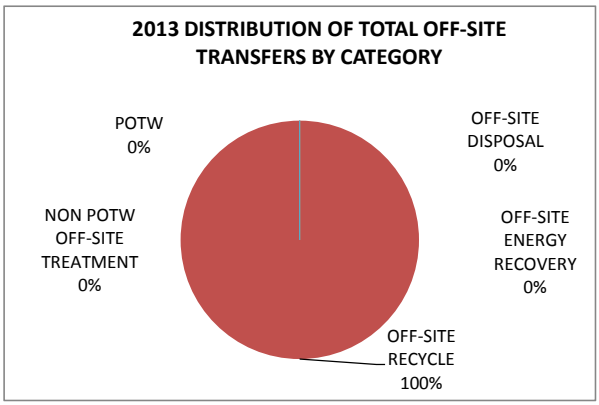
Johnson Controls Distribution Center has reported since 2011. The facility reported on one chemical in 2013, lead compounds. All of the lead compounds reported are sent off-site for recycling. The lead compounds that are shipped off-site for recycling, are from the in-plant junks and warranty returns from customers. Lead compounds are utilized in the construction of the batteries.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
LEAD COMPOUNDS	0	0	0	0	1,293,566	0	YES	YES
TOTAL	0	0	0	0	1,293,566	0		

GRAPHICAL INFORMATION:

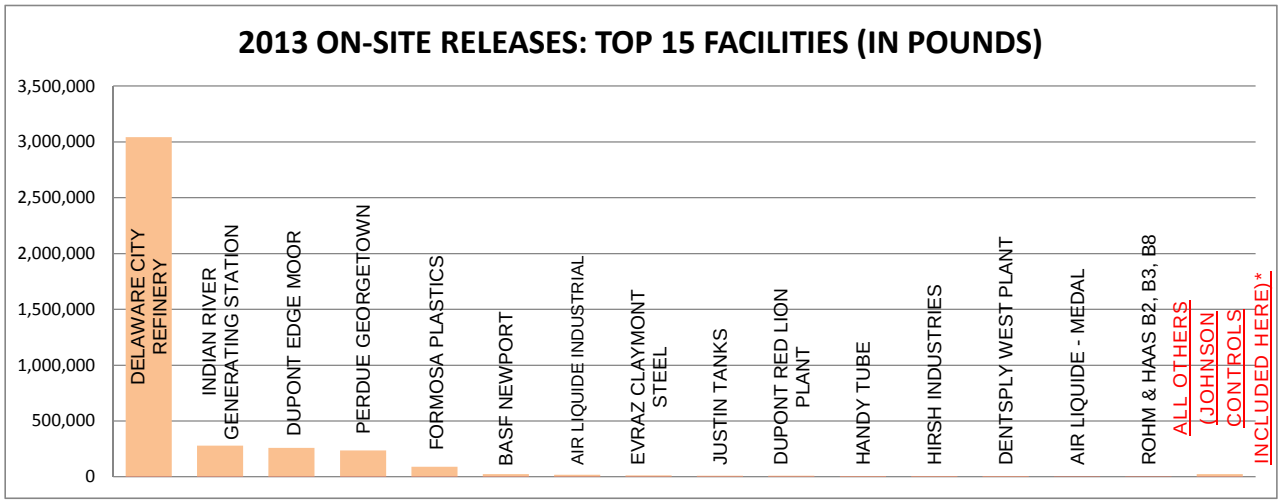




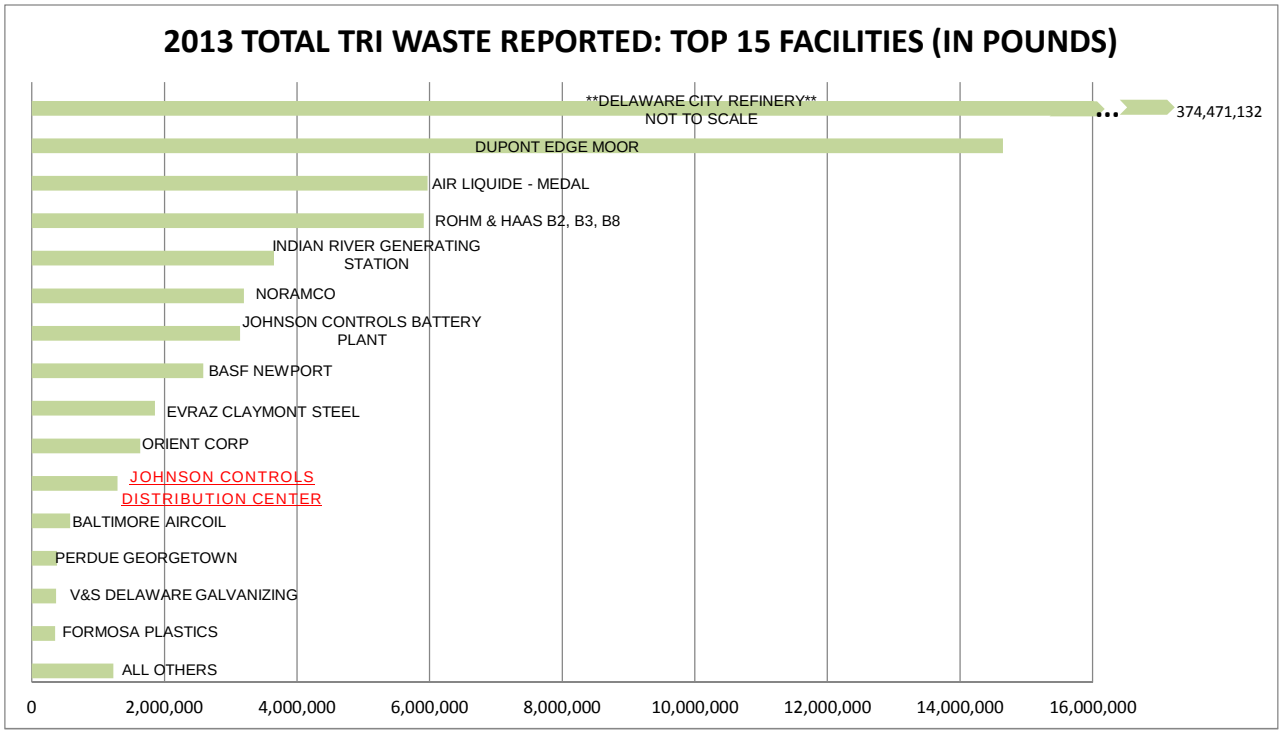
TRI FACILITY PROFILES

JOHNSON CONTROLS DISTRIBUTION CENTER, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:



*Johnson Controls Distribution Center ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site. Comparisons only include facilities reporting on Form R.



NOTABLE 2013 NATIONAL RANKINGS:

Johnson Controls Distribution Center ranks 32nd in off-site transfers of lead compounds (out of 3,782 facilities).

TRI FACILITY PROFILES

JUSTIN TANKS

LOCATION/CONTACT:

Address: 21413 Cedar Creek Ave.
Georgetown, DE 19947

Phone: (302)-856-3521

Contact: Edward Short

FACILITY OVERVIEW:

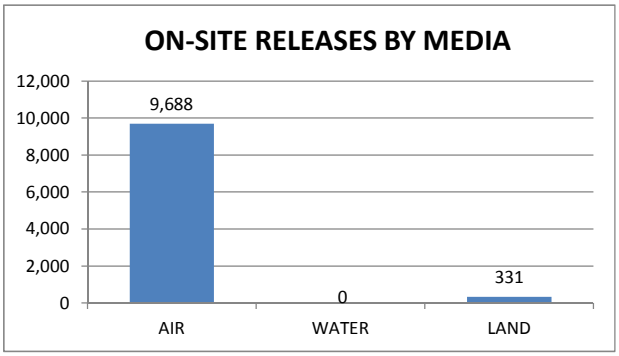
Justin Tanks manufactures a wide variety of Fiberglass Reinforced Plastic (FRP) tanks for use in the chemical, agricultural, and food industries.

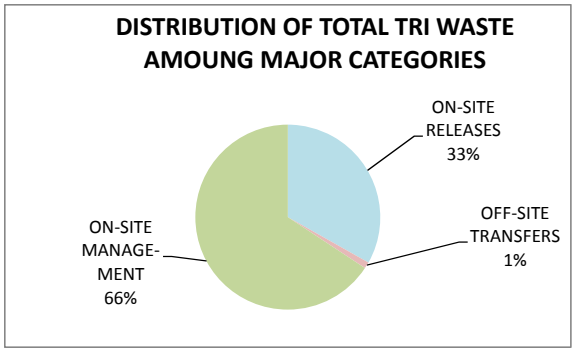
Justin Tanks has reported since 1987. The facility reported on one TRI chemical, styrene, for 2013. Styrene is used as a monomer in the polymerization of fiberglass resin. The majority of the styrene is released to the air during the process of applying fiberglass reinforcement to the tank. During polymerization and curing, small amounts of styrene are released, and the amount of styrene release diminishes to zero at full cure. No release occurs after the tank polymerization and curing process is complete. On-site release of styrene was down 25% for 2013, compared to 2012, with production down by 20% (see *Total On-site Releases Per Year Graph* on the next page).

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
STYRENE	9,688	0	331	10,019	331	19,880	NO	YES
TOTAL	9,688	0	331	10,019	331	19,880		

GRAPHICAL INFORMATION:

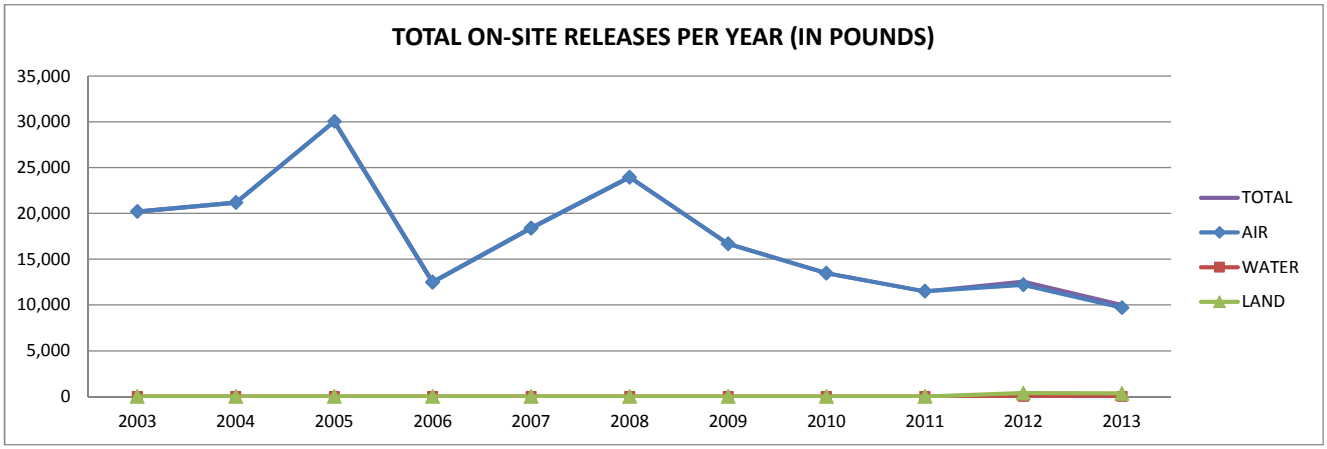


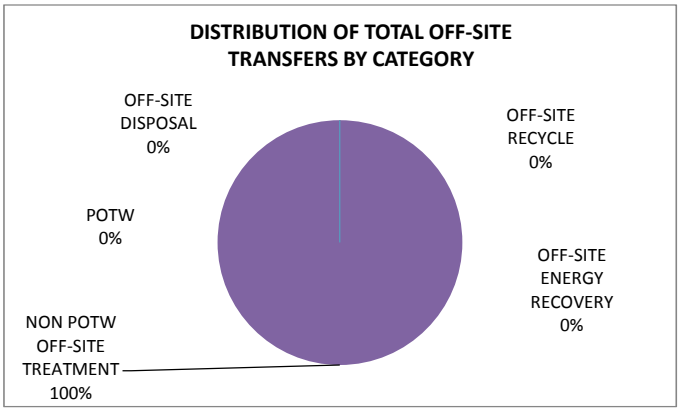


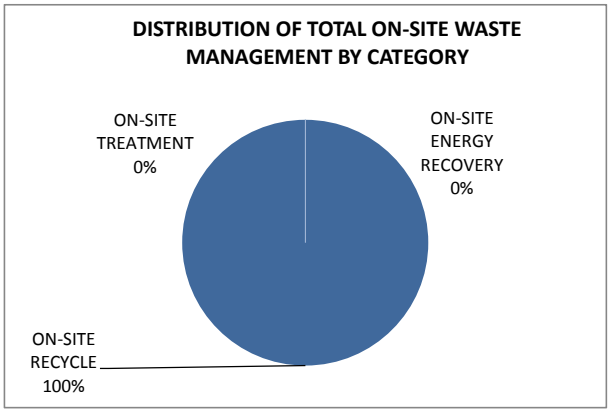
TRI FACILITY PROFILES

JUSTIN TANKS, CONT.

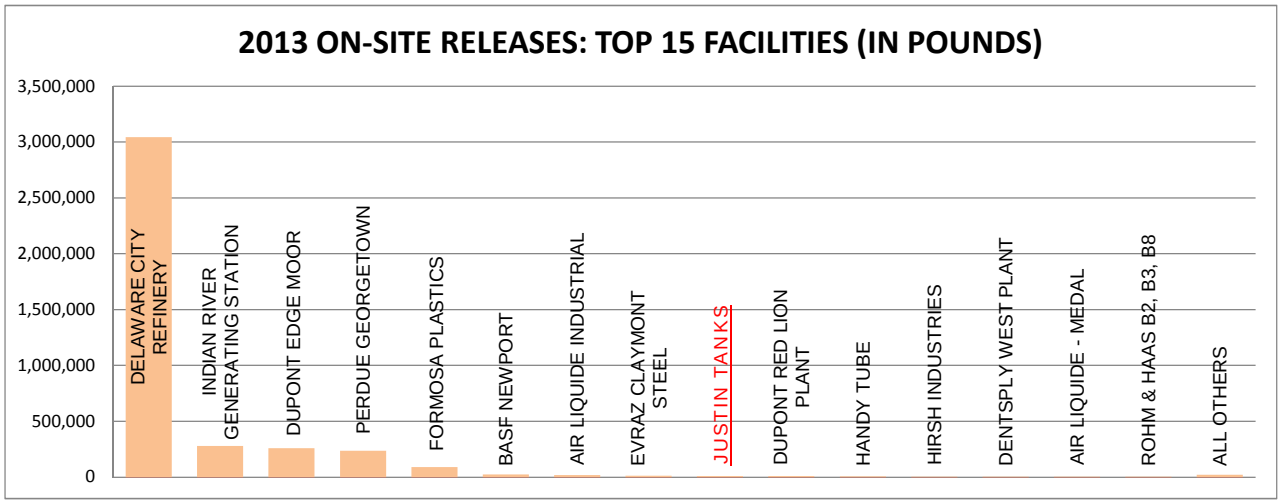
GRAPHICAL INFORMATION CONT.:







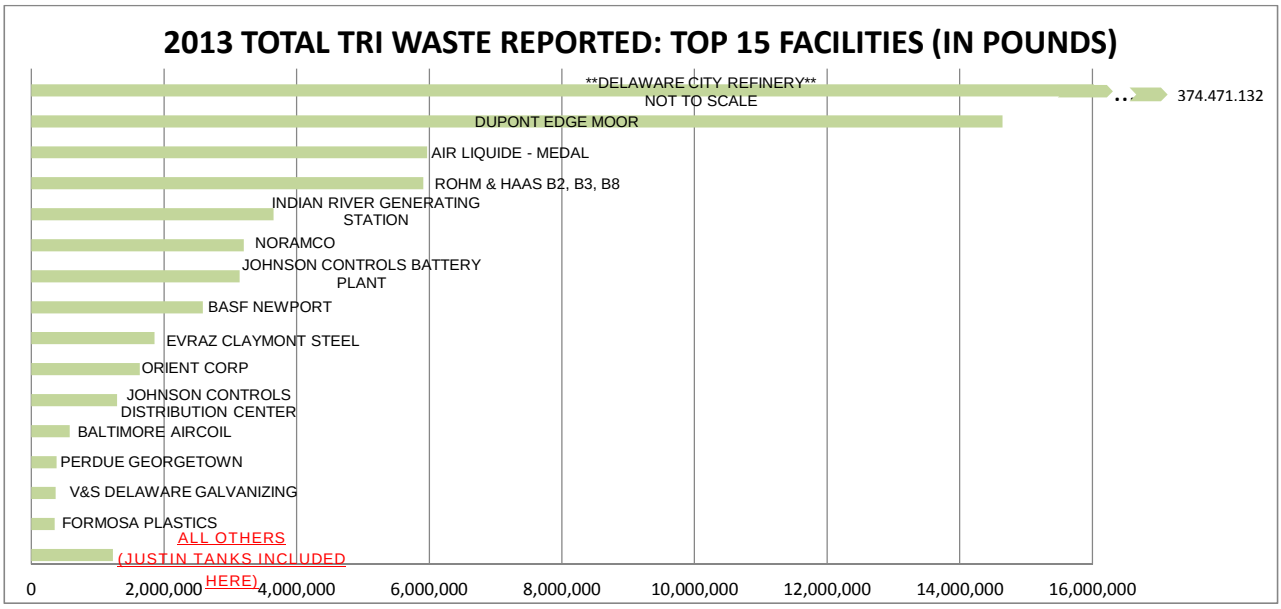
COMPARISON TO OTHER DELAWARE TRI FACILITIES:



TRI FACILITY PROFILES

JUSTIN TANKS, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES CONT:



NOTABLE 2013 NATIONAL RANKINGS:

Justin Tanks ranks 12th in on-site recycling of styrene (out of 1,223 facilities).

TRI FACILITY PROFILES

KUEHNE

LOCATION/CONTACT:

Address: 1645 River Road
Delaware City, DE 19706

Phone: (302)-834-4557

Contact: Alan Rogers

FACILITY OVERVIEW:

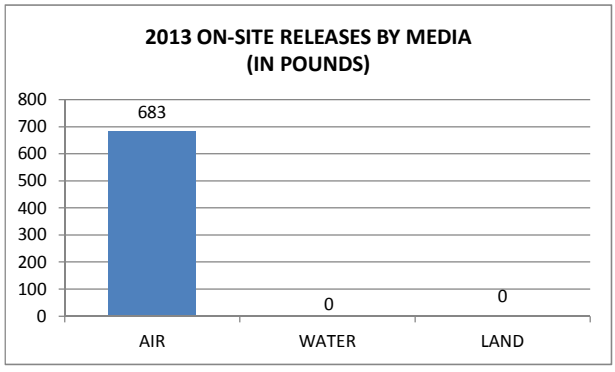
Kuehne reports under the North American Industrial Classification System (NAICS) as 325181, which covers the manufacturing of basic inorganic chemicals. Material produced at the facility is used primarily for municipal water and wastewater treatment.

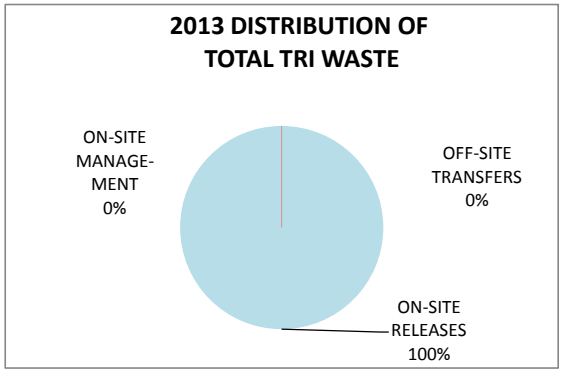
Kuehne has reported since 1987, previously reporting under the company Chloramone. For 2013, the facility reported on one chemical, chlorine, with all on-site releases being made to air. Chlorine is repackaged for sale and also used in the production of sodium hypochlorite (bleach).

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
CHLORINE	683	0	0	683	0	0	NO	NO
TOTAL	683	0	0	683	0	0		

GRAPHICAL INFORMATION:

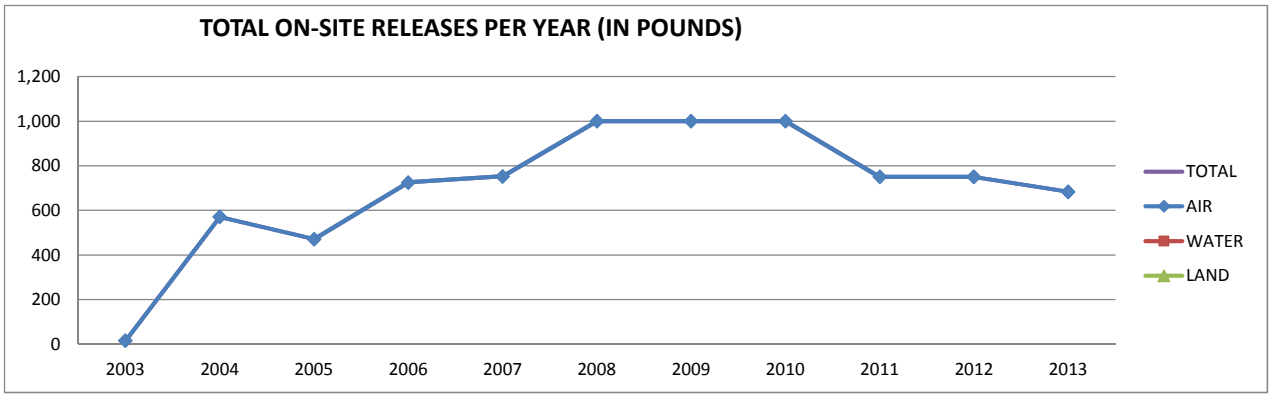




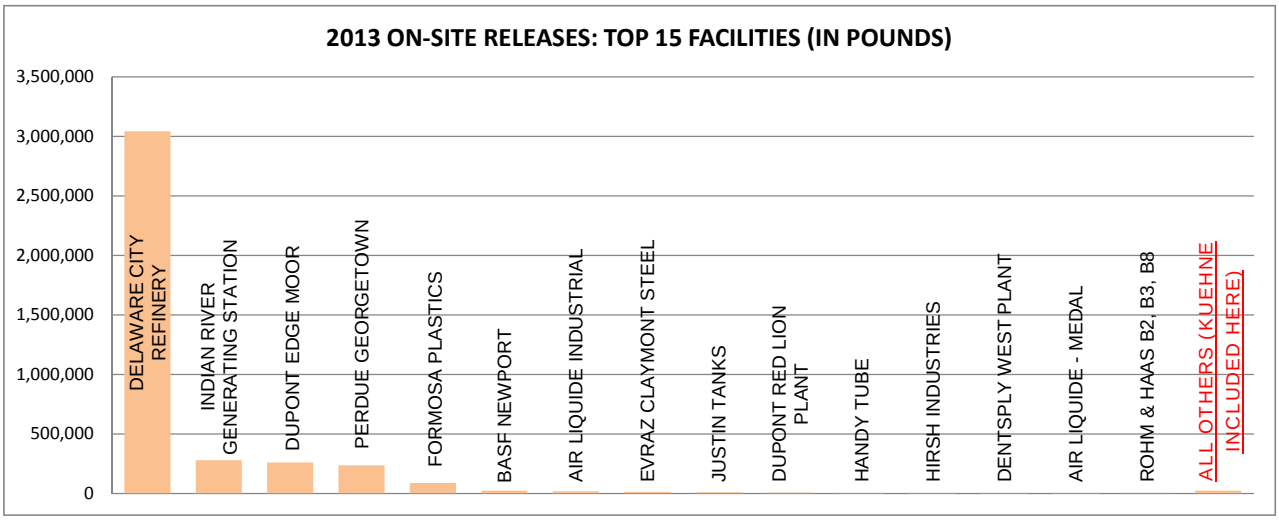
TRI FACILITY PROFILES

KUEHNE, CONT.

GRAPHICAL INFORMATION:



COMPARISON TO OTHER DELAWARE TRI FACILITIES:



Kuehne ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

NOTABLE 2013 NATIONAL RANKINGS:

Kuehne ranks 100th in on-site releases of chlorine for chemical facilities (NAICS 325) (out of 281 facilities).

TRI FACILITY PROFILES

MACDERMID

LOCATION/CONTACT:

Address: 701 Industrial Drive
Middletown, DE 19709

Phone: (302)-378-3100

Contact: Ken McCullough

FACILITY OVERVIEW:

MacDermid, Inc., a Platform Specialty Products company, manufactures photopolymer resins for the graphic arts and printing industry. Photopolymer resin will crosslink when exposed to UV radiation and become rubber material suitable for use as flexible printing plates. MacDermid also cuts to size and laminates coated film from rolls produced by MacDermid, UK.

The facility has reported since 1987, previously as Hercules-Middletown. MacDermid reported two chemicals in 2013, diisocyanates and toluene diisocyanates (mixed isomers), both on short Form A. Isocyanates are used in the manufacture of polyurethanes which are precursors to photopolymer resins. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.)

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
DIISOCYANATES*	0	0	0	0	0	0	NO	NO
TOLUENE DIISOCYANATE (MIXED ISOMERS)*	0	0	0	0	0	0	NO	NO
TOTAL	0	0	0	0	0	0		

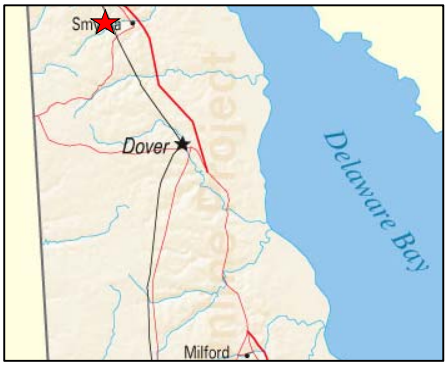
*Reported on short Form A

GRAPHICAL INFORMATION:

TRI reports for this facility were submitted on Short Form A. No on-site releases, off-site transfers, or on-site waste management activities are reported. Total reportable waste activities for this facility do not exceed 500 pounds per chemical reported.

TRI FACILITY PROFILES

METAL MASTERS



LOCATION/CONTACT:

Address: 100 Industrial Blvd.
Clayton, DE 19938

Phone: (302)-653-3000

Contact: Richard Murphy

FACILITY OVERVIEW:

Eagle Group manufactures commercial stainless steel foodservice equipment. Their Metal Masters product line includes sinks, tables, food warming equipment, serving equipment, shelving of both solid and wire design, and custom fabrications. The raw metals are purchased in sheet or wire form and then sheared, punched, formed, welded, spot welded, ground and finished to produce an end product.

Metal Masters has reported since 2001. The facility reported on 2 chemicals in 2013, nickel and chromium, with on-site releases being only to air. These chemicals are component parts of the stainless steel and are released to air during the welding phase. These releases to air account for less than 0.01% of the total waste management. All scrap metal which is not able to be used for finished product is recycled off-site. A smaller portion of the waste that is generated as grinding dust is shipped off-site for disposal.

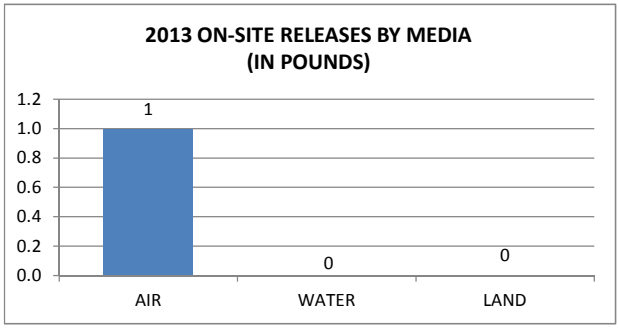
2013 TRI DATA (REPORTED IN POUNDS):

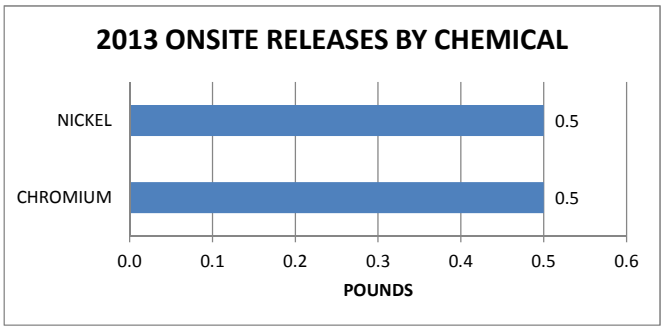
	ON-SITE RELEASES							
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
CHROMIUM	0.5	0	0	0.5	170,893	0	NO	NO
NICKEL	0.5	0	0	0.5	55,802	0	NO	YES
TOTAL	1	0	0	1	226,695	0		

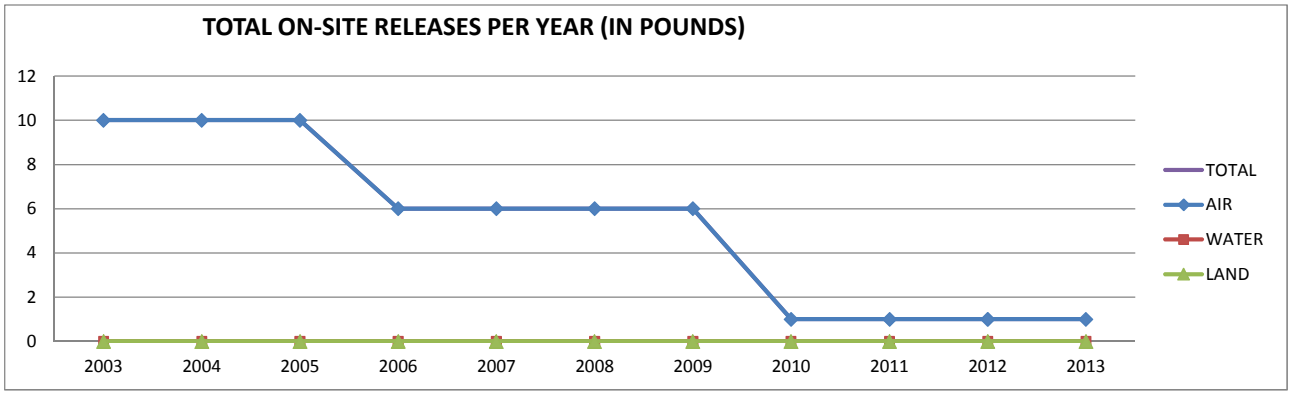
TRI FACILITY PROFILES

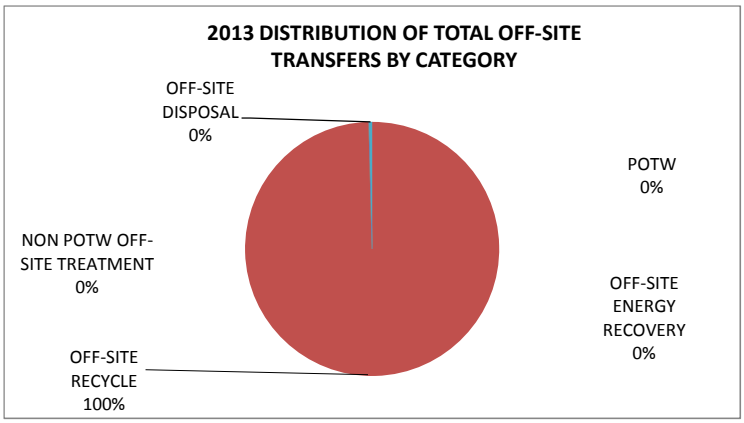
METAL MASTERS, CONT.

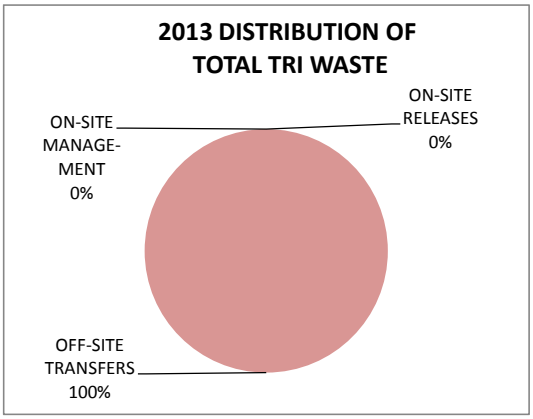
GRAPHICAL INFORMATION:







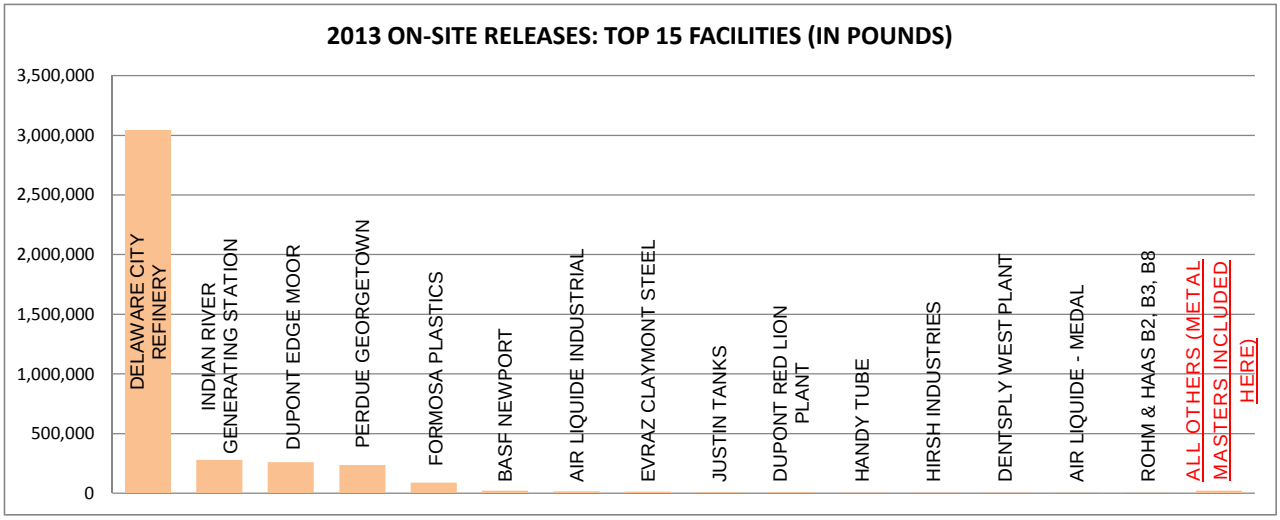




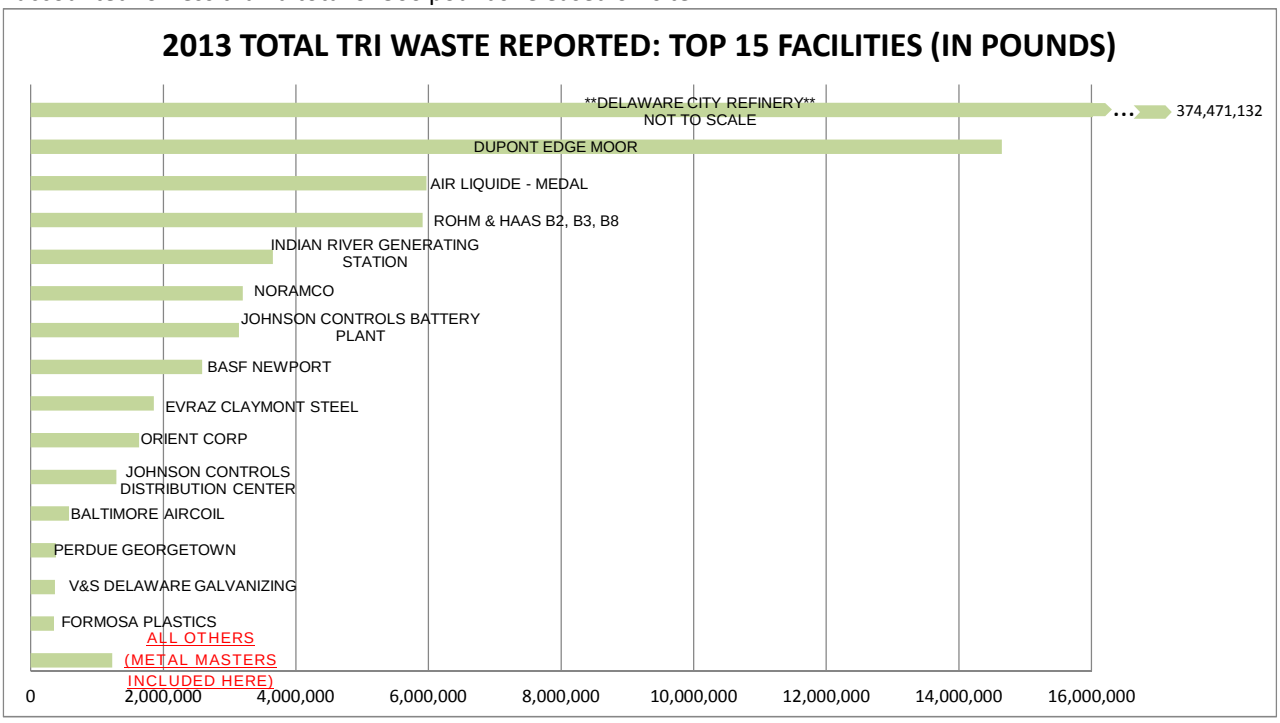
TRI FACILITY PROFILES

METAL MASTERS, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:



Metal Masters ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.



NOTABLE 2013 NATIONAL RANKINGS:

Metal Masters ranks 64th in off-site recycling of chromium for fabricated metal facilities (NAICS 332) (out of 861 facilities).

TRI FACILITY PROFILES

MOTECH AMERICAS

LOCATION/CONTACT:

Address: 231 Lake Drive
Newark, DE 19702

Phone: (302) 323-1061

Contact: Dave Holleran

FACILITY OVERVIEW:

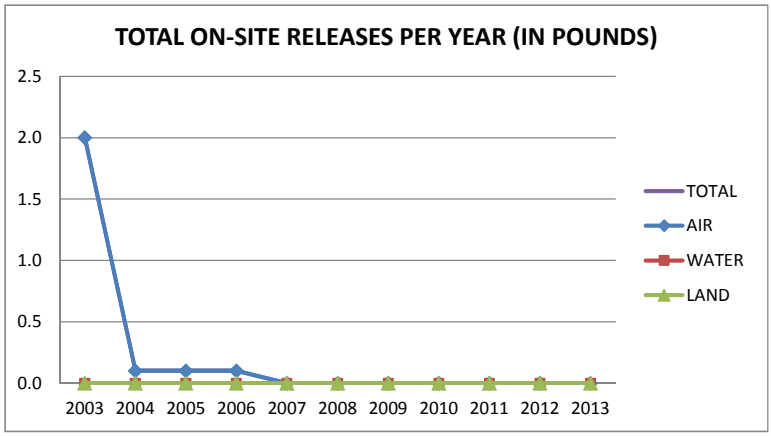
Motech Americas manufactures photovoltaic (pv) cells, pv modules, pv inverters, and pv power systems which are used in the production of solar modules. The Newark facility distributes solar module systems throughout North America.

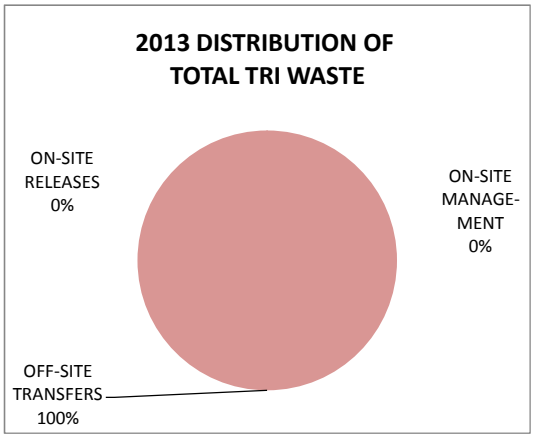
Motech Americas has reported since 2001. The facility reported on 1 chemical in 2013, lead. All of the lead compounds are sent off-site for treatment. Lead is utilized in the production of poly crystalline solar modules.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
LEAD	0	0	0	0	212	0	YES	YES
TOTAL	0	0	0	0	212	0		

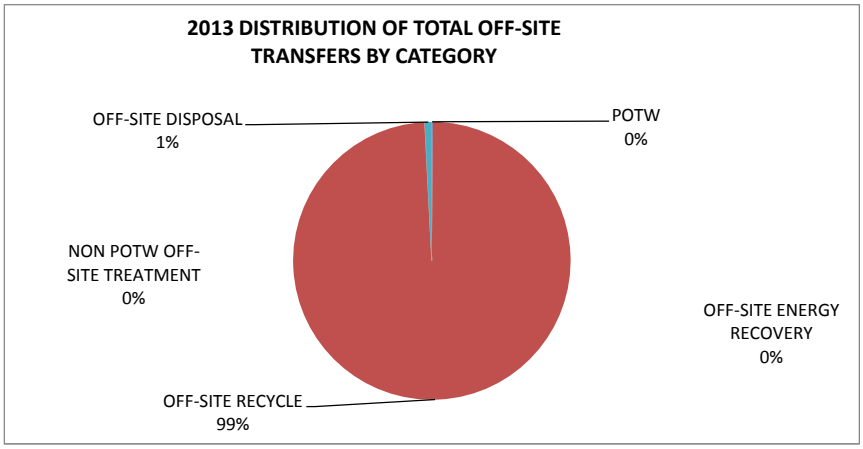
GRAPHICAL INFORMATION:





MOTECH AMERICAS, CONT.

GRAPHICAL INFORMATION CONT.:



COMPARISON TO OTHER DELAWARE TRI FACILITIES:

Motech Americas ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.

Motech Americas ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

TRI FACILITY PROFILES

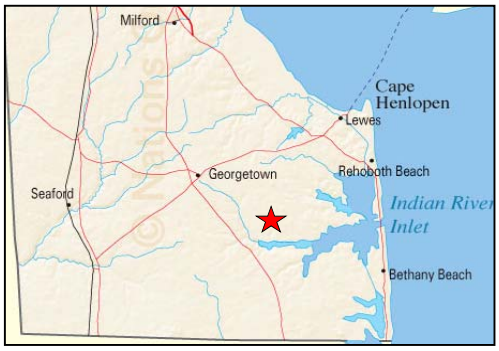
MOUNTAIRE FARMS OF DELAWARE

LOCATION/CONTACT:

Address: 29106 John J. Williams Highway
Millsboro, DE 19966

Phone: (302)-934-3123

Contact: Roger Marino



FACILITY OVERVIEW:

Mountaire Farms of Delaware is located in Millsboro, and hatches chickens for growers, produces feed for poultry growers, produces poultry byproducts, and produces retail, wholesale and export chicken products.

The facility has reported since 1987, previously as Townends. For 2013, Mountaire Farms of Delaware reported four TRI chemicals, hydrogen sulfide and metallic compounds (Copper, Manganese, and Zinc). Hydrogen sulfide is a byproduct of anaerobic wastewater treatment. The metallic compounds are used in poultry feed and are reported on form A. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.) Persistent Bio-Accumulative Toxic (PBT) Chemicals, such as lead, are ineligible for Form A.

Mountaire Farms in previous years has also reported on ammonia, a byproduct of poultry processing that is treated in the on-site wastewater treatment plant. Since the biological treatment of the wastewater fluctuates, ammonia is sometimes below the reporting threshold, which it was in 2013.

2013 TRI DATA (REPORTED IN POUNDS):

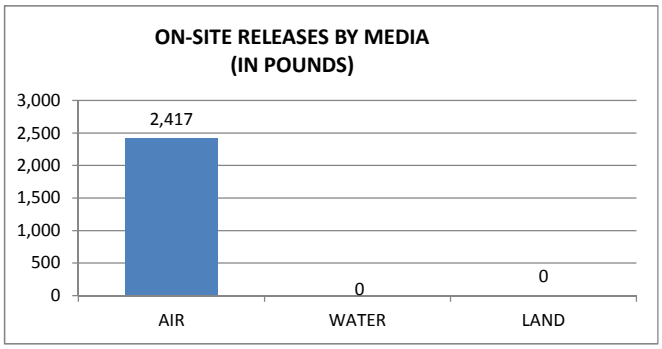
	ON-SITE RELEASES				OFF-SITE	ON-SITE		
CHEMICAL	AIR	WATER	LAND	TOTAL	TRANSFERS	MANAGEMENT	PBT	CARCINOGEN
COPPER COMPOUNDS*	0	0	0	0	0	0	NO	NO
HYDROGEN SULFIDE	2,417	0	0	2,417	0	58,265	NO	NO
MANGANESE COMPOUNDS*	0	0	0	0	0	0	NO	NO
ZINC COMPOUNDS*	0	0	0	0	0	0	NO	NO
TOTAL	2,417	0	0	2,417	0	58,265		

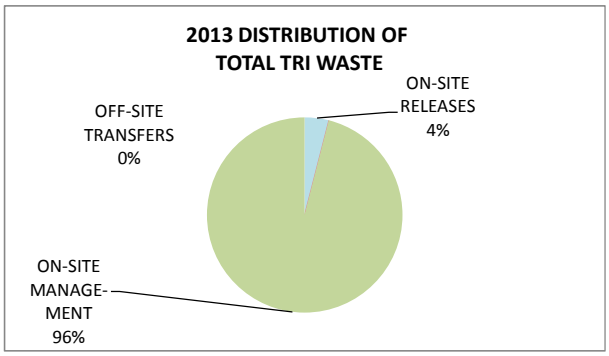
*Reported on short Form A

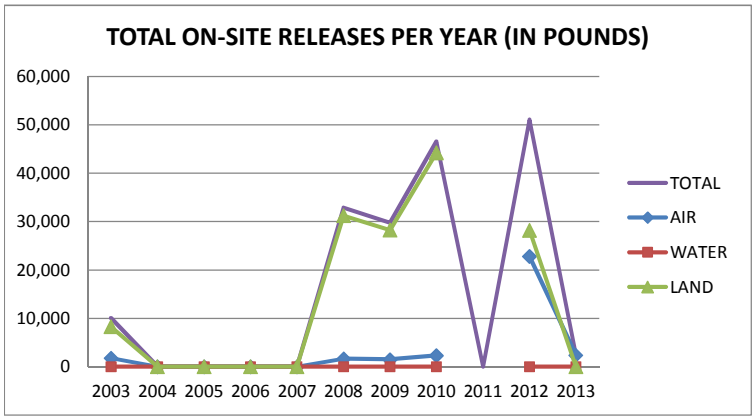
TRI FACILITY PROFILES

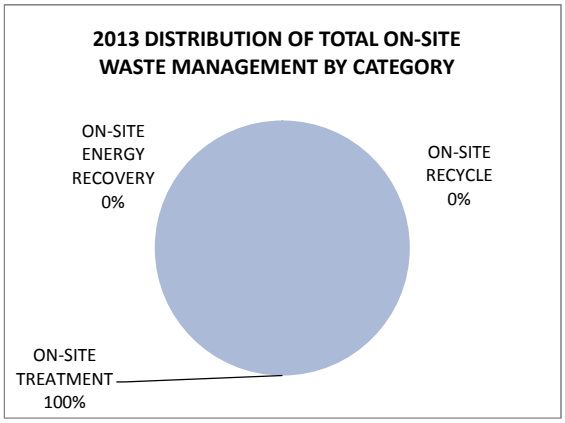
MOUNTAIRE FARMS OF DELAWARE, CONT.

GRAPHICAL INFORMATION CONT.:

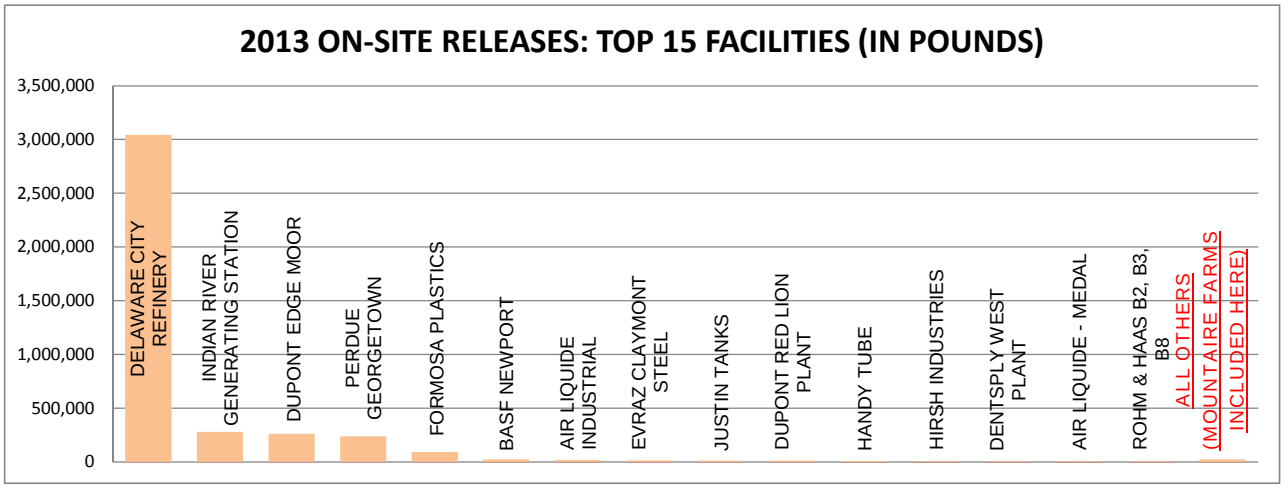






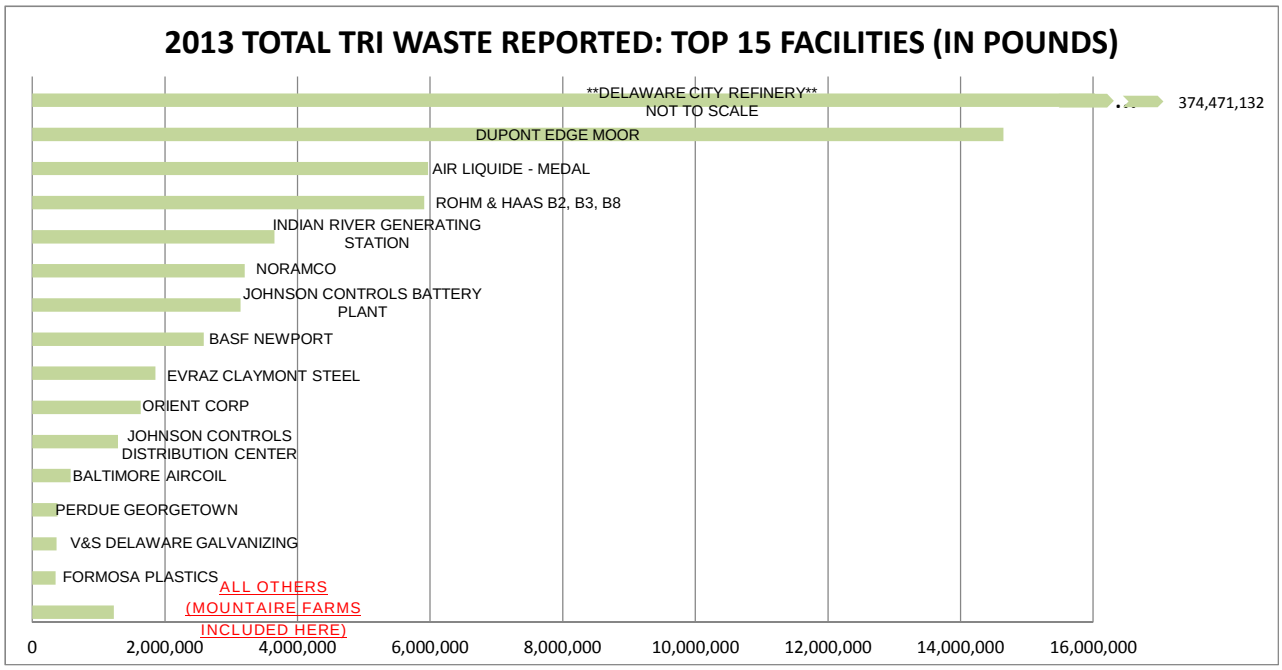


COMPARISON TO OTHER DELAWARE TRI FACILITIES:



MOUNTAIRE FARMS OF DELAWARE, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES CONT.:



NOTABLE 2013 NATIONAL RANKINGS:

Mountaire Farms of Delaware ranks 37th in the on-site treatment of hydrogen sulfide by food/beverage facilities (NAICS 311) (out of 85 facilities).

TRI FACILITY PROFILES

MOUNTAIRE FARMS- FRANKFORD

LOCATION/CONTACT:

Address: 11 Daisey Street
Frankford, DE 19945

Phone: (302)-934-3123

Contact: Roger Marino

FACILITY OVERVIEW:

Mountaire Farms-Frankford reported under the North American Industrial Classification System (NAICS) as 311119, which covers animal food manufacturing, except facilities primarily engaged in custom grain grinding for animal feed. This location manufactures chicken feed.

Mountaire Farms-Frankford has reported since 1996. The facility reported on 3 chemicals in 2013, all on the short Form A. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs. of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.) Persistent Bio-Accumulative Toxic (PBT) Chemicals, such as polycyclic aromatic compounds (PACs), are ineligible for Form A. The facility recently converted to using natural gas in their boilers, resulting in PACs no longer being reported as released on-site in 2013.

2013 TRI DATA (REPORTED IN POUNDS):

	ON-SITE RELEASES				OFF-SITE	ON-SITE		
CHEMICAL	AIR	WATER	LAND	TOTAL	TRANSFERS	MANAGEMENT	PBT	CARCINOGEN
COPPER COMPOUNDS*	0	0	0	0	0	0	NO	NO
MANGANESE COMPOUNDS*	0	0	0	0	0	0	NO	NO
ZINC COMPOUNDS*	0	0	0	0	0	0	NO	NO
TOTAL	0	0	0	0	0	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

TRI reports for this facility were submitted on Short Form A. No on-site releases, off-site transfers, or on-site waste management activities are reported. Total reportable waste activities for this facility do not exceed 500 pounds per chemical reported.

TRI FACILITY PROFILES

NORAMCO

LOCATION/CONTACT:

Address: 500 Swedes Landing Road
Wilmington, DE 19801

Phone: (302)-888-4477

Contact: John Daly

FACILITY OVERVIEW:

Noramco, Inc. is the North American Chemical Operations subsidiary of Johnson & Johnson. Noramco manufactures and markets Active Pharmaceutical Ingredients (APIs) and fine chemicals for other Johnson & Johnson affiliated companies and to third-party trade customers. The majority of such trade sales consist of controlled substance pain management active pharmaceutical ingredients.

The facility has reported since 1987. Noramco reported seven chemicals in 2013, and all on-site releases of these chemicals were to the air through normal plant operations. The chemicals reported are comprised mainly of solvents that are used in the separation, synthesis, and purification of small molecule APIs made from natural plant materials. For this reason, the usage and release quantities of these chemicals are primarily tied to Noramco's production volumes. On-site releases for Noramco have decreased by 50% since 2003, the result of utlizing lean manufacturing programs to reduce waste and unneeded chemical processing and leveraging new technologies and sustainable chemistry initiatives (see *Total On-site Releases Per Year Graph* on the next page).

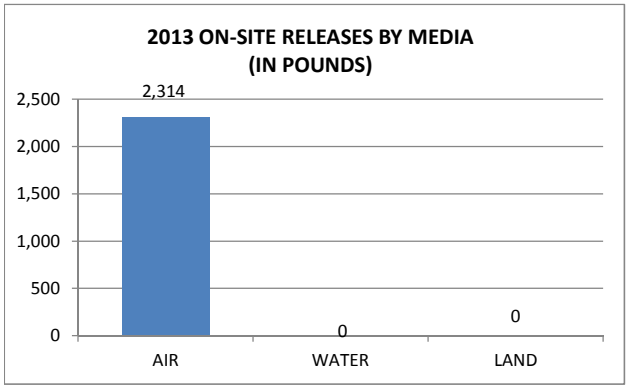
2013 TRI DATA (REPORTED IN POUNDS):

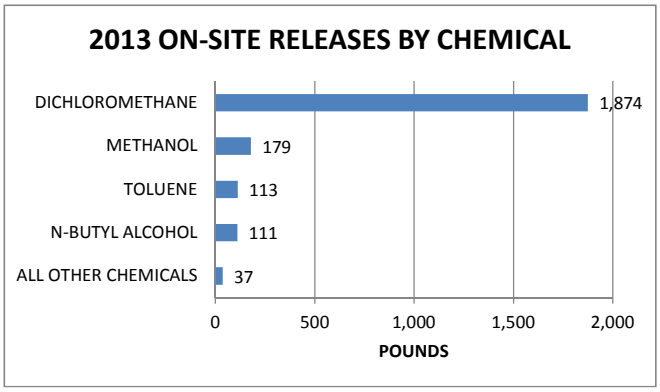
CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
DICHLOROMETHANE	1,874	0	0	1,874	58,083	58,083	NO	YES
ETHYLENE GLYCOL	10	0	0	10	11,316	0	NO	NO
FORMIC ACID	17	0	0	17	0	0	NO	NO
METHANOL	179	0	0	179	121,161	121,161	NO	NO
N-BUTYL ALCOHOL	111	0	0	111	834,212	834,212	NO	NO
PERACETIC ACID	10	0	0	10	9,960	0	NO	NO
TOLUENE	113	0	0	113	548,386	548,385	NO	NO
TOTAL	2,314	0	0	2,314	1,583,118	1,561,841		

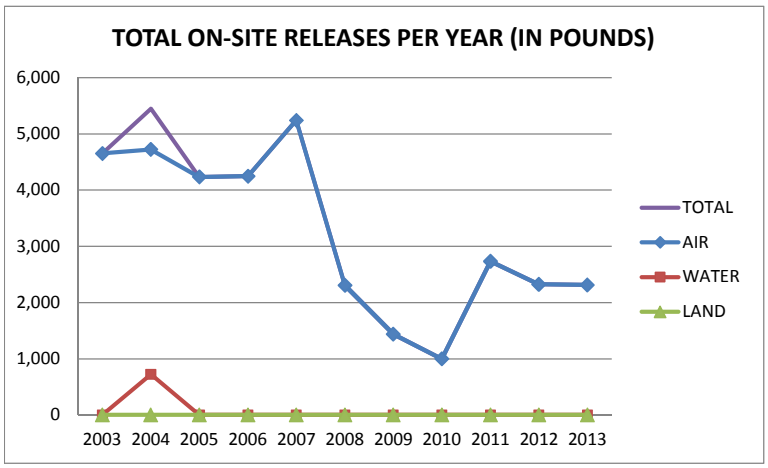
TRI FACILITY PROFILES

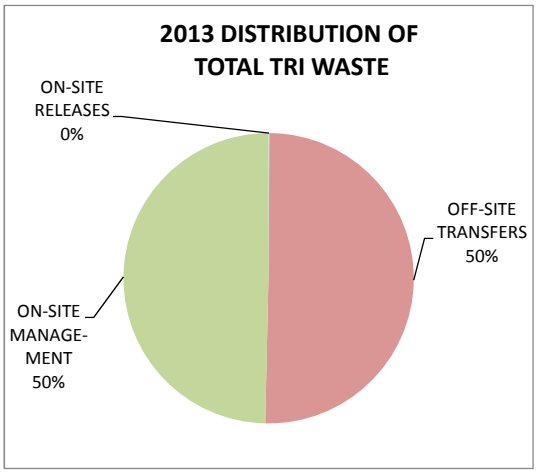
NORAMCO, CONT.

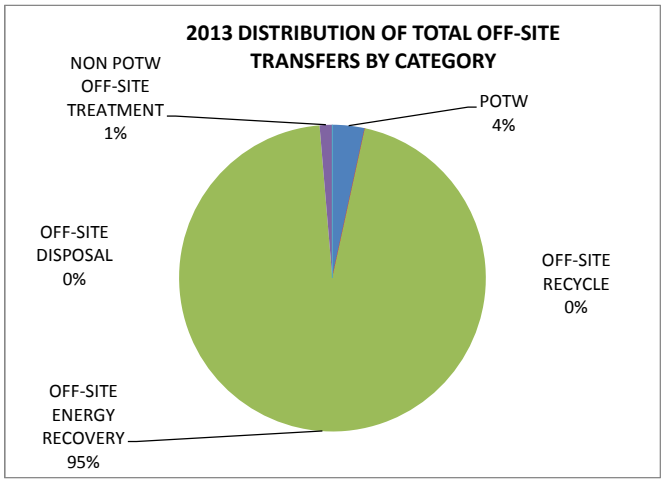
GRAPHICAL INFORMATION:

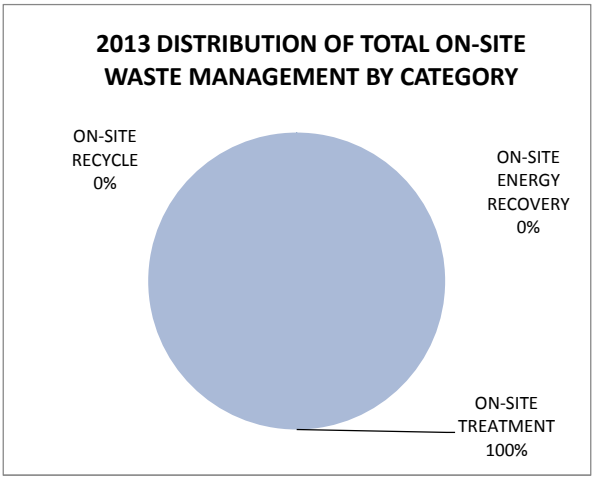








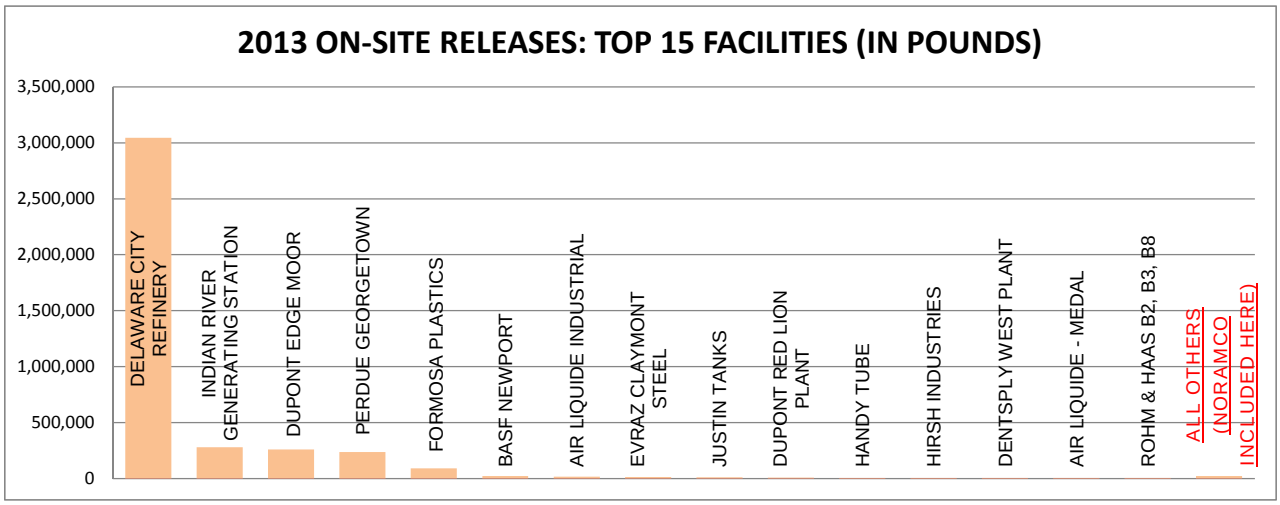


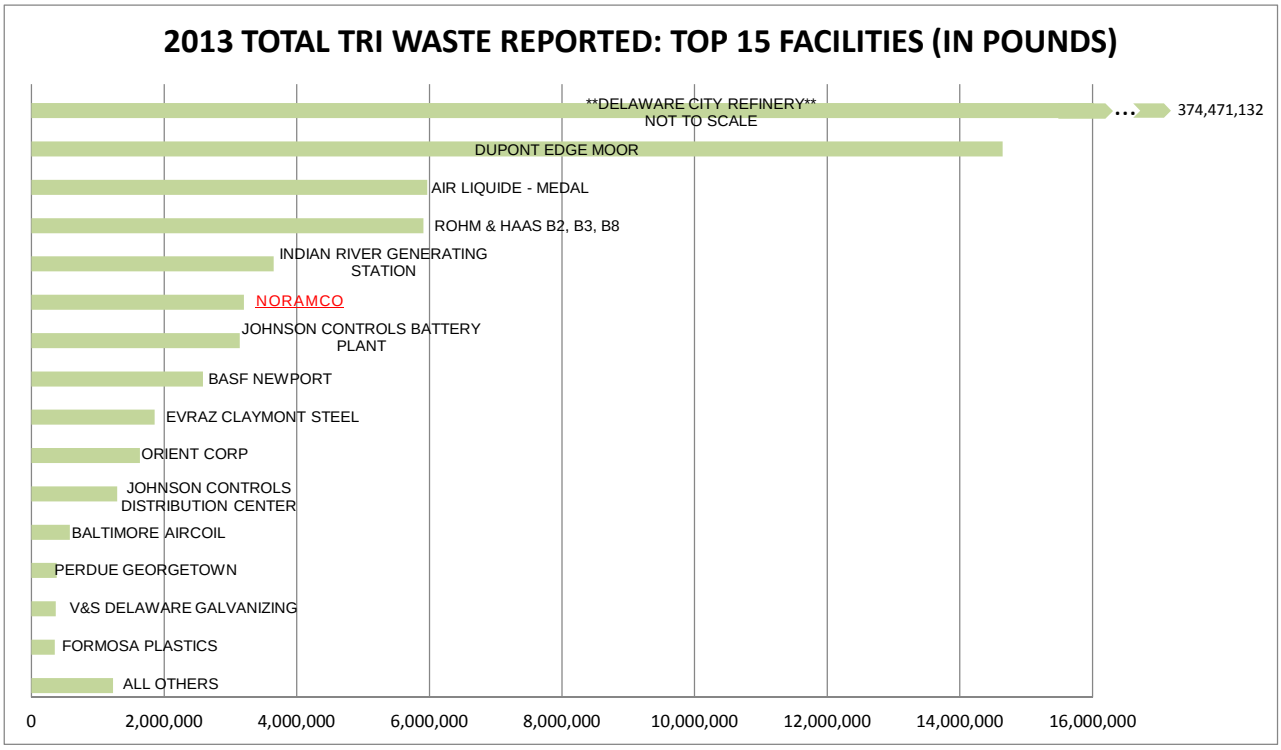


TRI FACILITY PROFILES

NORAMCO, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Noramco ranks 3rd in the nation for off-site transfers of n-butyl alcohol (out of 723 facilities).

Noramco ranks 6th in the nation for on-site treatment of n-butyl alcohol (out of 723 facilities).

TRI FACILITY PROFILES

ORIENT CORPORATION

LOCATION/CONTACT:

Address: 111 Park Ave
Seaford, DE 19973

Phone: (302)-628-1300

Contact: Dave Curry

FACILITY OVERVIEW:

Orient Corporation distributes various dyes, pigment dispersions, and charge control agents. The Seaford plant produces Nigrosine Dye, a product used in phenolic and polyamide resins and specialty paints. Orient supplies a large share of domestic demand for this type of dye.

Orient has reported since 1992. The facility reported on four chemicals in 2013, with on-site releases only to air. Aniline is the predominant on-site release, accounting for 97% of the total, with remaining 3% attributable to nitrobenzene. Aniline and nitrobenzene are both used in the production of dyes.

In 2011, TRI reports included more detailed calculations and analytical testing that were not used in previous years, resulting in higher releases reported. In 2012, a thermal oxidizer was utilized for the destruction of aniline, which resulted in a decrease in on-site releases of 99% compared to 2011 (see *Total On-site Releases Per Year Graph* on the next page).

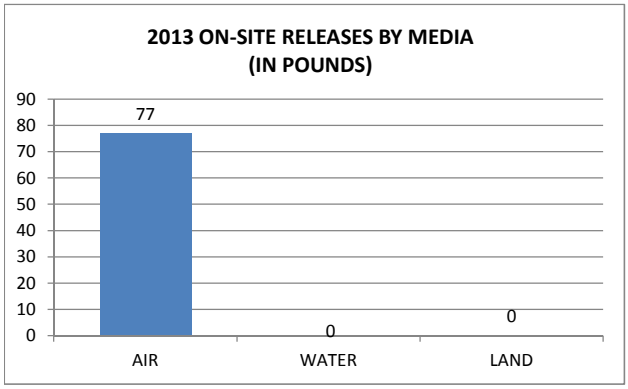
2013 TRI DATA (REPORTED IN POUNDS):

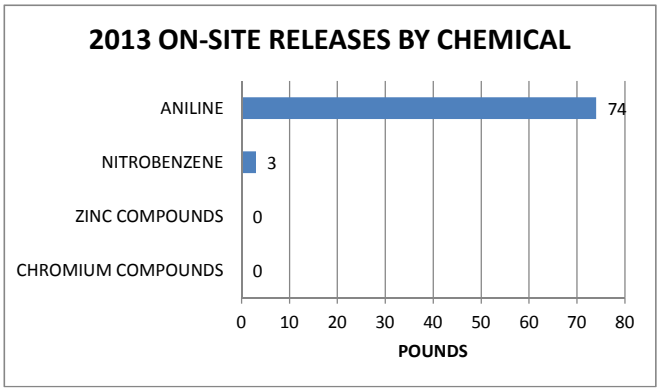
CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
ANILINE	74	0	0	74	1,689	1,630,000	NO	NO
CHROMIUM COMPOUNDS	0	0	0	0	0	0	NO	YES
NITROBENZENE	3	0	0	3	1	0	NO	YES
ZINC COMPOUNDS	0	0	0	0	0	0	NO	NO
TOTAL	77	0	0	77	1,690	1,630,000		

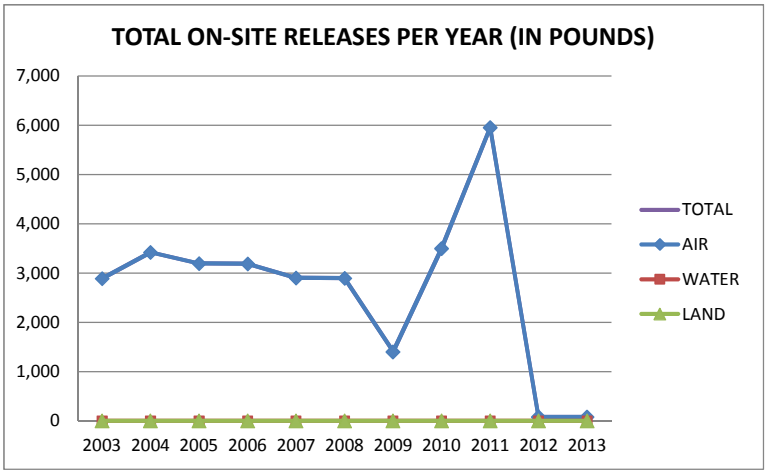
TRI FACILITY PROFILES

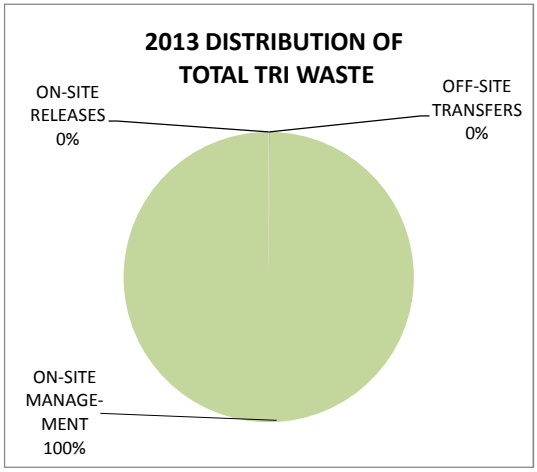
ORIENT CORPORATION, CONT.

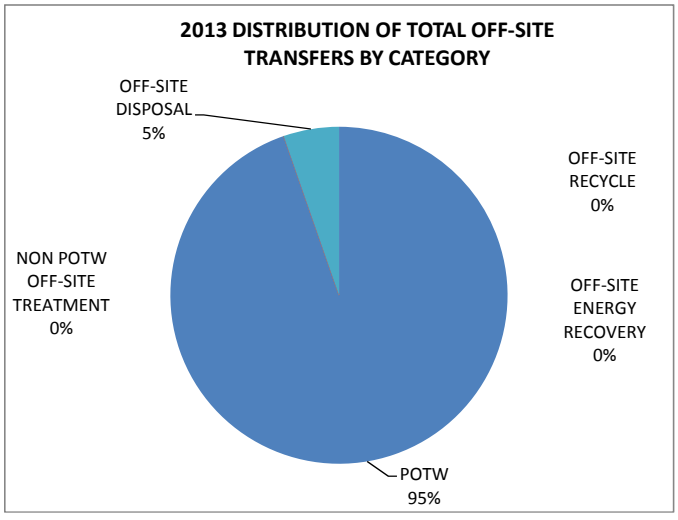
GRAPHICAL INFORMATION:

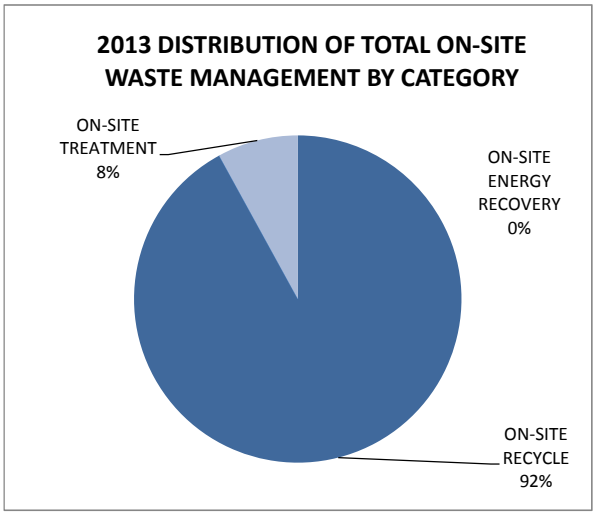








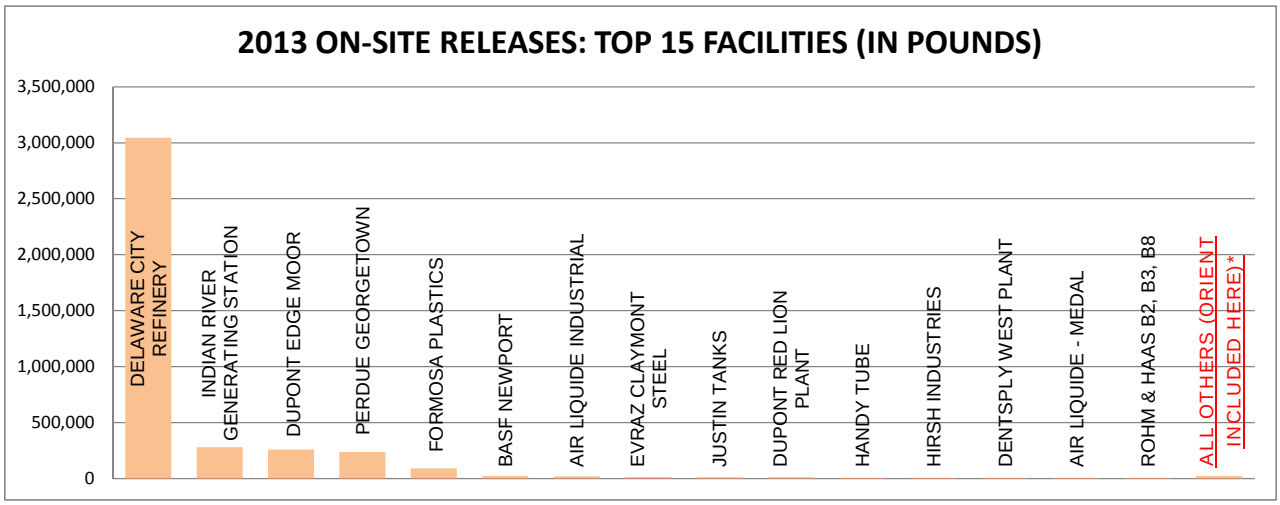




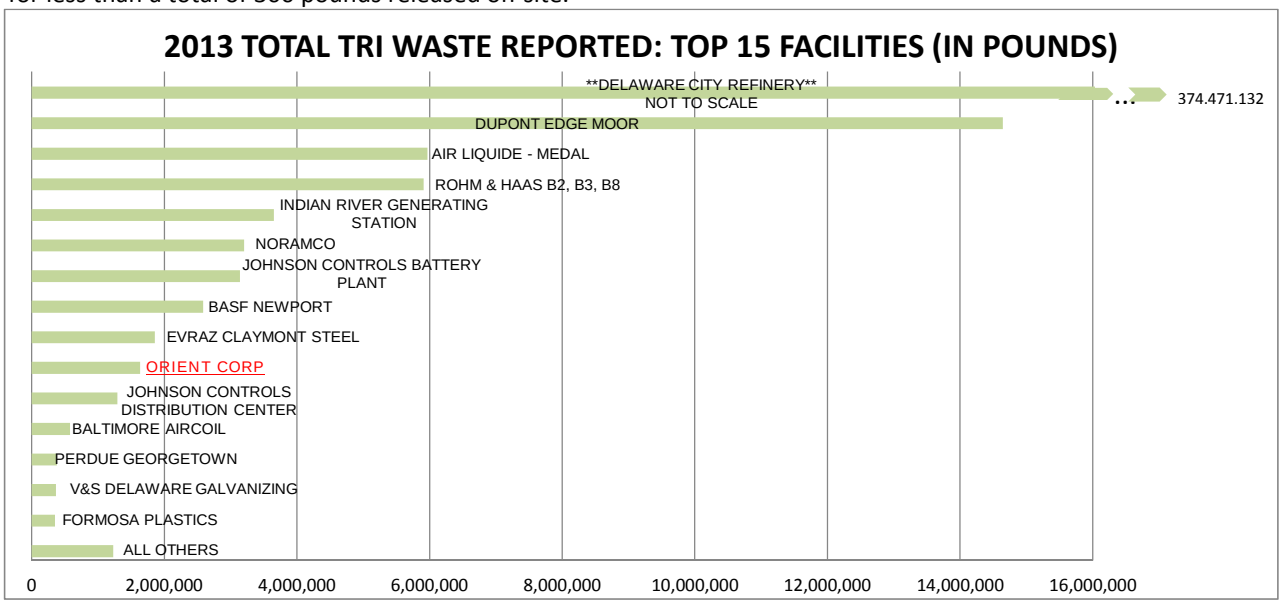
TRI FACILITY PROFILES

ORIENT, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES



*Orient ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.



NOTABLE 2013 NATIONAL RANKINGS:

Orient ranks 2nd in the nation for on-site recycling of aniline (out of 56 facilities).

TRI FACILITY PROFILES

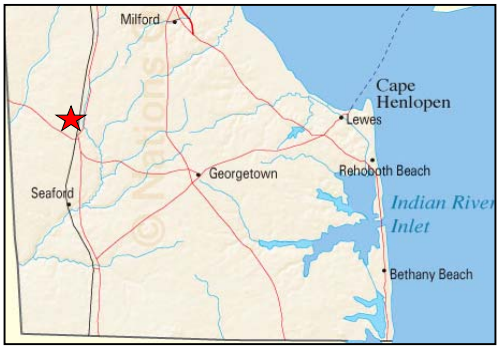
PERDUE BRIDGEVILLE

LOCATION/CONTACT:

Address: 16447 Adams Road
Bridgeville, DE 19933

Phone: (410)-543-3166

Contact: Julie Deyoung



FACILITY OVERVIEW:

Perdue Farms is a producer of poultry products. The Bridgeville facility is a feed mill that produces poultry feed.

Perdue Bridgeville has reported since 1995. The facility reported on three chemicals in 2013, all on short Form A. Form A reports do not include waste management activities. The chemicals reported are metal compounds that are used in poultry feed as nutritional ingredients. (Chemicals must have less than 500 lbs. of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.)

2013 TRI DATA (REPORTED IN POUNDS):

	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
CHEMICAL	AIR	WATER	LAND	TOTAL				
COPPER COMPOUNDS*	0	0	0	0	0	0	NO	NO
MANGANESE COMPOUNDS*	0	0	0	0	0	0	NO	NO
ZINC COMPOUNDS*	0	0	0	0	0	0	NO	NO
TOTAL	0	0	0	0	0	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

TRI reports for this facility were submitted on Short Form A. No on-site releases, off-site transfers, or on-site waste management activities are reported. Total reportable waste activities for this facility do not exceed 500 pounds per chemical reported.

TRI FACILITY PROFILES

PERDUE GEORGETOWN

LOCATION/CONTACT:

Address: 20621 Savannah Road
Georgetown, DE 19947

Phone: (410)-543-3166

Contact: Julie Deyoung

FACILITY OVERVIEW:

Perdue Farms is a producer of poultry products. The Georgetown facility processes chickens for sale to the retail market.

The facility has reported since 1987. Perdue Georgetown reported on three TRI chemicals for 2013: nitrate compounds, hydrogen sulfide and polycyclic aromatic compounds (PACs). Perdue's wastewater treatment plant digests ammonia and production waste from the poultry processing plant's wastewater stream and converts some of these wastes to nitrate compounds, which are discharged into a local stream. Hydrogen sulfide is a byproduct from anaerobic treatment of the organic wastes in the wastewater and is released to air. PACs are a byproduct of burning Number 6 fuel oil as a back-up fuel source for the boilers. Natural gas is the primary fuel for the boilers.

These reported on-site release amounts have varied in recent years because of changes in plant operation and in the way the amount of nitrate compounds released are estimated. Additional processing procedures beyond straight ice-packed shipping add additional organics to be treated. Therefore, product mix, processing and wastewater treatment plant operations, temperatures and other fluctuating factors affect the final release results (see *Total On-site Releases Per Year Graph* on the next page).

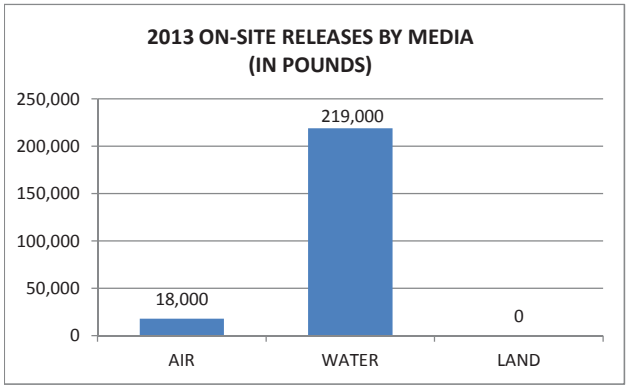
2013 TRI DATA (REPORTED IN POUNDS):

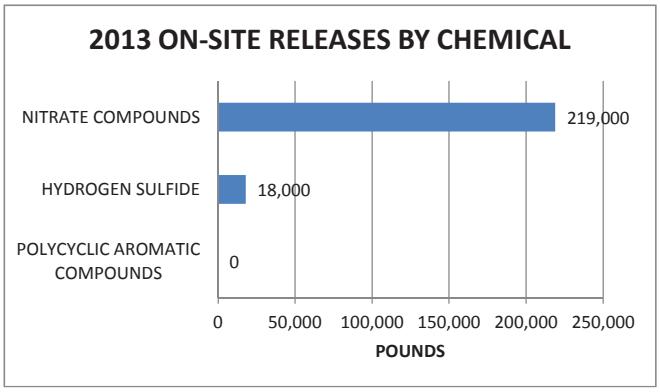
CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
HYDROGEN SULFIDE	18,000	0	0	18,000	0	143,000	NO	NO
NITRATE COMPOUNDS	0	219,000	0	219,000	0	0	NO	NO
POLYCYCLIC AROMATIC COMPOUNDS	0	0	0	0	0	0	YES	YES
TOTAL	18,000	219,000	0	237,000	0	143,000		

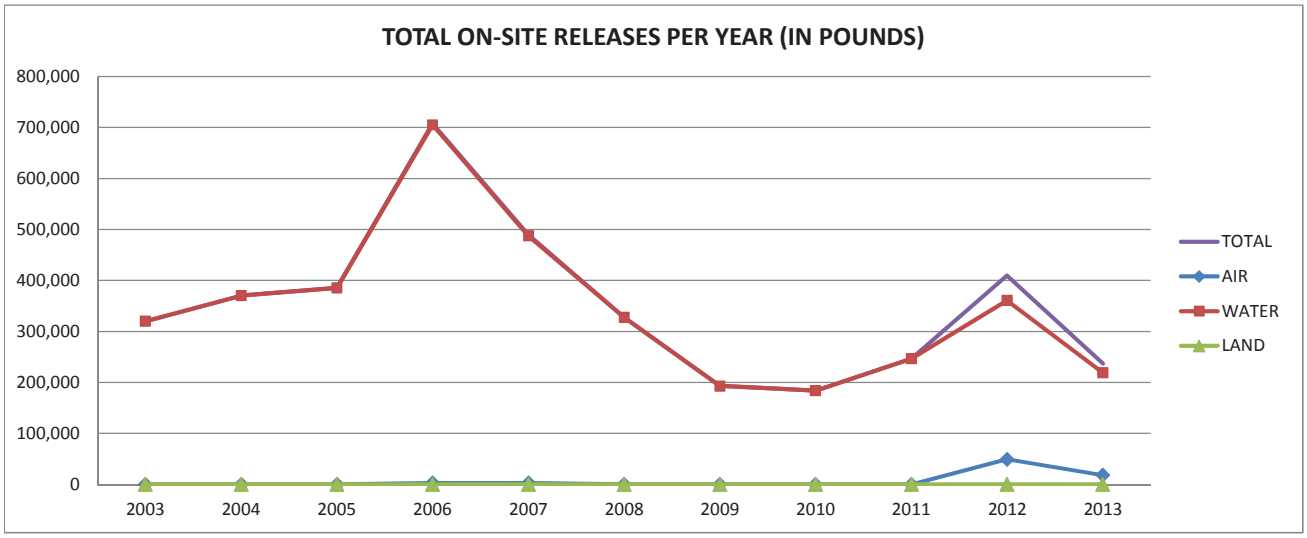
TRI FACILITY PROFILES

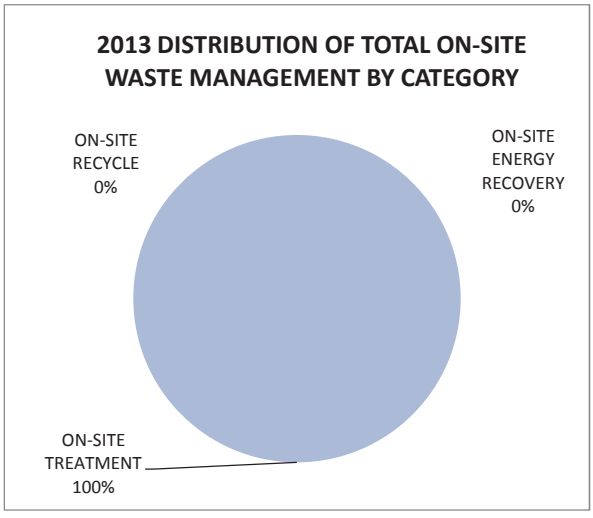
PERDUE GEORGETOWN, CONT.

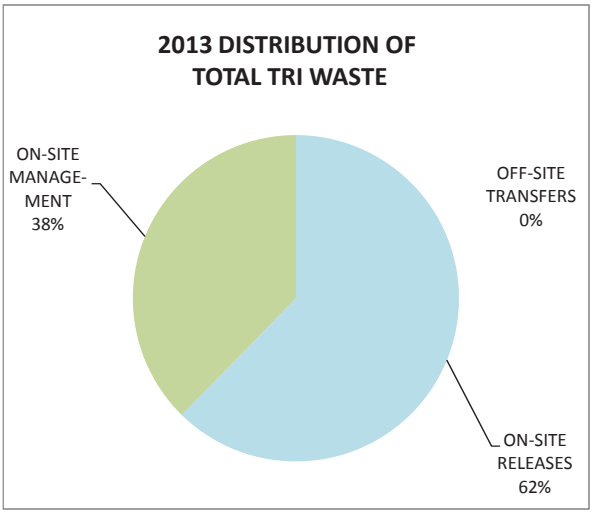
GRAPHICAL INFORMATION:







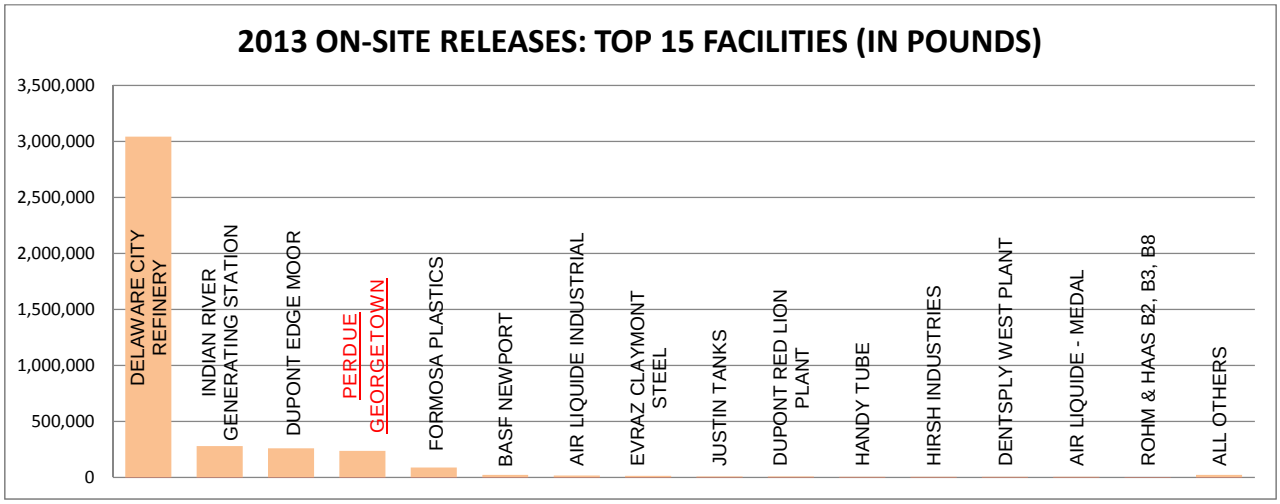


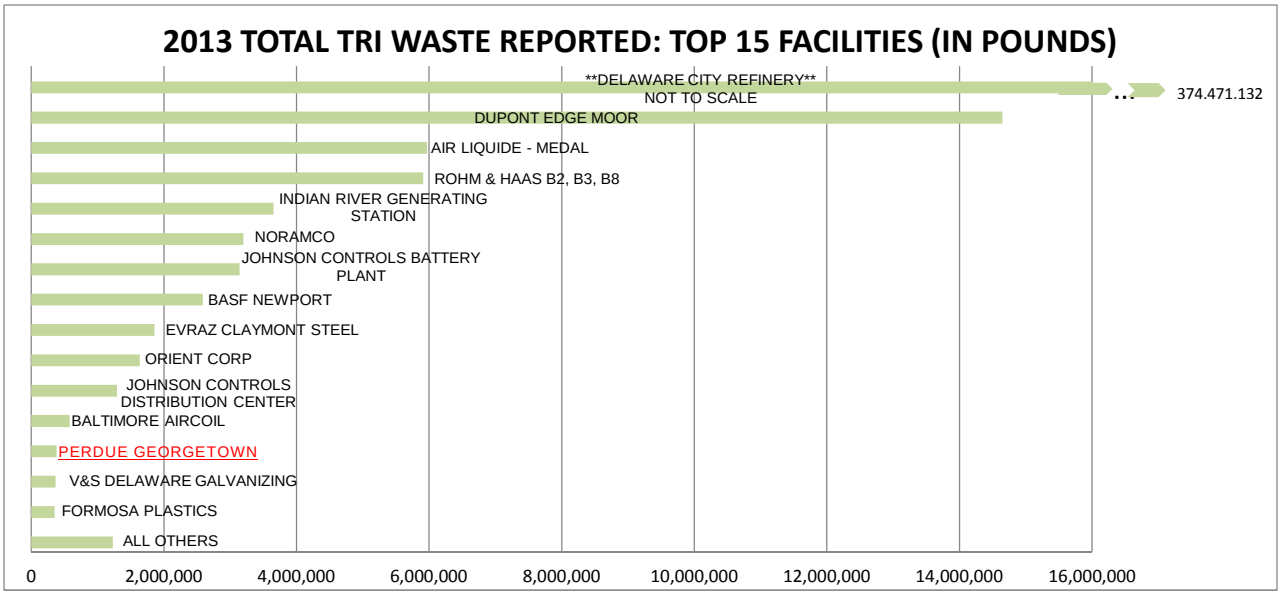


TRI FACILITY PROFILES

PERDUE GEORGETOWN, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Perdue Georgetown ranks 67th in on-site release of nitrate compounds by food/beverage facilities (NAICS 311) (out of 565 facilities).

Perdue Georgetown ranks 20th in the on-site treatment of hydrogen sulfide by food/beverage facilities (NAICS 311)

TRI FACILITY PROFILES

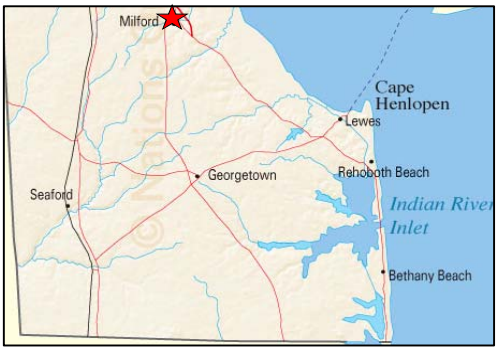
PERDUE MILFORD

LOCATION/CONTACT:

Address: 255 N. Rehoboth Blvd.
Milford, DE 19963

Phone: (410)-543-3166

Contact: Julie Deyoung



FACILITY OVERVIEW:

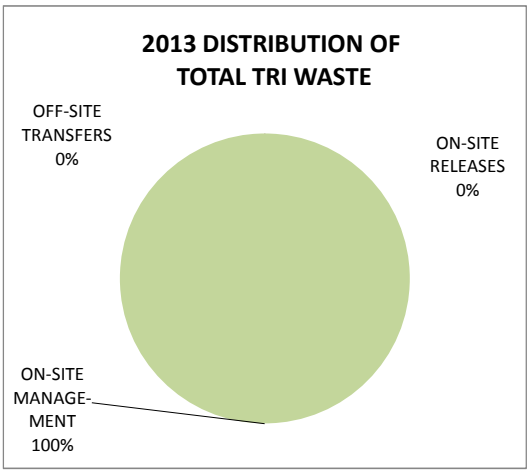
Perdue Farms is a producer of poultry products. The Milford facility processes chicken for sale to the retail market and is an organic certified plant.

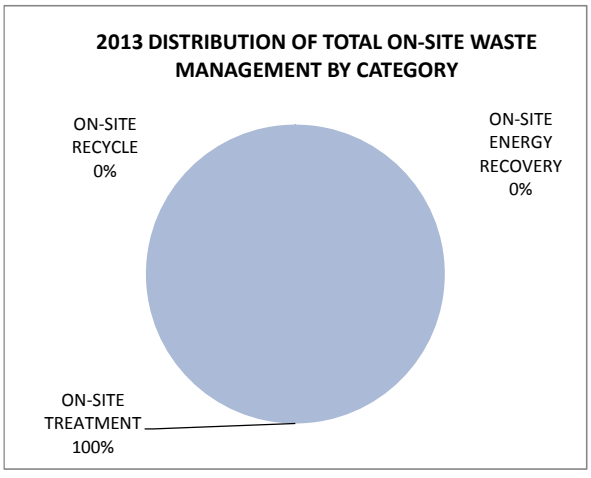
Perdue Milford has reported since 1991, previously as ConAgra Broiler. From 1999 through 2006, the facility was below the reporting threshold and no TRI reports were filed. For 2013, the facility reported on one chemical, peracetic acid, which is completely managed on-site. Peracetic acid is found in a FDA-approved antimicrobial food treatment for pathogen reduction in poultry processing. The product is used in chilling and carcass washing equipment in the plant. According to the manufacturer, the product is environmentally responsible as it is compatible with water treatment systems and rapidly breaks down after use.

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
PERACETIC ACID	0	0	0	0	0	35,000	NO	NO
TOTAL	0	0	0	0	0	35,000		

GRAPHICAL INFORMATION:

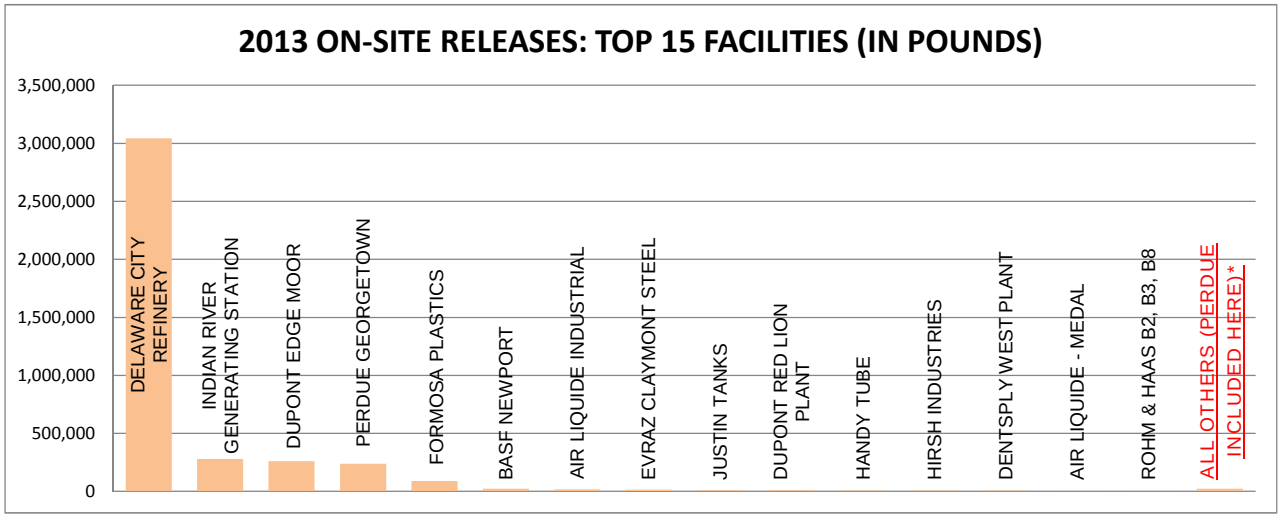




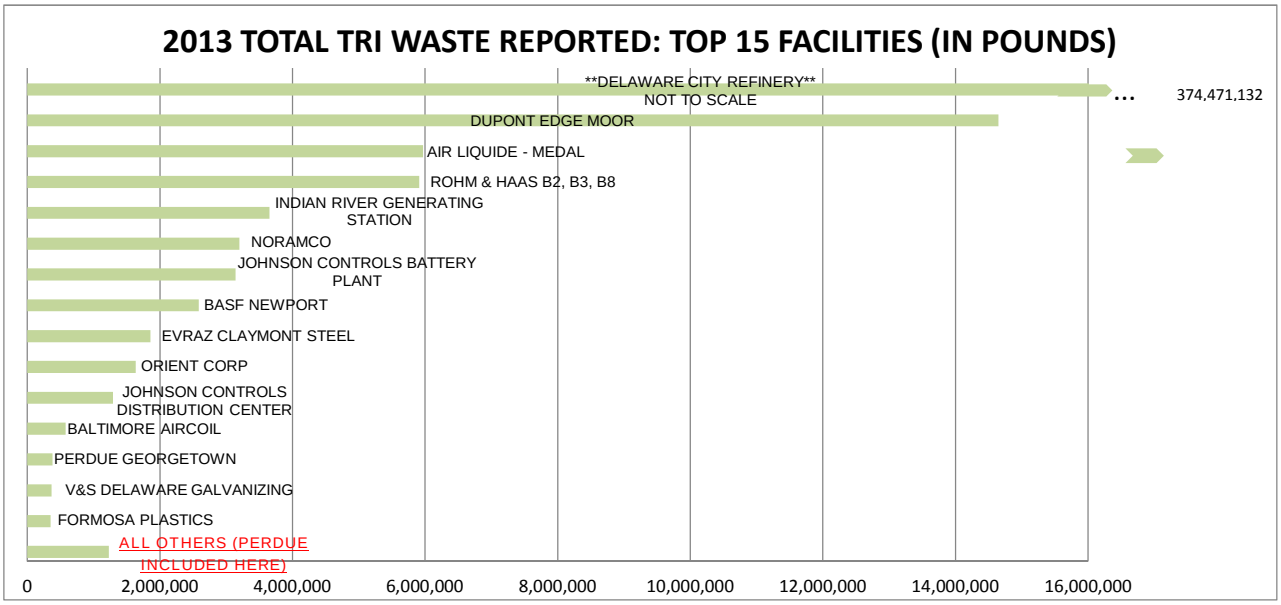
TRI FACILITY PROFILES

PERDUE MILFORD, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:



*Perdue Milford ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.



NOTABLE 2013 NATIONAL RANKINGS:

Perdue Milford ranks 30th for on-site treatment of peracetic acid (out of 144 facilities).

TRI FACILITY PROFILES

PICTSWEET

LOCATION/CONTACT:

Address: 18215 Wesley Church Road
Bridgeville, DE 19933

Phone: (731)-663-7600

Contact: Allen Watts

FACILITY OVERVIEW:

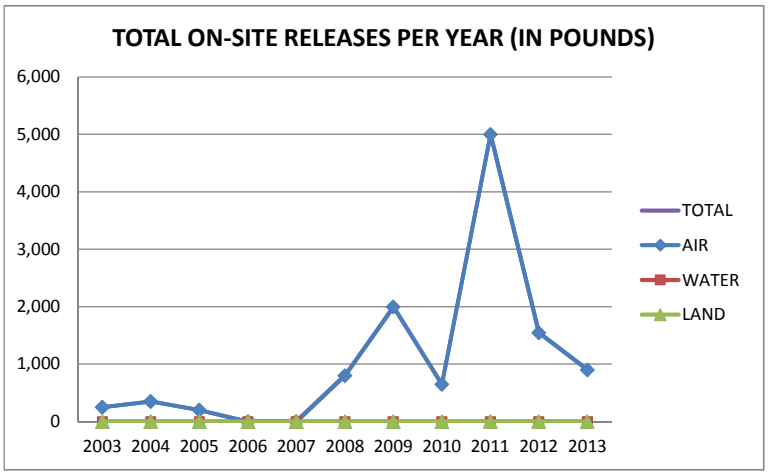
Pictsweet reports under the North American Industrial Classification System (NAICS) as 311411, which covers the manufacturing of frozen fruit, juice and vegetables.

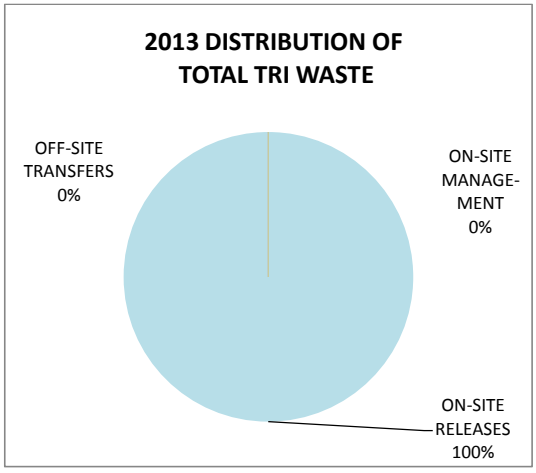
The facility has reported since 1989, previously as Birds Eye Foods and Agrilink Foods. Pictsweet reported one TRI chemical in 2013, ammonia. Ammonia is used in refrigeration equipment, and releases are typical through normal service maintenance, leaks, and other losses that occur in the system. On-site release amounts of ammonia have varied year to year (see *Total On-site Releases Per Year Graph*).

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
AMMONIA	900	0	0	900	0	0	NO	NO
TOTAL	900	0	0	900	0	0		

GRAPHICAL INFORMATION:

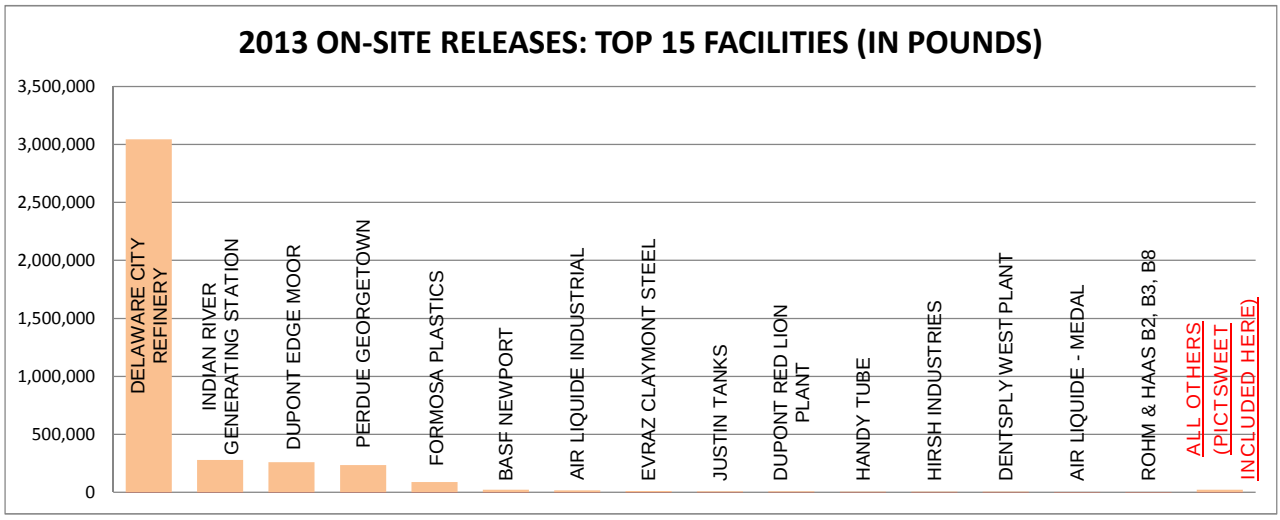




TRI FACILITY PROFILES

PICTSWEET, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:



Pictsweet ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

TRI FACILITY PROFILES

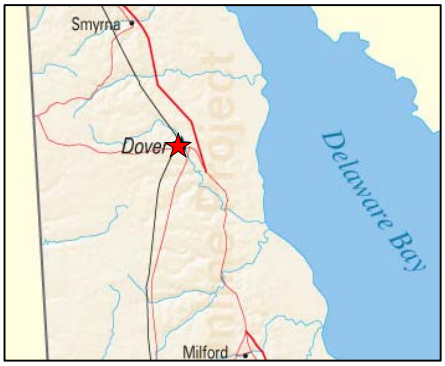
PPG INDUSTRIES

LOCATION/CONTACT:

Address: 1886 Lynnbury Woods Road
Dover, DE 19720

Phone: (302)-678-9800

Contact: Neal Nicastro



FACILITY OVERVIEW:

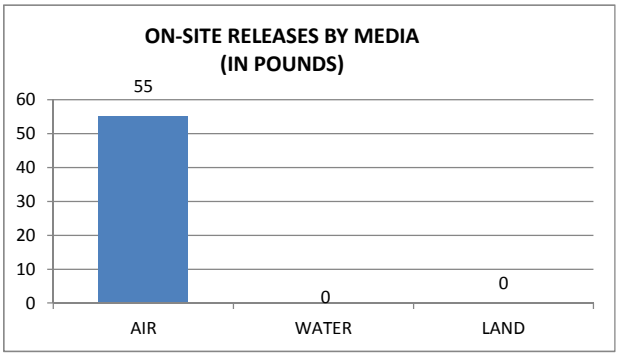
PPG Dover reported under the North American Industrial Classification System (NAICS) as 325510, which covers paint and coating manufacturing.

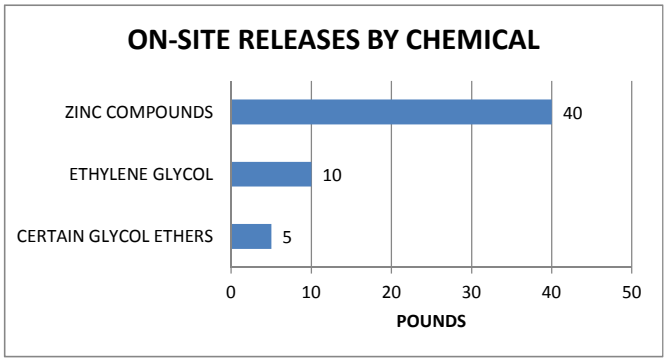
PPG Dover has reported since 1987. The facility reported on three chemicals in 2013, with on-site releases only to air. The chemicals reported are utilized as raw materials in the paint making process. The raw materials are mixed together to make architectural paint. On-site releases accounted for less than 1% of all waste activities in 2013. Releases for 2005 through 2008 and from 2010 and 2011 were higher than other years, with increased releases of zinc compounds on-site (see *Total On-site Releases Per Year Graph* on the next page).

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
CERTAIN GLYCOL ETHERS	5	0	0	5	5,139	0	NO	NO
ETHYLENE GLYCOL	10	0	0	10	1,932	0	NO	NO
ZINC COMPOUNDS	40	0	0	40	4,724	0	NO	NO
TOTAL	55	0	0	55	11,795	0		

GRAPHICAL INFORMATION:

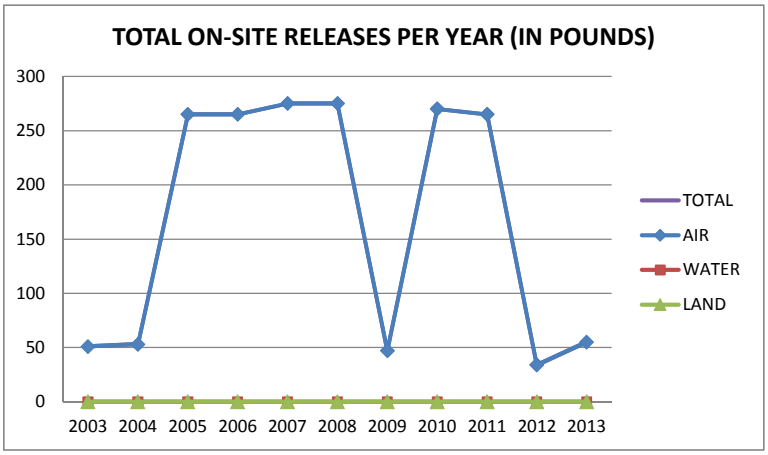


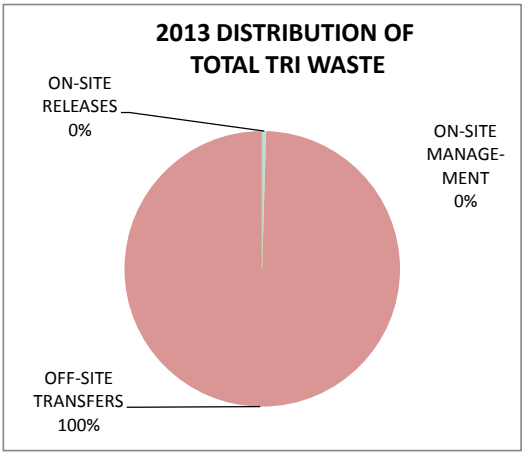


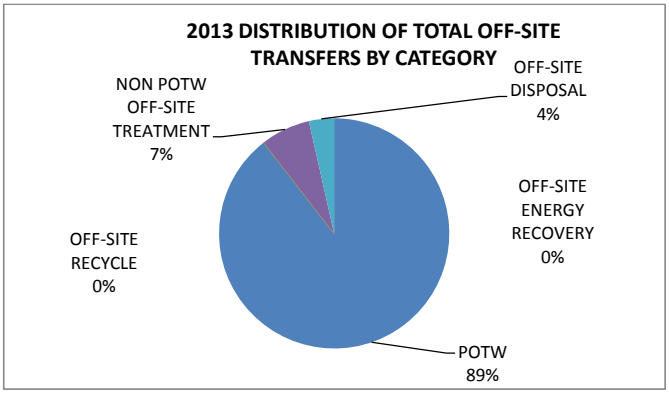
TRI FACILITY PROFILES

PPG INDUSTRIES, CONT.

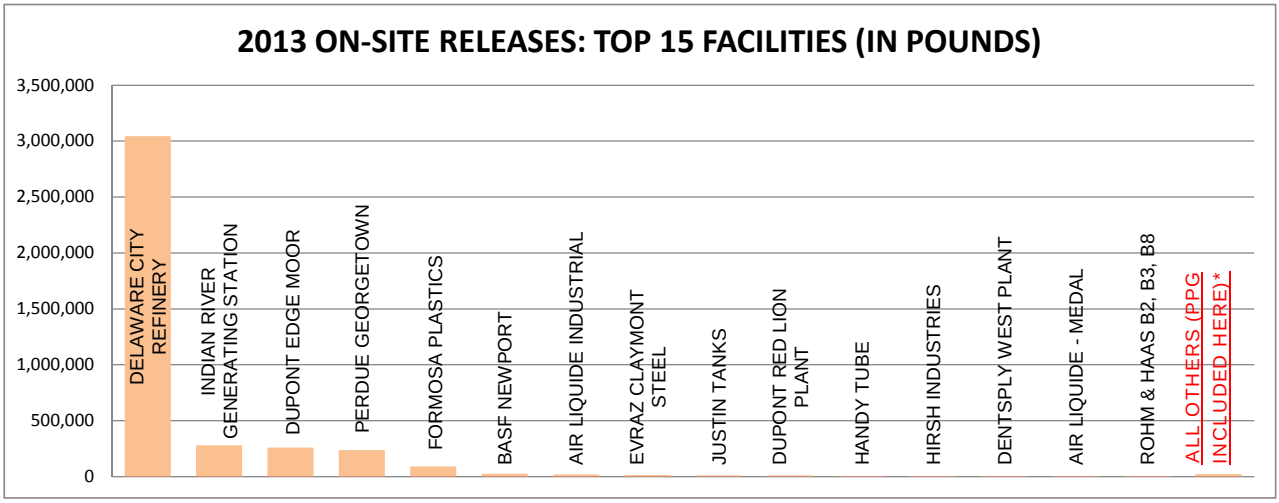
GRAPHICAL INFORMATION CONT.:







COMPARISON TO OTHER DELAWARE TRI FACILITIES:

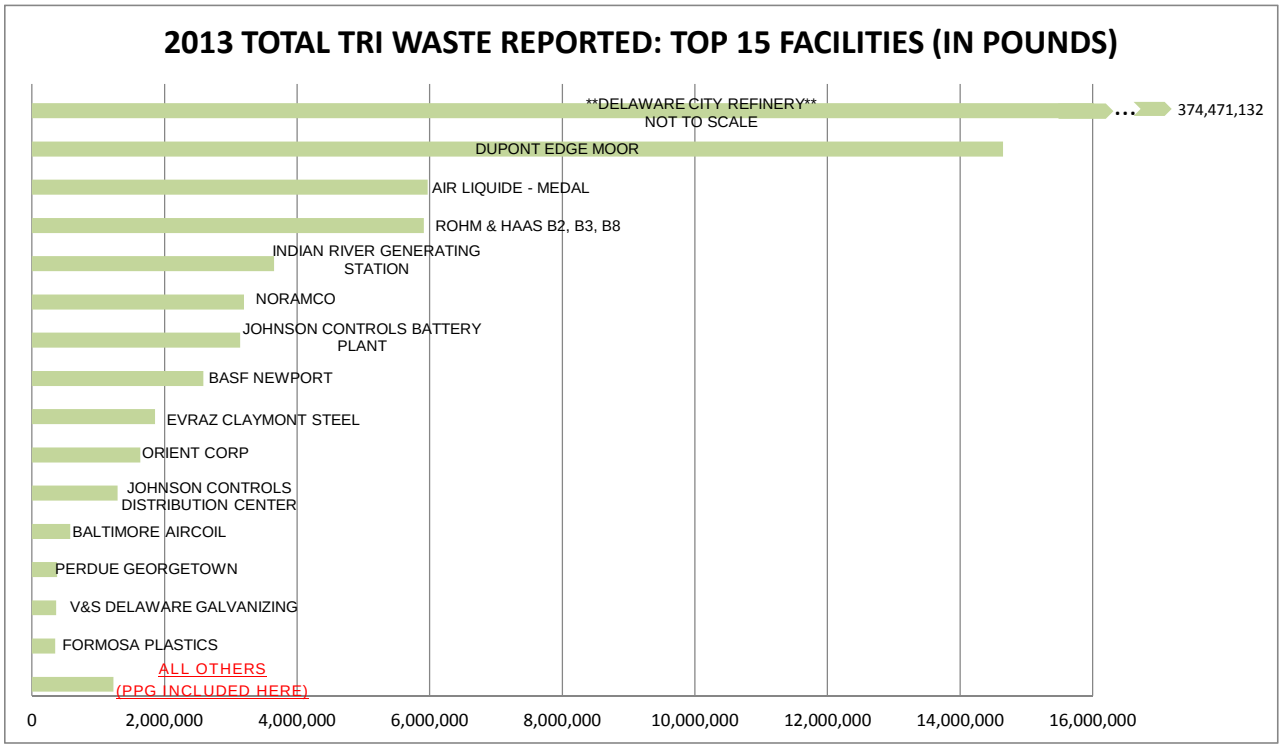


*PPG Industries ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site. Comparisons only include facilities reporting on Form R.

TRI FACILITY PROFILES

PPG INDUSTRIES, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES CONT.:



NOTABLE 2013 NATIONAL RANKINGS:

PPG Industries ranks 19th in the off-site transfer of certain glycol ethers to publicly owned treatment works (POTW) for chemical facilities (NAICS 325) (out of 653 facilities).

TRI FACILITY PROFILES

PRINCE MINERALS

LOCATION/CONTACT:

Address: 301 Pigeon Point Road
New Castle, DE 19720

Phone: (646)-747-4176

Contact: Mary Simpler

FACILITY OVERVIEW:

Prince Minerals is a supplier of colorants and additives to the North American brick industry as well as complementary products to serve the foundry, glass, and refractory markets.

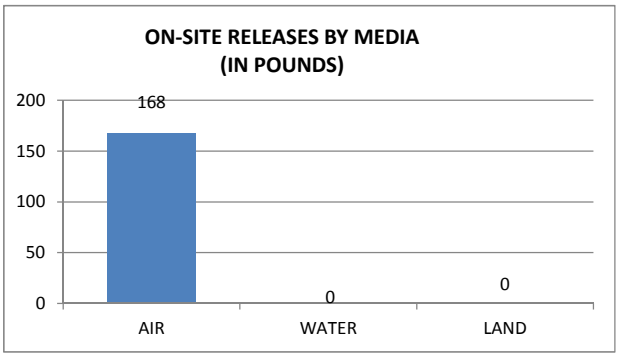
Prince Minerals has reported since 1998, previously as American Minerals. The facility reported on 4 chemicals in 2013, all metal compounds, with on-site releases only to air. Two chemicals reported were submitted on Form A. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs. of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.) Persistent Bio-Accumulative Toxic (PBT) Chemicals, such as lead, are ineligible for Form A.

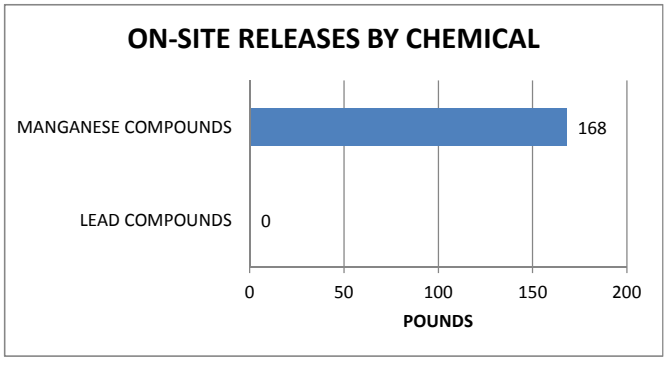
2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
BARIUM COMPOUNDS*	0	0	0	0	0	0	NO	NO
LEAD COMPOUNDS	0	0	0	0	0	0	YES	YES
MANGANESE COMPOUNDS	168	0	0	168	0	0	NO	NO
NICKEL COMPOUNDS*	0	0	0	0	0	0	NO	YES
TOTAL	168	0	0	168	0	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

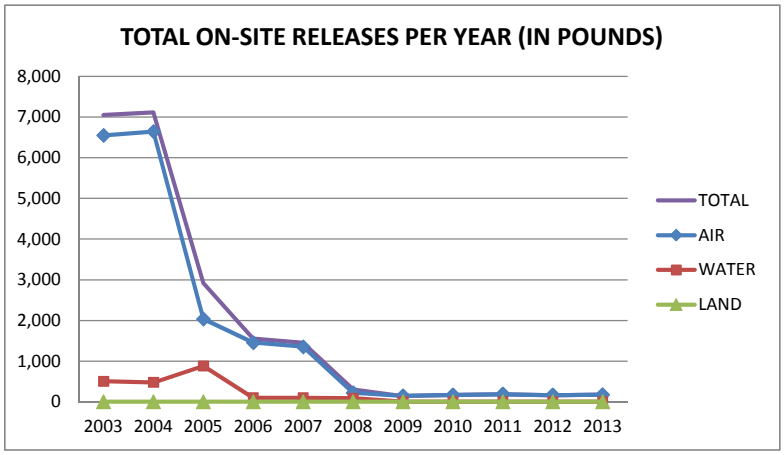


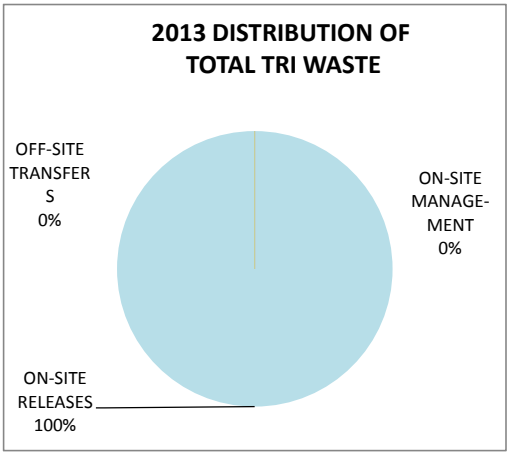


TRI FACILITY PROFILES

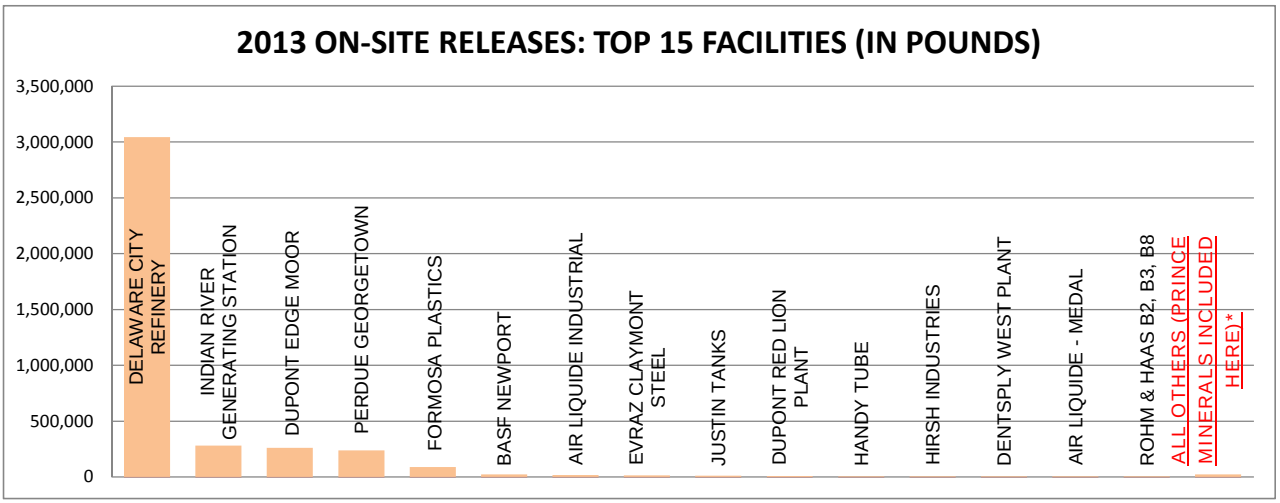
PRINCE MINERALS, CONT.

GRAPHICAL INFORMATION CONT.:





COMPARISON TO OTHER DELAWARE TRI FACILITIES:



*Prince Minerals ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

TRI FACILITY PROFILES

ROHM & HAAS B2, B3, B8

LOCATION/CONTACT:

Address: 451 Bellevue Road
Newark, DE 19713

Phone: (302)-366-0500

Contact: Kelly Block

FACILITY OVERVIEW:

Rohm& Haas (Buildings 2, 3, and 8) manufactures polishing pads and slurries for the semiconductor, electronics, and glass industries.

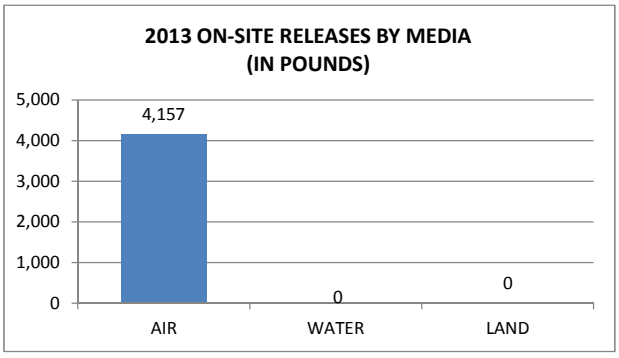
The facility has reported since 1987, previously as Rodel. Rohm and Haas reported on two TRI chemicals for 2013. N,N-Dimethylformamide (DMF), is used as a solvent carrier in the polishing pad manufacturing process and accounted for virtually all of their on-site releases. Releases of DMF mostly occur through evaporation from the poromerics coating and washing process. The majority of the DMF used is recycled in the distillation equipment for reuse in the process. All on-site releases of DMF were to air, and were primarily stack emissions from the scrubber and oxidizer used to control process emissions.

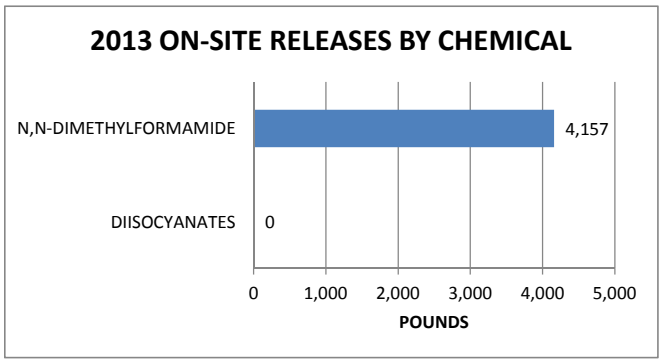
Methyl ethyl ketone was removed from the reportable TRI chemical list in 2004, which resulted in a significant reduction of the on-site releases reported by Rohm & Haas (see *Total On-site Releases Per Year Graph* on the next page).

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
DIISOCYANATES	0	0	0	0	6,910	0	NO	NO
N,N-DIMETHYLFORMAMIDE	4,157	0	0	4,157	1,695,946	4,036,715	NO	NO
TOTAL	4,157	0	0	4,157	1,702,856	4,036,715		

GRAPHICAL INFORMATION:

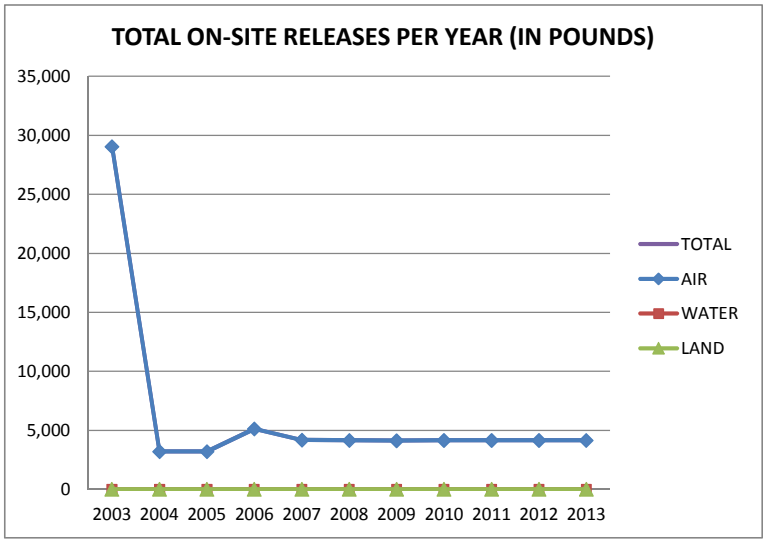


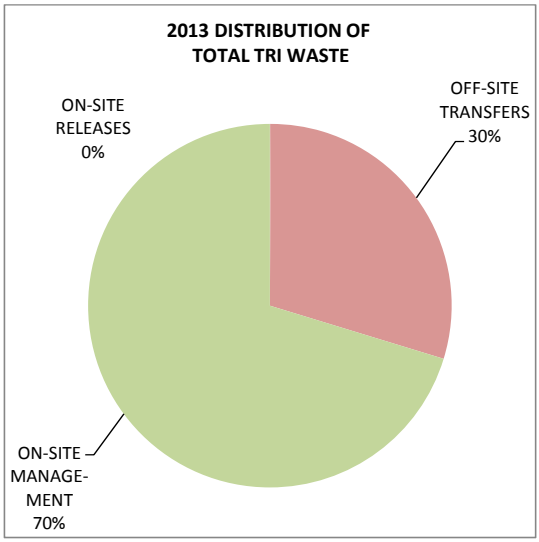


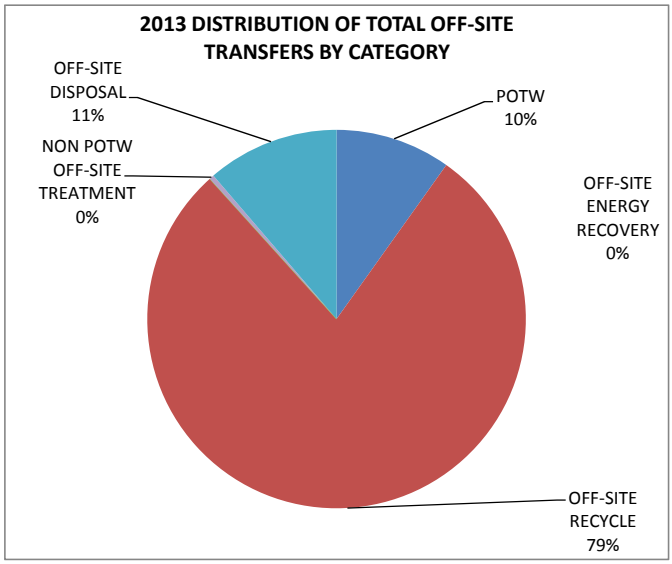
TRI FACILITY PROFILES

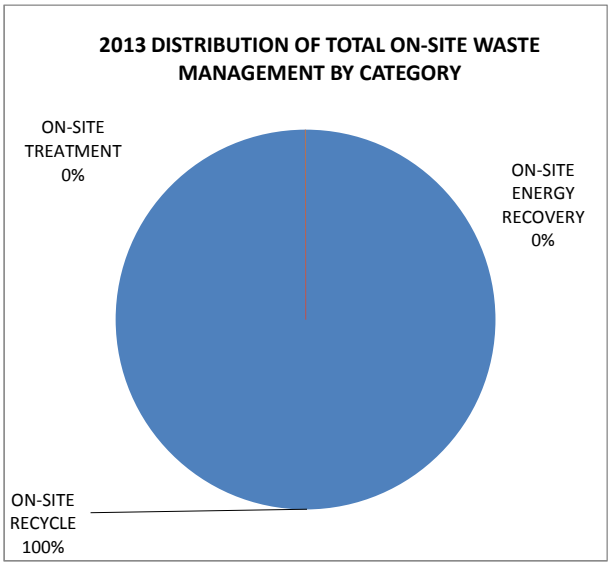
ROHM & HAAS B2, B3, B8, CONT.

GRAPHICAL INFORMATION:





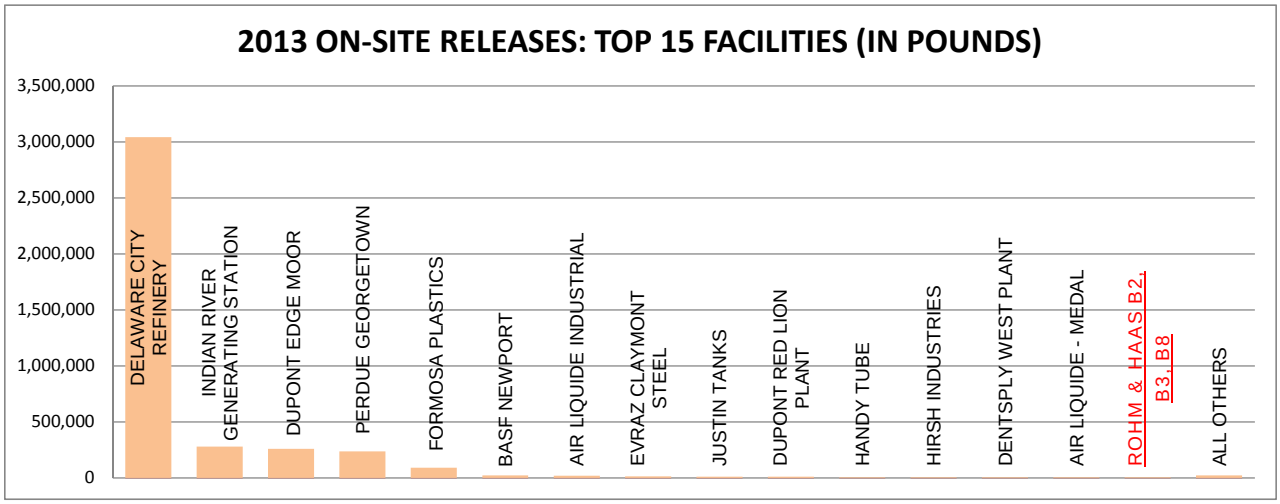


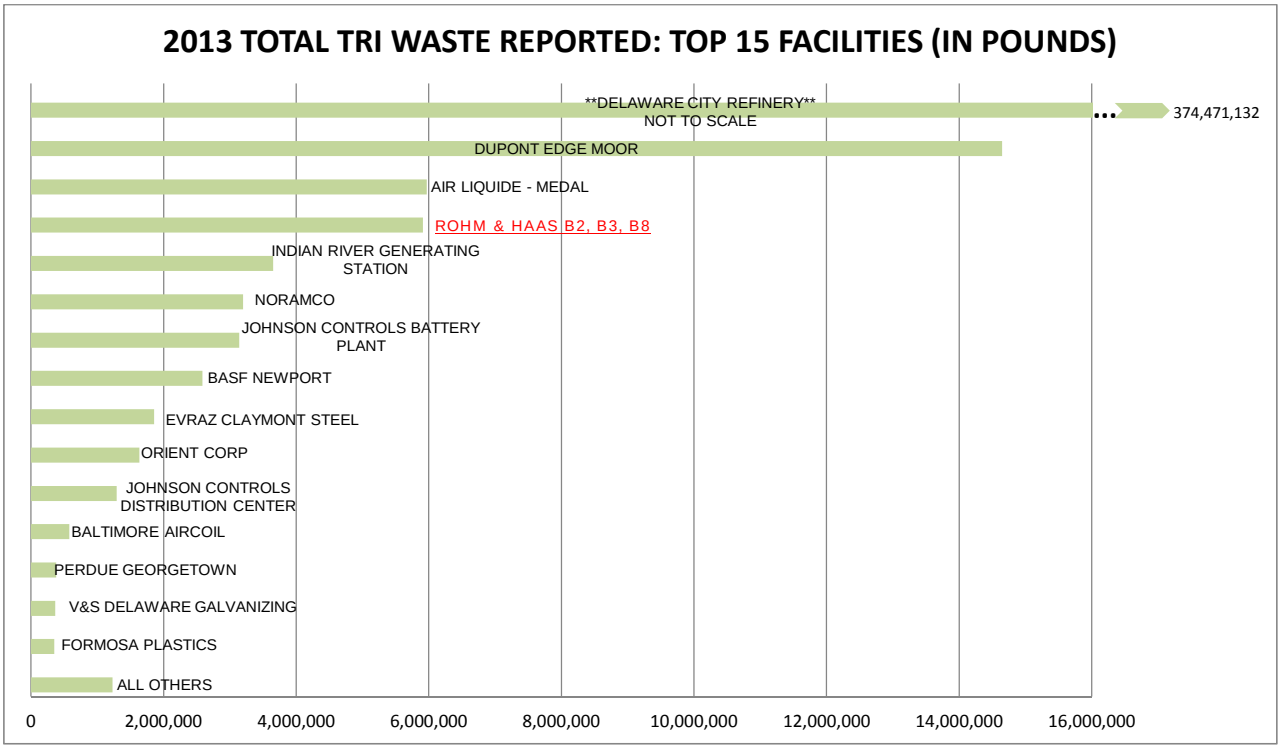


TRI FACILITY PROFILES

ROHM & HAAS B2, B3, B8, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Rohm & Haas ranks 3rd for off-site transfers of n,n-dimethylformamide (out of 154 facilities).

Rohm & Haas ranks 1st for on-site recycling of n,n-dimethylformamide (out of 154 facilities).

TRI FACILITY PROFILES

ROHM & HAAS-B5, B6

LOCATION/CONTACT:

Address: 351 Bellevue Road
Newark, DE 19713

Phone: (302)-366-0500

Contact: Kelly Block

FACILITY OVERVIEW:

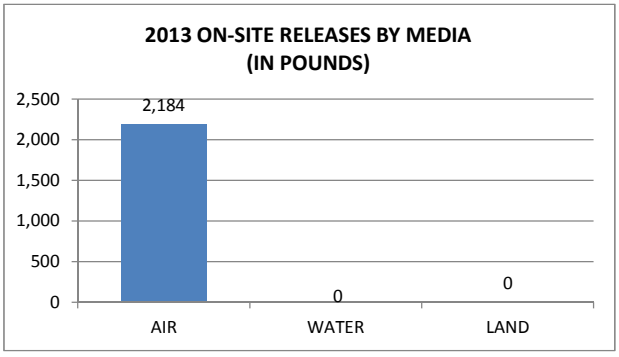
Rohm and Haas (Buildings 5 and 6) manufacture products used to polish electronic chips used in items such as mobile phones and computers. Rohm and Haas B5-B6 has reported since 1995, formerly as the Rodel Technical Center. For 2013, the facility reported 4 chemicals, with n-methyl-2-pyrrolidone (NMP) accounting for 99% of all on-site releases. NMP is utilized in cleaning equipment used in manufacturing. The majority of NMP is managed off-site with less than 3% being released on-site to air.

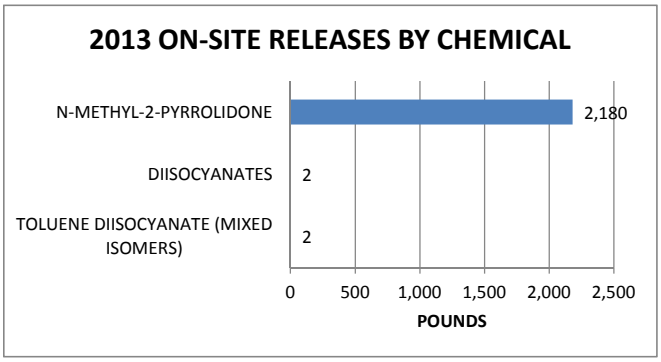
2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
4,4'-METHYLENEBIS(2-CHLOROANILINE)*	0	0	0	0	1,507	0	NO	YES
DIISOCYANATES	2	0	0	2	22,612	0	NO	NO
N-METHYL-2-PYRROLIDONE	2,180	0	0	2,180	81,405	0	NO	NO
TOLUENE DIISOCYANATE (MIXED ISOMERS)	2	0	0	2	825	4,599	NO	YES
TOTAL	2,184	0	0	2,184	106,349	4,599		

*Reported on Short Form A

GRAPHICAL INFORMATION:





TRI FACILITY PROFILES

ROHM & HAAS-B5, B6 CONT.

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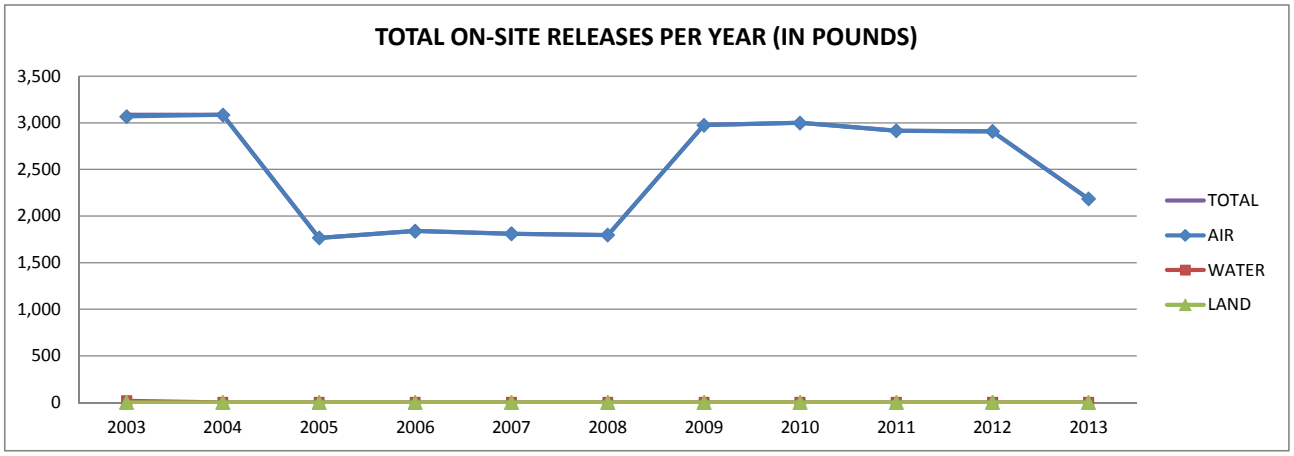
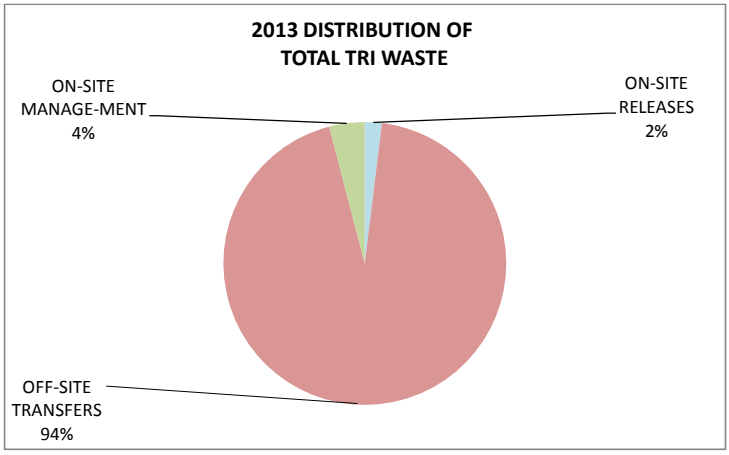
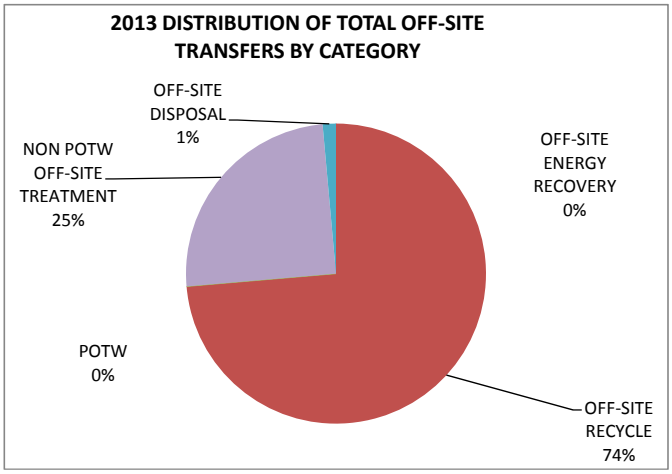
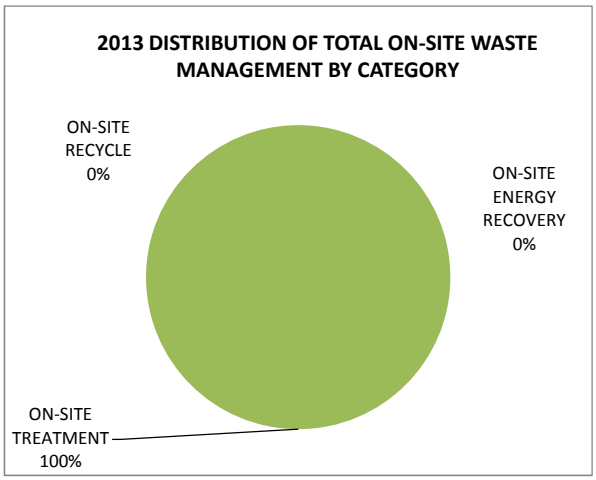




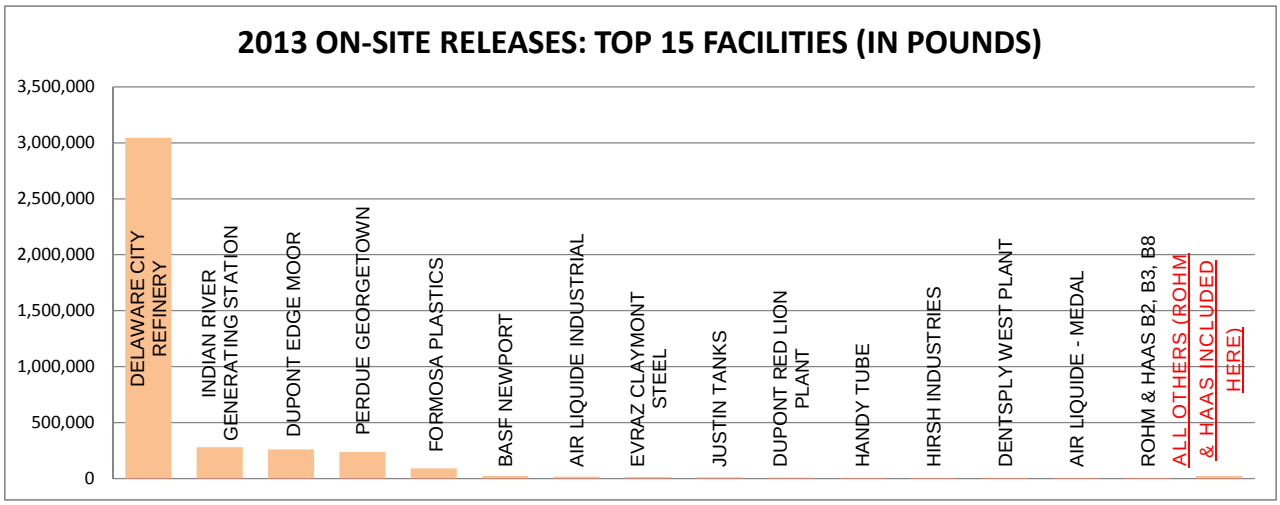


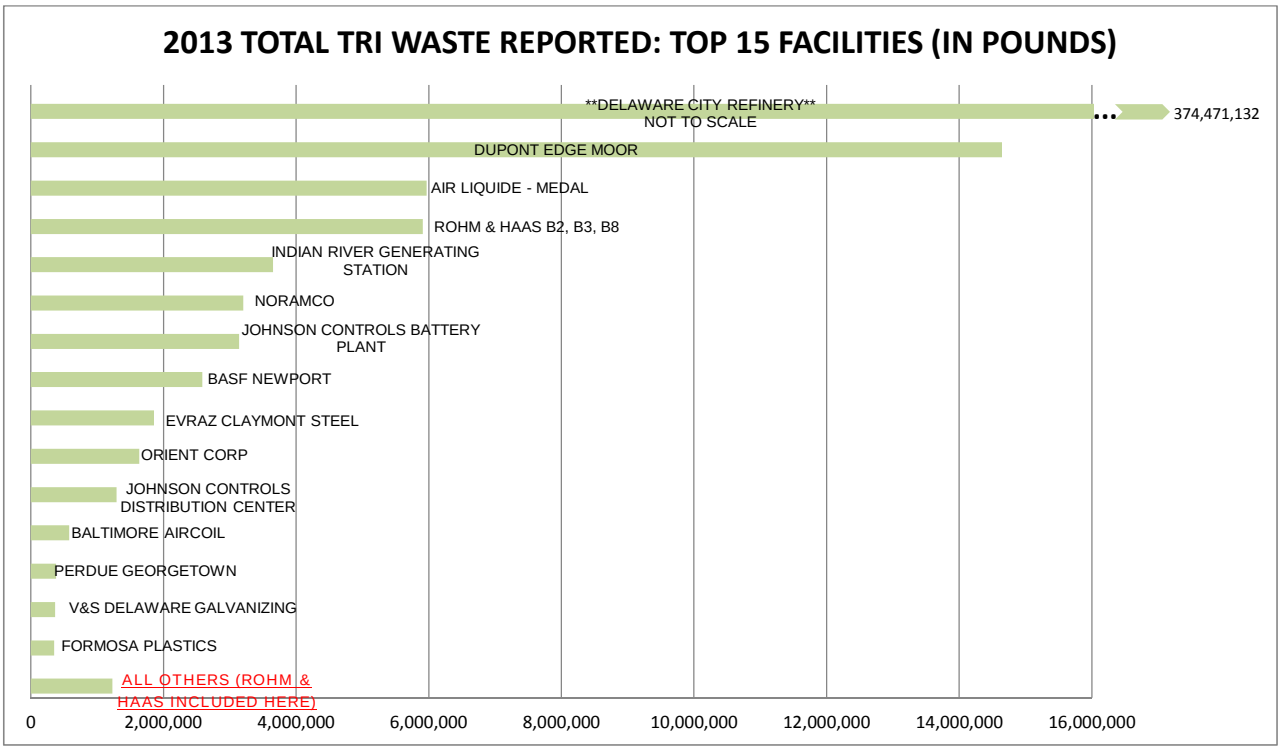


TRI FACILITY PROFILES

ROHM & HAAS-B5, B6 CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

Rohm & Haas ranks 88th for on-site releases of n-methyl-2-pyrrolidone (out of 385 facilities).

Rohm & Haas ranks 66th for off-site transfers of n-methyl-2-pyrrolidone (out of 385 facilities).

TRI FACILITY PROFILES

ROHM & HAAS-B7, B15

LOCATION/CONTACT:

Address: 50 Bellevue Road
Newark, DE 19713

Phone: (302)-366-0500

Contact: Kelly Block

FACILITY OVERVIEW:

Rohm and Haas (Buildings 7 and 15) manufacture products used to polish electronic chips used in items such as mobile phones and computers. Rohm and Haas (Buildings 7 and 15) has reported since 2005, formerly as the Rodel Building 7. For 2013, the facility reported 2 chemicals, n-methyl-2-pyrrolidone (NMP) and 4,4'-methylenebis(2-chloroaniline). NMP is used as a cleaning agent. 4,4'-methylenebis(2-chloroaniline) is reported on short form A. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs. of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.).

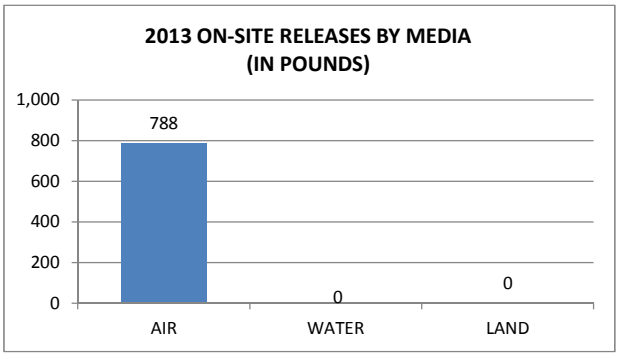
On-site releases for 2013 were down 72% compared to 2012. Analysis of past years reporting indicated that the site was double reporting cleaning bath emissions in the building 7 TRI report and the building 5 TRI report. This was corrected in the 2013 report, causing reported on-site air releases to drop significantly.

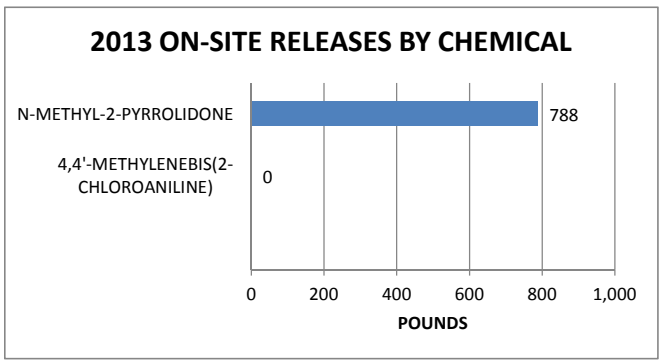
2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
4,4'-METHYLENEBIS(2-CHLOROANILINE)*	0	0	0	0	0	0	NO	YES
N-METHYL-2-PYRROLIDONE	788	0	0	788	11,747	0	NO	NO
TOTAL	788	0	0	788	11,747	0		

*Reported on Short Form A

GRAPHICAL INFORMATION:

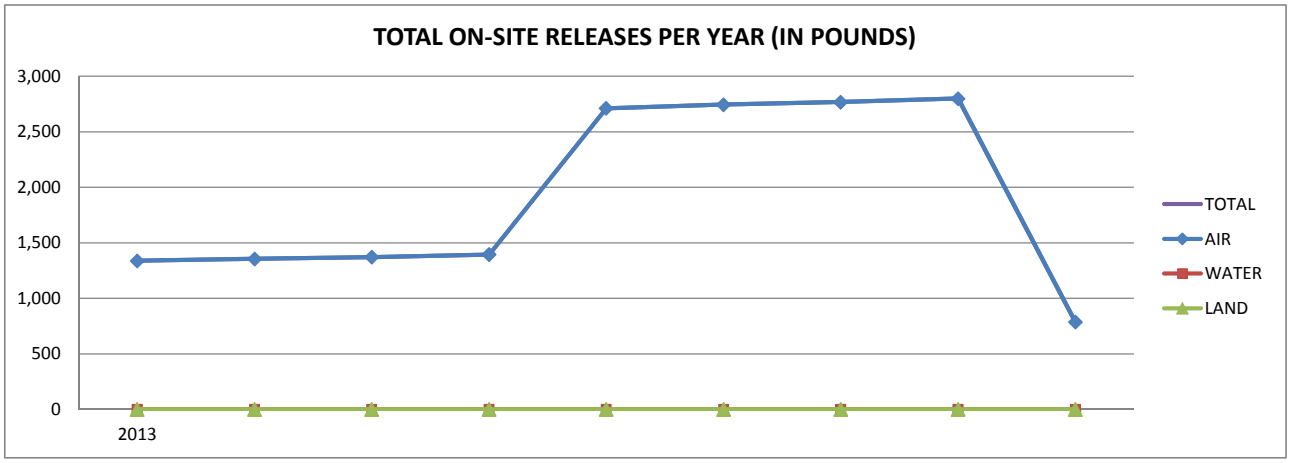


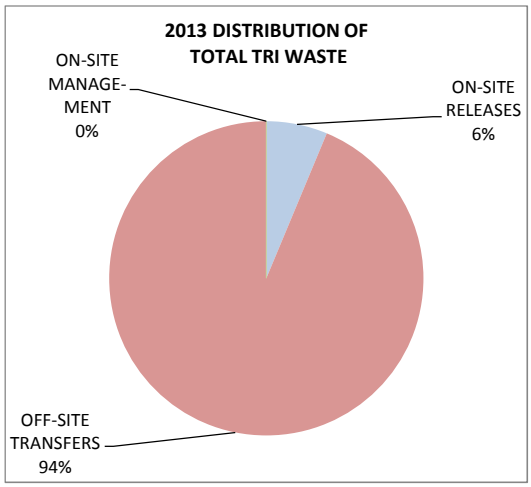


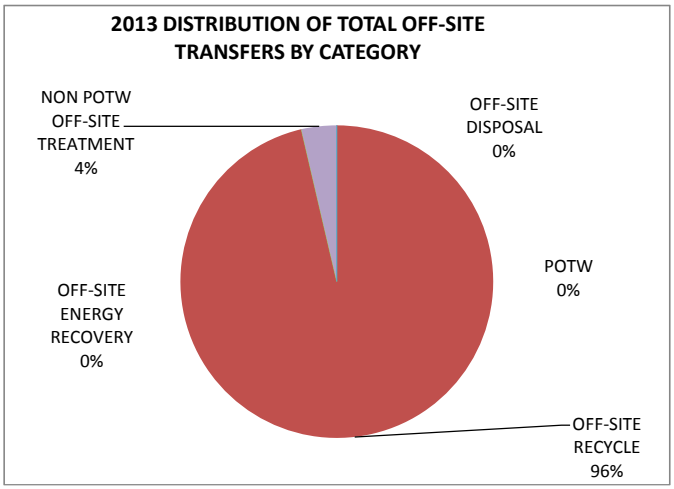
TRI FACILITY PROFILES

ROHM & HAAS-B7, B15, CONT.

GRAPHICAL INFORMATION:



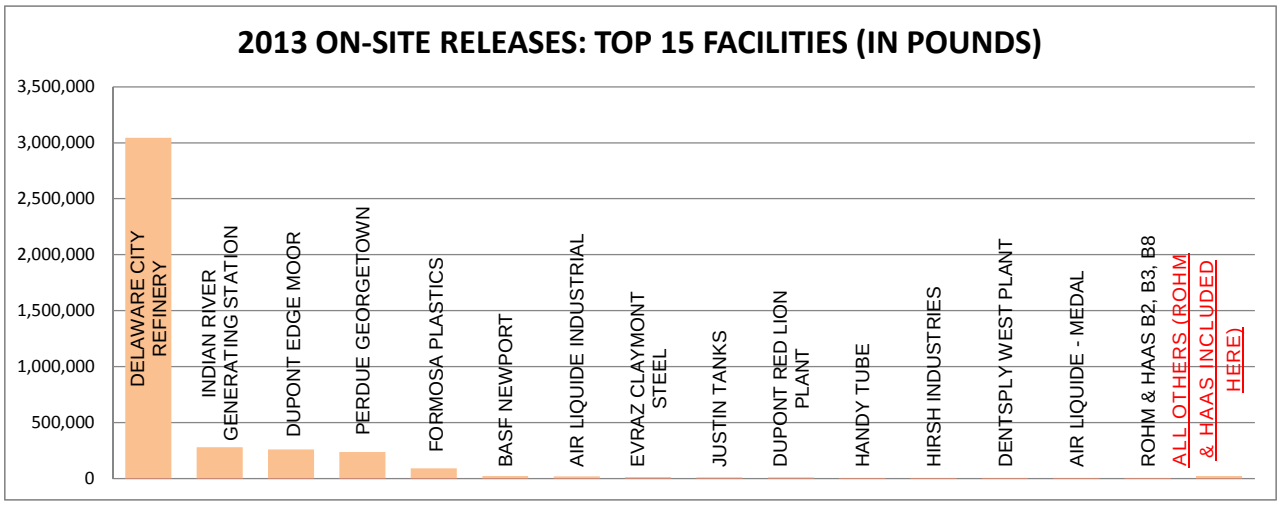


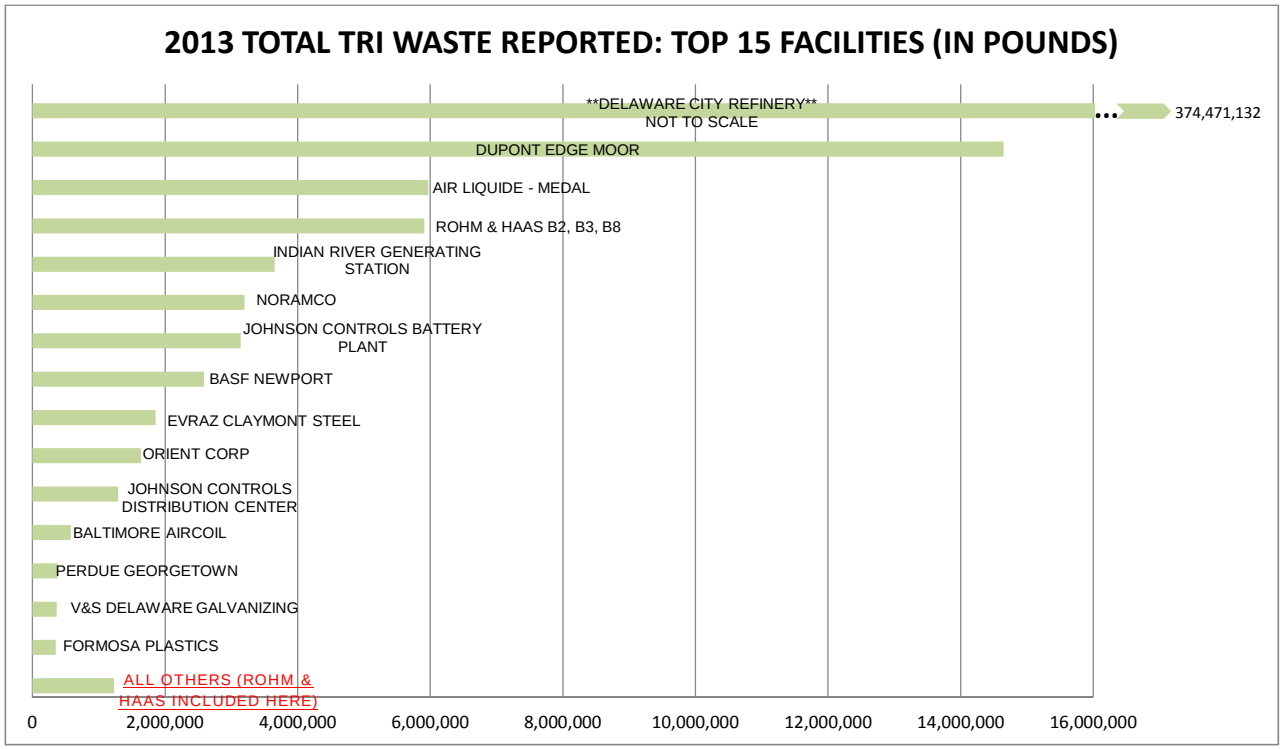


TRI FACILITY PROFILES

ROHM & HAAS-B7, B15, CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:



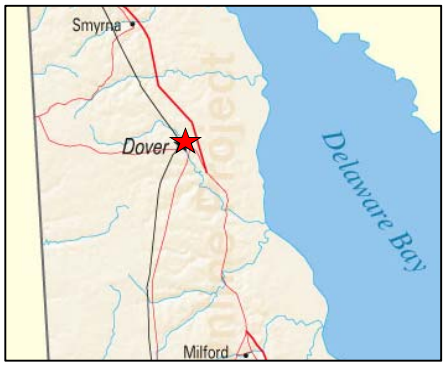


NOTABLE 2013 NATIONAL RANKINGS:

Rohm & Haas ranks 63rd for off-site recycling of n-methyl-2-pyrrolidone (out of 385 facilities).

TRI FACILITY PROFILES

SERVICE ENERGY DOVER



LOCATION/CONTACT:

Address: 3799 N Dupont Highway
Dover, DE 19901

Phone: (302)-734-7433

Contact: Don Steiner

FACILITY OVERVIEW:

Service Energy reported under the North American Industrial Classification System (NAICS) as 424710, which covers bulk liquid storage facilities primarily engaged in merchant wholesale of crude petroleum and petroleum products.

Service Energy Dover has reported since 1998. The facility reported on two chemicals in 2013, 1,2,4-trimethylbenze and toluene, both on the short Form A. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs. of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 lbs. to be eligible to submit a Form A report.)

2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
1,2,4-TRIMETHYLBENZENE*	0	0	0	0	0	0	NO	NO
TOLUENE*	0	0	0	0	0	0	NO	NO
TOTAL	0	0	0	0	0	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

TRI reports for this facility were submitted on Short Form A. No on-site releases, off-site transfers, or on-site waste management activities are reported. Total reportable waste activities for this facility do not exceed 500 pounds per chemical reported.

FACILITY INFORMATION SHEETS

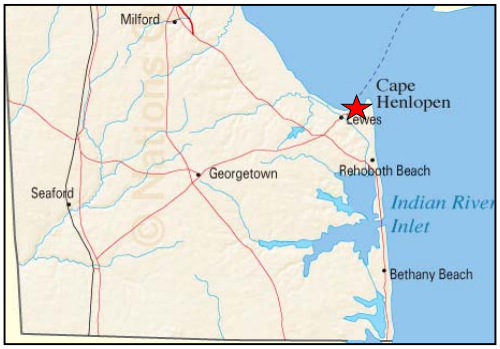
SPI PHARMA

LOCATION/CONTACT:

Address: 40 Cape Henlopen Drive
Lewes, DE 19958

Phone: (302)-576-8532

Contact: Paul Lopresto



FACILITY OVERVIEW:

SPI Pharma reported under the North American Industrial Classification System (NAICS) as 325412, which covers pharmaceutical manufacturing.

SPI Pharma has reported since 1987, previously as Barcroft. The facility reported on two chemicals in 2013, chlorine and nitric acid, both on short Form A. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.)

2013 TRI DATA (REPORTED IN POUNDS):

	ON-SITE RELEASES				OFF-SITE	ON-SITE		
CHEMICAL	AIR	WATER	LAND	TOTAL	TRANSFERS	MANAGEMENT	PBT	CARCINOGEN
CHLORINE*	0	0	0	0	0	0	NO	NO
NITRIC ACID*	0	0	0	0	0	0	NO	NO
TOTAL	0	0	0	0	0	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

TRI reports for this facility were submitted on Short Form A. No on-site releases, off-site transfers, or on-site waste management activities are reported. Total reportable waste activities for this facility do not exceed 500 pounds per chemical reported.

TRI FACILITY PROFILES

V & S GALVANIZING

LOCATION/CONTACT:

Address: 511 Carroll Drive
New Castle, DE 19720

Phone: (302) 322-1420

Contact: Johnny Roibu

FACILITY OVERVIEW:

V&S Galvanizing reported under the North American Industrial Classification System (NAICS) as 332812, which covers metal coating, engraving, and allied services to manufactures.

V&S Galvanizing has reported since 2009. The facility reported on two chemicals in 2013 (lead compounds and zinc compounds), with on-site releases to both air and water. The chemicals are that reported are found in the hot dip galvanizing process and coating. Stormwater data was also revised as more became available, combined with differences in annual precipitation for the various years. This resulted in reduced amount reported in stormwater for the last two reporting years. Between reporting years 2011 and 2012, V&S Delaware Galvanizing took a more comprehensive look at air concentration data available and revised their method of calculation to include the most conservative data. On-site releases have increased by 59% compared to 2009, but make up less than 0.01% of all waste management activities. The result increase in releases reported was due to a change in calculations and release assumptions based on more readily available data.

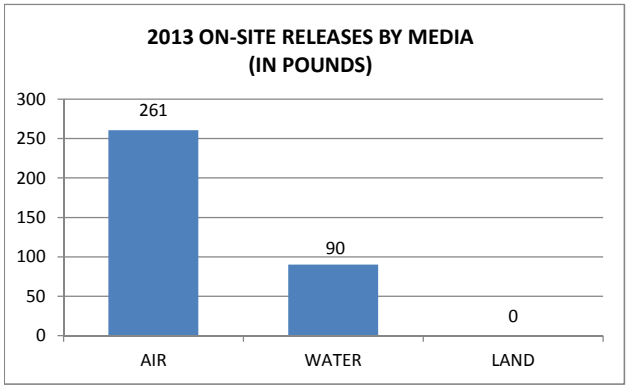
2013 TRI DATA (REPORTED IN POUNDS):

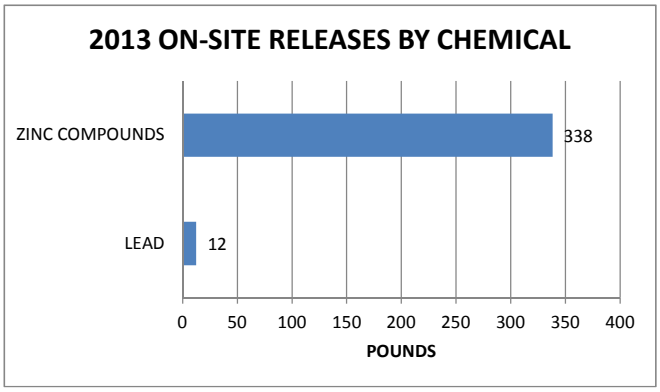
CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
LEAD	6	7	0	12	4,660	1,669	YES	YES
ZINC COMPOUNDS	255	83	0	338	165,044	195,847	NO	NO
TOTAL	261	90	0	351	169,704	197,516		

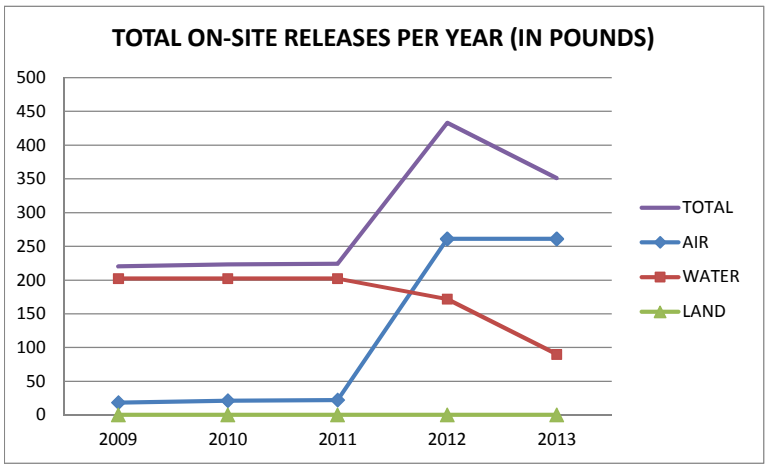
TRI FACILITY PROFILES

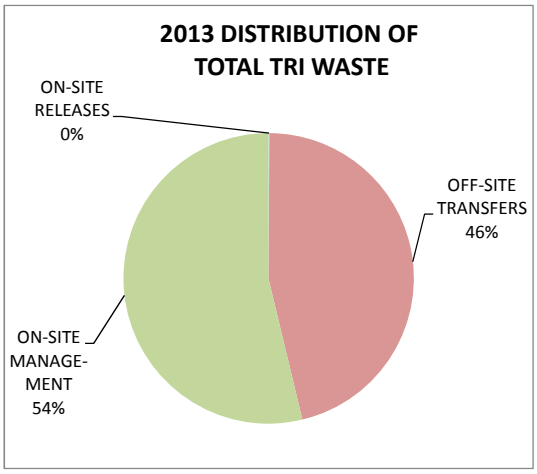
V & S GALVANIZING, CONT.

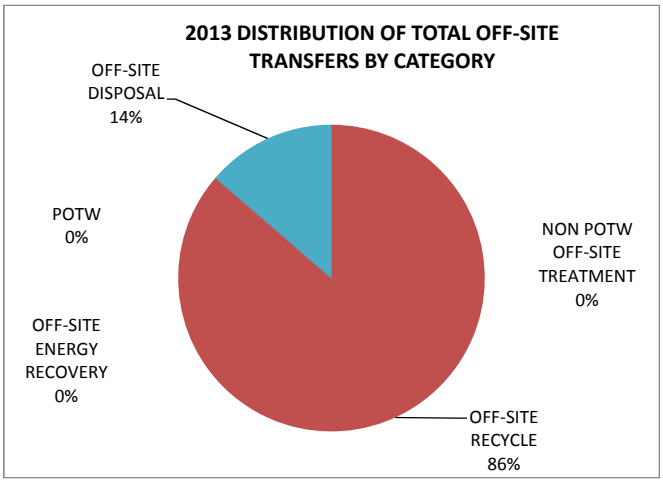
GRAPHICAL INFORMATION:

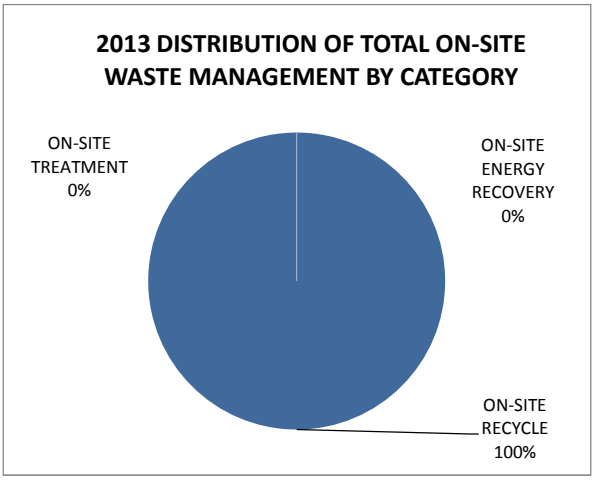








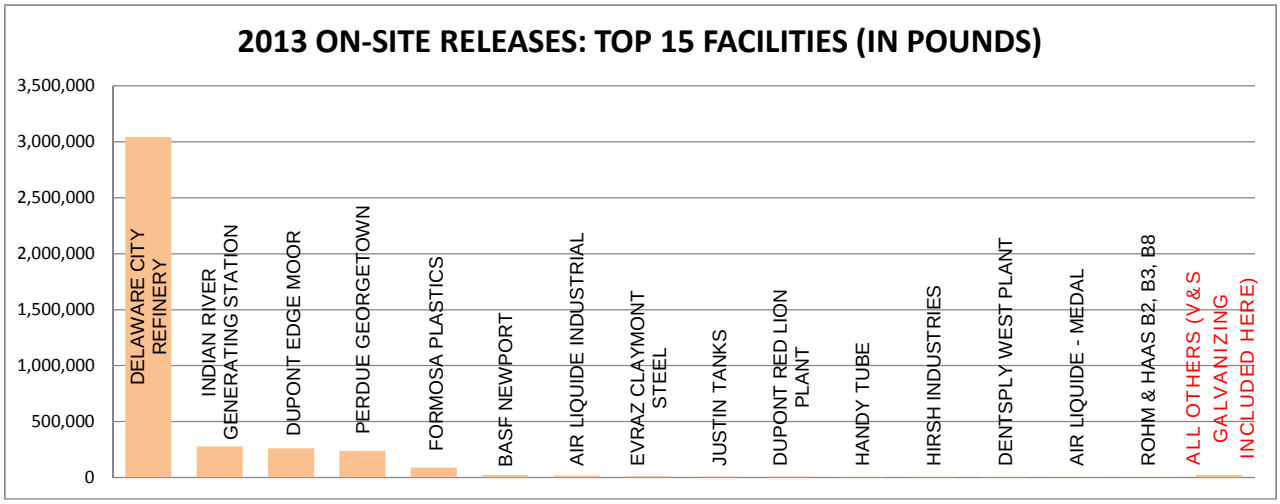


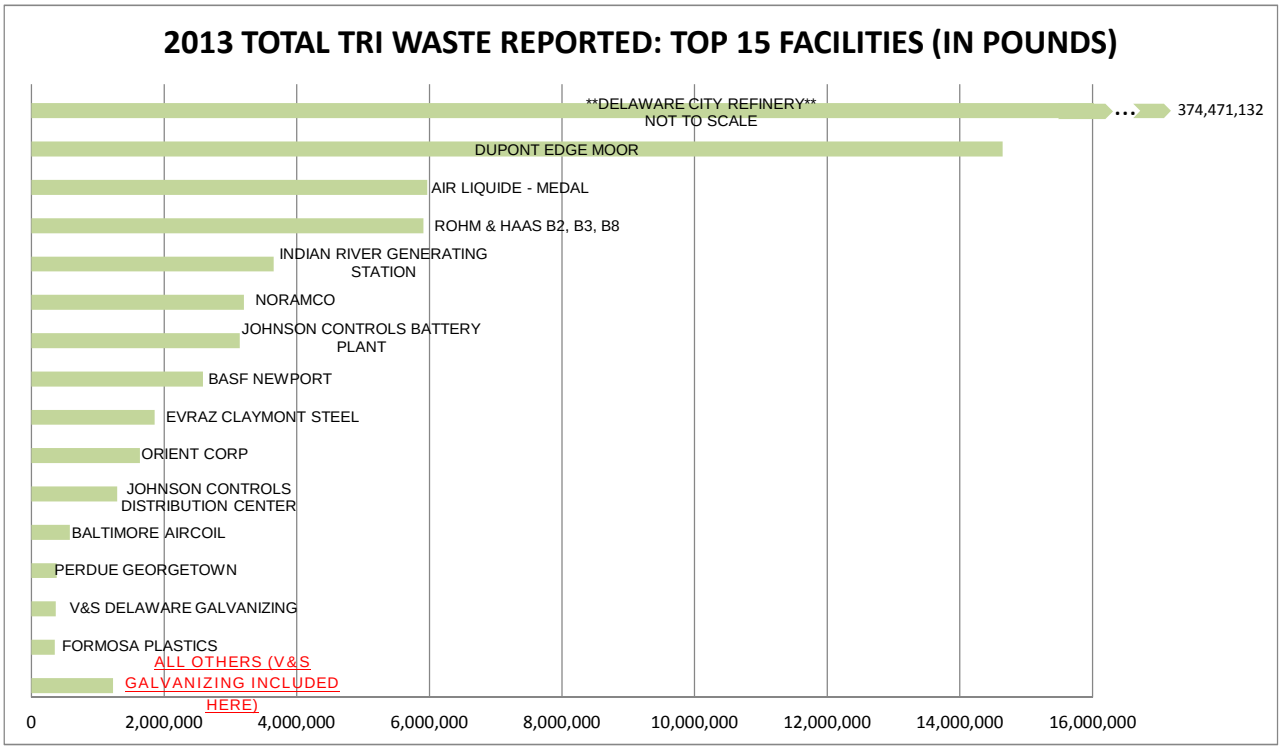


TRI FACILITY PROFILES

V & S GALVANIZING. CONT.

COMPARISON TO OTHER DELAWARE TRI FACILITIES:





NOTABLE 2013 NATIONAL RANKINGS:

V&S Galvanizing ranked 73rd in the off-site recylce of zinc compounds for fabricated metal facilities (NAICS 332) (out of 353 facilities).

TRI FACILITY PROFILES

VP RACING FUELS

LOCATION/CONTACT:

Address: 16 Brookhill Drive
Newark, DE 19702

Phone: (302)-368-1500

Contact: Jim Kelly

FACILITY OVERVIEW:

VP Racing Fuels reported under the North American Industrial Classification System (NAICS) as 324199, which covers petroleum and coal products manufacturing.

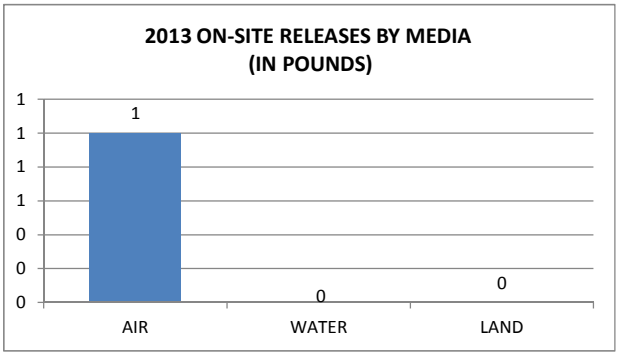
VP Racing Fuels has reported since 2001. The facility reported on 4 chemicals in 2013, with 3 chemicals being reported on the short Form A. Form A reports do not include waste management activities. (Chemicals must have less than 500 lbs of total waste activities and the total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds to be eligible to submit a Form A report.) Persistent Bio-Accumulative Toxic (PBT) Chemicals, such as lead, are ineligible for Form A.

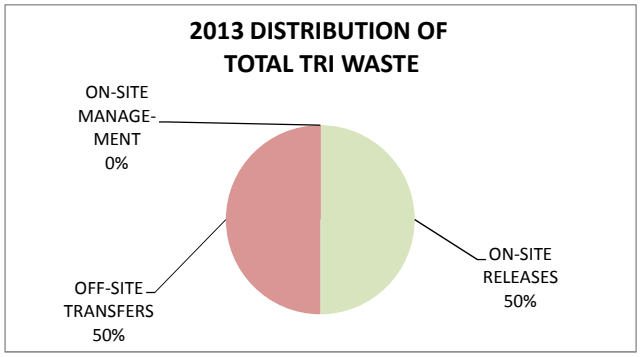
2013 TRI DATA (REPORTED IN POUNDS):

CHEMICAL	ON-SITE RELEASES				OFF-SITE TRANSFERS	ON-SITE MANAGEMENT	PBT	CARCINOGEN
	AIR	WATER	LAND	TOTAL				
LEAD COMPOUNDS	1	0	0	1	1	0	YES	YES
METHANOL*	0	0	0	0	0	0	NO	NO
TOLUENE*	0	0	0	0	0	0	NO	NO
XYLENE (MIXED ISOMERS)*	0	0	0	0	0	0	NO	NO
TOTAL	1	0	0	1	1	0		

*Reported on short Form A

GRAPHICAL INFORMATION:

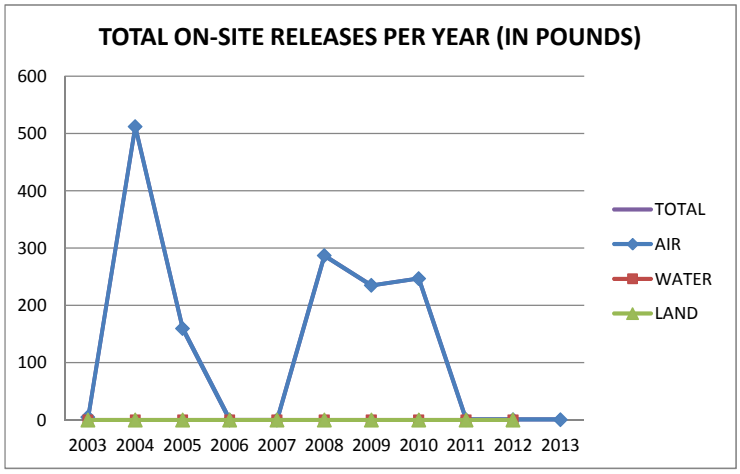


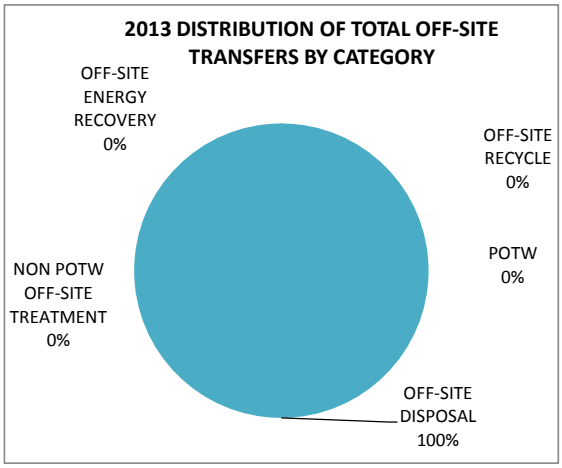


TRI FACILITY PROFILES

VP RACING FUELS, CONT.

GRAPHICAL INFORMATION CONT:





COMPARISON TO OTHER DELAWARE TRI FACILITIES:

VP Racing Fuels ranks in the bottom third in on-site releases reported by facilities in 2013. The bottom third accounted for less than a total of 300 pounds released on-site.

VP Racing Fuels ranks in the bottom third in total waste reported by facilities in 2013. The bottom third accounted for less than 31,000 pounds of total waste. Total waste includes waste released on-site, managed on-site, or transferred off-site.

EPCRA Reporting Program

Emergency Prevention and Response Section, DNREC
655 South Bay Rd., Suite 5N
Dover, DE 19901
(302) 739-9405

The Department of Natural Resources and Environmental Control
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