EPA

PUTTING SITES TO WORK

How Superfund Redevelopment in Region 3 Is Making a Difference in Communities

2018

100002011

Cover page photos:
Avtex Fibers site (Virginia), Mid-Atlantic Wood Preservers, Inc. (Maryland), E.I. Du Pont De Nemours & Co., Inc. (Newport Pigment Plant Landfill) (Delaware), Havertown PCP (Pennsylvania), Fike Chemical, Inc. (West Virginia), Dorney Road Landfill (Pennsylvania)

Figure 1. Skyline Soccer Plex pavilion at the Avtex Fibers site (Virginia).

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PREFACE

EPA's Superfund program is a cornerstone of the work that the Agency performs for citizens and communities across the country. The revitalization of places affected by contaminated lands is a key part of Superfund's mission, meeting community needs for thriving economies and improved environmental and public health outcomes. Through EPA's Superfund Redevelopment Initiative, the Agency contributes to these communities' economic vitality by supporting the return of sites to productive use.

EPA has established a renewed focus on accelerating work and progress at all Superfund sites across the country and has created the Superfund Task Force whose work includes promoting redevelopment and community revitalization. Working closely with communities, developers and property owners, EPA is leading the way to return these once-contaminated sites back to productive use.

These regional profiles highlight community-led efforts as EPA expedites cleanup and remediation and engages with partners and stakeholders to support redevelopment and community revitalization.

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INTRODUCTION

EPA Region 3 covers the Mid-Atlantic – Delaware, Maryland, Pennsylvania, Virginia, West Virginia and the District of Columbia – which is one of the nation's most diverse, developed and populated regions. Residents and visitors benefit from the region's diverse landscapes, which provide opportunities to enjoy wildlife and remarkable natural resources such as the Appalachian Mountains and the Chesapeake Bay. Looking to the future, the priorities of many Mid-Atlantic communities include sustainable economic growth and a healthy environment. A key part of this work centers on finding new uses for old industrial and federal facility sites, including Superfund sites. The Superfund program in EPA Region 3 is proud to play a role in these efforts.

The cleanup and reuse of Superfund sites often restores value to site properties and surrounding communities that have been negatively affected by contamination. Site redevelopment can revitalize a local economy with jobs, new businesses, tax revenues and local spending.

Region 3 Sites in Reuse and Continued Use: Business and Job Highlights

Businesses:	*430*
Total Annual Sales:	*$4.5 billion*
Number of People Employed:	*13,568*
Total Annual Employee Income:	*$951 million*

Figure 2. Entrance to the Southside Plaza business park at the Abex Corporation site (Virginia).

Through programs like the Superfund Redevelopment Initiative, EPA Region 3 helps communities reclaim cleaned-up Superfund sites. Factoring in future use of Superfund sites into the cleanup process promotes their safe redevelopment as appropriate. In addition, EPA Region 3 works closely with state and local officials to remove barriers that have kept many Superfund sites underutilized. EPA Region 3 works to ensure that businesses on properties being cleaned up under Superfund can continue operating so that protection of human health and the environment during site investigations and cleanup work occurs. This continuity enables these businesses to remain open and serve as a source of jobs for communities.

Superfund sites across Region 3 are now the location of business parks, shops and public service facilities. Many sites continue to encompass industrial operations such as large-scale manufacturing facilities and warehouses. Other sites now support natural areas, recreation trails and athletic fields. On-site businesses and organizations at current and former Region 3 Superfund sites provide an estimated 13,568 jobs and contribute an estimated $951 million in annual employment income. Cleaned-up sites in use in Region 3 generate $986,000 in annual property tax revenues for local governments.[1]

1 Business and property value tax figures represent only a subset of the beneficial effects of sites in reuse or continued use in Region 3. There are 73 Superfund sites in reuse or continued use in Region 3 for which EPA does not have business data, including 29 federal facilities on the Superfund National Priorities List (NPL). Not all sites in reuse involve an on-site business or other land use that would employ people. Several sites without businesses have beneficial effects that are not easily quantified, such as properties providing ecological or recreational benefits (e.g., parks, wetlands, ecological habitat and open space). In addition, there are 114 sites in reuse or continued use in Region 3 for which EPA does not have property value or tax data, including 29 NPL federal facilities.

This 2018 profile looks at how redevelopment activities at Superfund sites make a difference in communities across Region 3. In particular, it describes some of the beneficial effects of redevelopment and continued use of current and former Superfund sites. The profile also describes the land values and property taxes associated with Superfund sites returned to use following cleanup and sites that have remained in use throughout the cleanup process. EPA updates these profiles periodically. The beneficial effects may increase or decrease over time due to changes in:

- The number of sites in reuse or continued use.
- The number of on-site businesses.
- Data availability.
- Changes in business and property value data.

Figures presented represent only a subset of all Superfund sites in reuse or continued use in Region 3.

Figure 3. Left: The former American Viscose Corporation administrative building at the Avtex Fibers site has been refurbished and now supports several small businesses (Virginia). Right: The Jackson County Public Library at the Ravenswood PCE site (West Virginia).

SUPPORT FOR SUPERFUND REDEVELOPMENT

EPA Region 3 is committed to improving the health and livelihood of Americans by cleaning up and returning land to productive use. In addition to protecting human health and the environment through the Superfund program, Region 3 partners with stakeholders to encourage redevelopment opportunities at Superfund sites. Region 3 helps communities and cleanup managers consider redevelopment during cleanup planning and evaluate remedies already in place to ensure appropriate redevelopment at cleaned-up sites. In addition, EPA participates in partnerships with communities and encourages opportunities to support Superfund Redevelopment projects that emphasize environmental and economic sustainability.

Specific redevelopment support efforts in EPA Region 3 include:

- Identifying and evaluating local land use priorities to align with site cleanup plans through the redevelopment planning process.
- Facilitating cleanup and redevelopment discussions to help resolve key issues between parties interested in site redevelopment.
- Supporting targeted projects intended to help Region 3 communities and EPA find the right tools to move site redevelopment forward.
- Making efforts to help address communities' and developers' liability, safety and reuse concerns through development of educational materials, comfort letters, developer agreements and environmental status reports – known as Ready for Reuse Determinations – that provide information about the appropriate use of sites.
- Supporting partnerships with groups committed to returning Superfund sites to productive use, such as the Rails-to-Trails Conservancy, the U.S. Soccer Foundation, the U.S. Fish and Wildlife Service and local economic development organizations.
- Developing reuse fact sheets, websites, webinars and reuse case studies to share opportunities and lessons associated with Superfund Redevelopment.

These efforts have helped build expertise across the Mid-Atlantic Region, making it easier to both consider future use of Superfund sites prior to cleanup and to identify opportunities for removing reuse barriers. These efforts also help tribes, state agencies, local governments, communities, potentially responsible parties, site owners, developers, and other partners and stakeholders to better understand potential future uses for Superfund sites. This helps stakeholders engage early in the cleanup process, ensuring that Superfund sites are restored as productive assets for communities. Most importantly, these efforts lead to significant returns for communities, including jobs, annual income and tax revenues.

SUPERFUND REDEVELOPMENT: THE BIG PICTURE

EPA can take and oversee immediate action at contaminated sites through short-term cleanup actions, also called removal actions.[2] EPA then refers sites warranting long-term cleanup to its remedial program or to state programs. EPA's National Priorities List (NPL) is a list of sites the Agency is targeting for further investigation and possible remediation through the Superfund program. Once EPA places a site on the NPL, the Agency studies the contamination, identifies technologies that could address the material and evaluates alternative cleanup approaches. EPA then proposes a cleanup plan and, after collecting public input, issues a final cleanup plan. The Agency then cleans up the site or oversees cleanup activities. EPA has placed 217 sites in Region 3 on the NPL.

Whenever possible, EPA seeks to integrate redevelopment priorities into site cleanup plans. In Region 3, 142 NPL sites and two non-NPL Superfund sites are in use. These sites have either new uses in place or uses that remain in place from before cleanup. Many of these sites have been redeveloped for commercial, industrial and residential purposes. Others have been redeveloped for recreational, ecological and agricultural uses. In addition, redevelopment of some Superfund sites in Region 3 has helped spark revitalization of nearby underused industrial land. Many redeveloped sites support multiple uses and have the capacity to support additional uses and further redevelopment. The following sections take a closer look at the beneficial effects of businesses operating on current and former Superfund sites in Region 3.

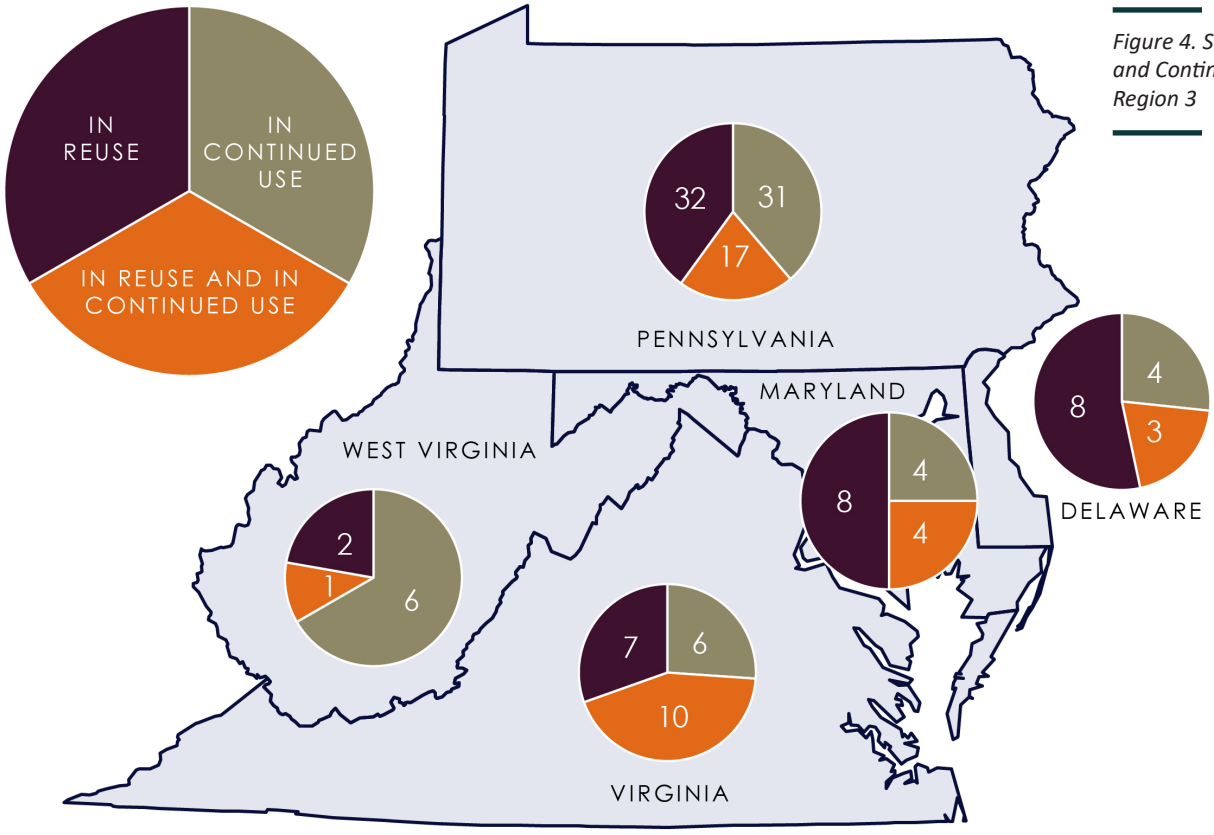

Figure 4. Sites in Reuse and Continued Use in Region 3

2 Removal actions may be taken at sites on the NPL and not on the NPL.

BENEFICIAL EFFECTS OF SUPERFUND SITE REDEVELOPMENT IN REGION 3

Businesses and Jobs

EPA has collected economic data for 430 businesses, government agencies and civic organizations operating on 69 NPL sites and two non-NPL sites in reuse and continued use in Region 3.[3] (See the State Redevelopment Profiles for each state's reuse details.) Businesses and organizations at these sites are part of several different sectors, including wholesale trade, construction, manufacturing, transportation and warehousing, professional, scientific and technical services, and health care and social services.

Businesses, facilities and organizations at these sites include international chemical company BASF Corporation, restaurants, navigation instrument manufacturing company Cobham, fire and police stations, the YMCA, the U.S. Geological Survey, and campus facilities for Pennsylvania State University.

The businesses and organizations at these sites earn about $4.5 billion in estimated annual sales and employ about 13,568 people, earning an estimated $951 million in annual employment income. This income injects money into local economies and generates revenue through personal state income taxes. These businesses also help local economies through direct purchases of local supplies and services. On-site businesses that produce retail sales and services also generate tax revenues through the collection of sales taxes, which support state and local governments. More detailed information is presented in Table 1.[4]

Table 1. Site and Business Information for Region 3 Sites in Reuse and Continued Use (2017)

	Sites[a]	Sites with Businesses[b]	Businesses[c]	Total Annual Sales[d]	Total Employees	Total Annual Employee Income
In Reuse	*57*	*27*	*209*	*$1.8 billion*	*6,206*	*$439 million*
In Continued Use	*51*	*29*	*111*	*$1.4 billion*	*3,417*	*$245 million*
In Reuse and in Continued Use	*36*	*15*	*110*	*$1.3 billion*	*3,945*	*$267 million*
Total	**144**	**71[e]**	**430**	**$4.5 billion**	**13,568**	**$951 million**

[a] Twenty-nine sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.

[b] Also includes other organizations such as government agencies, nonprofit organizations and civic institutions.

[c] Business information is not available for all businesses on all Superfund sites in reuse or continued use.

[d] For information on the collection of business, jobs and sales data, see Sources.

[e] See footnote 1, page 1.

3 See footnote 1, page 1.

4 For additional information on the collection of business, jobs and sales data, see Sources.

Figure 5. Construction of the South Norfolk Jordan Bridge at the Atlantic Wood Industries, Inc. site and across the Southern Branch of the Elizabeth River (Virginia).

Sites in Reuse and Continued Use: A Closer Look

Reuse Type	Description	Region 3 Example
In Reuse	*There is a new land use or uses on all or part of a site. This is because either the land use has changed (e.g., from industrial use to commercial use) or the site is now in use after being vacant.*	*Sharon Steel Corp (Fairmont Coke Works) (West Virginia) – formerly used for coke production and refinement of associated products, West Virginia State Police constructed its Troop 1 Headquarters on site in 2017.*
In Continued Use	*Historical uses at a site remain active; these uses were in place when the Superfund process started at the site.*	*Modern Sanitation Landfill (Pennsylvania) – this active, permitted landfill began operating in the 1940s.*
In Reuse and Continued Use	*Part of a site is in continued use and part of the site is in reuse.*	*Atlantic Wood Industries, Inc. (Virginia) – pre-cast concrete manufacturing continues at the site; the new South Norfolk Jordan Bridge runs through the site and across the Southern Branch of the Elizabeth River.*

Property Values and Property Tax Revenues

Properties cleaned up under the Superfund program and returned to use have the potential to significantly increase in value. This increased value can boost property tax revenues, which help pay for local government operations, schools, transit systems and other public services. Site properties at the Dover Gas Light Co. site in Delaware are now valued at over $9 million.

Identifying increases in property values and property taxes following cleanup and reuse is challenging. This is due to several factors, including limited data on past property values and the frequency and timing of local property value assessments. Likewise, many factors affect property values, including external economic and neighborhood factors not related to a site's contamination or Superfund status. It is also difficult to isolate the effects of Superfund cleanup and redevelopment using current property values. However, these values do provide insight into the current value of Superfund properties and the potential loss in economic value if the properties were not cleaned up and made available for reuse or continued use.

Region 3 Sites in Reuse and Continued Use: Property Value and Tax Highlights

Total Property Value: *$67 million*

Total Annual Property Taxes: *$986,000*

Figure 6. Commercial reuse at the Crater Resources, Inc./Keystone Coke Co./Alan Wood Steel Co. site (Pennsylvania).

EPA has collected property value and tax data for 30 Superfund sites in reuse and continued use in Region 3.[5] These sites span 280 property parcels and 1,697 acres. They have a total property value of $67 million. The current average total property value per acre is $39,000.

Land and improvement property value information is available for 24 sites. These properties have a total land value of $18 million and a total improvement value of $34 million.[6]

Property tax information is available for 29 sites. The properties generate a combined $986,000 in local property taxes annually.

Table 2. Property Value and Tax Information for Sites in Reuse and Continued Use in Region 3[a]

Total Land Value (24 sites)[b]	*Total Improvement Value (24 sites)*	*Total Property Value (30 sites)*	*Total Property Value per Acre (29 sites)[c]*	*Total Annual Property Taxes (29 sites)*
$18 million	*$34 million*	*$67 million*	*$39,000*	*$986,000*

[a] Results are based on an EPA Superfund Redevelopment Initiative effort in 2018 to collect on-site property values and property taxes for a subset of Superfund sites. The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2016 to 2017 where date information was provided. For additional information, see Sources.

[b] Detailed (land and improvement) property value data as well as tax data were not available for every site.

[c] Based on total property value amount of $67 million divided by total acreage of 1,697 acres.

5 There are 114 additional sites in reuse or continued use in Region 3 for which EPA does not have property value or tax data, including 29 NPL federal facilities. See footnote 1, page 1.

6 Property values consist of land value and the value of any improvements (buildings and infrastructure) placed on a property. When sites are redeveloped, some or all of these improvements may be new or already in place. In some cases, the breakdown showing the land value and improvement value is not always available; only the total property value may be available.

Beneficial Effects from Enhanced Recreational and Ecological Amenities

In addition to hosting commercial developments, retail centers and industrial facilities, many Region 3 sites in reuse and continued use provide recreational and ecological benefits. Greenspace and habitat reuses help attract visitors and residents and indirectly contribute to local economies.

Figure 7. Capped landfill and woodlands at the Strasburg Landfill site (Pennsylvania).

Careful planning can enable the integration of green spaces and habitat into site cleanup plans, resulting in the transformation of contaminated properties into valuable community and wildlife assets. Green spaces are integral components of sustainable communities – they can help protect the environment and human health while providing other social and economic benefits. Parks, community gardens and other public green spaces create opportunities for people to gather, exercise and connect with nature. The creation of green spaces and habitat at once-contaminated properties can serve to re-introduce ecosystems and biodiversity into urban and suburban landscapes by providing corridors for migrating species and preserving habitat. They can also mitigate stormwater runoff problems by slowly absorbing and naturally filtering stormwater, resulting in improved water quality due to decreased runoff and erosion.

Parks, natural areas and scenic landscapes also have great economic value – supporting regional economies through tourism, agriculture and other activities. Economic impacts of recreational activities can include outdoor recreation spending and reduced public costs related to healthcare and infrastructure. In 2012, outdoor recreation contributed $646 billion to the U.S. economy, supporting 6.1 million jobs and generating $39.9 billion in national tax revenue and $39.7 billion in state and local tax revenue.[7] Protected green space can also increase the property values of nearby homes by providing amenities that draw people to live and work in the community.

Many sites in Region 3 provide recreational and ecological benefits. The Woodlawn County Landfill site in Colora, Maryland, supports New Beginnings – the Woodlawn Wildlife Habitat Area, a community environmental education and recreation resource frequented by local schools and the Boy Scouts and Girl Scouts of America. The Ohio River Park site on Neville Island in Pennsylvania has been redeveloped as the Island Sports Center, a recreation facility that includes miniature golf, ice skating, batting facilities, track and field, and lacrosse. At the Strasburg Landfill site in Newlin Township, Pennsylvania, the site owner is working with the Natural Lands Trusts, a regional conservation organization, to ensure the site's ecological and open space reuse remains in perpetuity.

7 The Outdoor Recreation Economy. Outdoor Industry Association. Available at outdoorindustry.org/pdf/OIA_OutdoorRecEconomyReport2012.pdf.

Why Are Wetlands Economically Important?

Superfund site reuse can support wetland habitat, as seen at several sites in Region 3. At the Palmerton Zinc Pile site in Palmerton, Pennsylvania, extensive ecological revitalization efforts included the restoration of 40 acres of wetlands following contaminated soil removal. At the Craig Farm Drum site in Parker, Pennsylvania, the cleanup involved the creation of wetlands to replace those destroyed during the construction of an on-site landfill. At the Army Creek Landfill site in New Castle, Delaware, EPA collaborated with federal, state and local agencies to incorporate wildlife habitat in the cleanup design, which included the creation of standing wetlands to prevent erosion and surface water runoff and provide valuable habitat.

Figure 8. Restored wetland at the Palmerton Zinc Pile site (Pennsylvania).

Wetlands provide a variety of benefits. The combination of shallow water, high levels of nutrients and primary productivity is ideal for organisms that form the base of the food web and feed many species of fish, amphibians, shellfish and insects. Wetlands are extremely effective in removing pollutants from water and acting as filters for future drinking water. Wetlands play a role in reducing the frequency and intensity of floods. They can store large amounts of carbon. They also provide recreational amenities.

These benefits also have economic value. Replacing wetlands' water treatment services with manmade facilities, for example, would be expensive. Worldwide, wetlands provide an estimated $14.9 trillion in ecosystem services. To learn more, see:

- EPA's *Economic Benefits of Wetlands*: nepis.epa.gov/Exe/ZyPDF.cgi/2000D2PF.PDF?Dockey=2000D2PF.PDF.
- EPA's *Why Are Wetlands Important?*: www.epa.gov/wetlands/why-are-wetlands-important.

REDEVELOPMENT IN ACTION

HAVERTOWN PCP

Businesses, Recreation and Public Health

The 12-acre Havertown PCP Superfund site is located in Haverford Township, Pennsylvania. From 1947 to 1991, National Wood Preservers operated a wood treatment facility on site. Improper disposal of wood-treating process wastes contaminated soil, sediment and groundwater. EPA added the site to the NPL in 1983. To date, EPA has removed contaminated materials and capped areas to protect public health. Groundwater treatment and monitoring are ongoing.

Today, parts of the site remain in continued use and support new uses. Philadelphia Chewing Gum Company closed its on-site plant in 2003. Recognizing the opportunity presented by a large, developable parcel in an underserved area, the YMCA approached Havertown about using the property for a new gymnasium. YMCA worked with EPA and Haverford Township on plans for the site's redevelopment. Crews began construction in May 2012 and the 80,000-square-foot Haverford Area YMCA facility opened in October 2013. Serving 24,000 members, the facility features an indoor track, gymnasium, swimming pools, a childcare area, a 10,000-square-foot wellness center and classrooms. In October 2015, the YMCA facility received EPA Region 3's 2015 Excellence in Site Reuse Award.

In 2015, reuse of the National Wood Preservers portion of the site west of North Eagle Road moved forward. A Mr. Storage self-storage facility was built on top of the 3-acre cap installed in 1997. EPA, the state and Haverford Township reviewed construction plans and monitored the project to make sure it did not impact the protectiveness of the cap or the operation of the groundwater treatment system. Construction of the 21,000-square-foot, 3-story facility finished in 2016. The storage facility's slab built over the cap helps further protect the site's remedy.

Once a blighted and abandoned former industrial area, the Havertown PCP site has been restored to productivity as a bustling hub that supports businesses, recreation and public health. Today, site businesses employ over 400 people and contribute nearly $15 million in estimated annual employment income to the local economy. In 2017, the properties that make up the site had a combined value of nearly $8 million.

Figure 9. The Haverford Area YMCA at the Havertown PCP site (Pennsylvania).

REDEVELOPMENT IN ACTION

MILL CREEK DUMP

Driving Range and Airport Runway

The 124-acre Mill Creek Dump Superfund site is located in Millcreek, Pennsylvania. For 40 years, an industrial and municipal landfill operated on site. Wastes disposed of at the landfill included foundry sands, solvents, waste oils, and other industrial and municipal wastes. On-site practices resulted in the contamination of soil, sediment and groundwater. The Pennsylvania Department of Environmental Resources closed the landfill in 1981 and EPA placed the site on the NPL in 1984. Cleanup included groundwater treatment, landfill capping, installation of a flood retention basin, and wetlands replacement.

In 1996, the site's potentially responsible parties (PRPs) and Millcreek Township worked with EPA to modify the landfill cap design to allow for construction of a golf course. The golf course - the Millcreek Golf and Learning Center - opened on site in 2001. PRPs donated the nine-hole golf course and driving range property to Millcreek Township in 2002. The golf course temporarily closed in 2011 to allow construction of the Erie International Airport runway expansion project. The project required 12 acres of the cap and golf course area for the runway expansion. The former runway did not meet the Federal Aviation Administration's safety standards to accommodate larger commercial airplanes. The runway extension opened in 2012. The longer runway improves safety, allows bigger airplanes to land at the airport and helps the airport serve more passengers. The driving range reopened in 2014. With the help of a state grant, Millcreek Township is renovating the golf course and intends to reopen it in 2019.

Figure 10. The Millcreek Golf Course at the Mill Creek Dump site (Pennsylvania).
Imagery © 2018 Google.

REDEVELOPMENT IN ACTION

PALMERTON ZINC PILE

Ecological Restoration

The Palmerton Zinc Pile Superfund site is located in Palmerton, Pennsylvania. Former zinc smelting operations at two plants in Palmerton (east and west plants) resulted in area-wide contamination. For nearly 80 years, the New Jersey Zinc Company disposed of smelting waste at the site. Former smelting operations released heavy metals into the valley, causing the widespread loss of trees on about 4,000 acres of Blue Mountain. EPA placed the site on the NPL in 1983. Cleanup included revegetation of Blue Mountain, surface water diversion and treatment, and soil cleanup on private properties. EPA is currently developing a cleanup plan for shallow groundwater and surface water.

In 2002, the Lehigh Gap Nature Center purchased over 750 acres of property along Blue Mountain. The following year, the Lehigh Gap Wildlife Refuge officially opened to the public. This habitat, along with other impacted areas of Blue Mountain, was created by the revegetation and reforestation of the site with native warm season grasses and 13,000 trees, including 4,000 of the nearly extinct American Chestnut tree. The refuge provides habitat for local wildlife and migratory species while also stabilizing soils, minimizing erosion and improving water quality. The refuge has an extensive trail system for hikers, birders and outdoors enthusiasts. It also offers programs in environmental education, wildlife viewing and habitat restoration research. In 2010, a new visitor and education center opened at the site. It includes a research library and classroom and laboratory space.

Collaboration between the Lehigh Gap Nature Center, EPA, Pennsylvania's Department of Environmental Protection, PRPs and other partners has created a valuable reuse with ecological and community benefits. In 2014, EPA Region 3 awarded Lehigh Gap Nature Center its Excellence in Site Reuse Award. The award highlights the organization's efforts to reuse a large portion of the site as a wildlife preserve that promotes ecological conservation and education.

Figure 11. The Lehigh Gap Nature Center at the Palmerton Zinc Pile site (Pennsylvania).

REDEVELOPMENT IN ACTION

ABEX CORP.

Business Park and Community Health Center

Located in Portsmouth, Virginia, the Abex Corp. Superfund site was once a metals foundry. From 1928 to 1978, disposal of foundry waste sands and emissions from the smelting furnaces contaminated on-site soil and several nearby properties with lead and other contaminants. EPA added the site to the NPL in 1990. Under EPA oversight, the PRP cleaned up the site. Cleanup activities included demolishing foundry buildings, removing contaminated soil and restricting land use. Cleanup and investigation activities continue at other areas on site.

With the area growing rapidly, site reuse was a top priority for the city of Portsmouth. Successful cleanup enabled reuse of the cleaned-up area for public service, commercial and industrial land uses. In 2001, a fire department and police training facility opened at the site. The city of Portsmouth's redevelopment of the site includes a business park and the non-profit Hampton Roads Community Health Center. The health center provides primary care, pharmaceutical, dental and family planning health services to the local community. Together, site businesses and organizations employ over 130 people and contribute nearly $9 million in estimated annual employment income. In 2017, site businesses generated about $19 million in estimated annual sales. The total value of the site property in 2017 was over $14 million.

Figure 12. The fire department and police training facility at the Abex Corp. site (Virginia).

REDEVELOPMENT ON THE HORIZON IN REGION 3

TRANSFORMING A FORMER WOOD TREATMENT PLANT INTO A COMMERCIAL/INDUSTRIAL ASSET

The 10-acre Rentokil, Inc. Superfund site in Richmond, Virginia, was the location of wood-treating operations from 1957 to 1990. EPA selected a final cleanup approach for the site in 1993 and the site's responsible party, Virginia Properties (a Rentokil subsidiary), completed remedy construction in 1999. Remedial components included off-site disposal of contaminated materials, cap and slurry wall construction, long-term groundwater monitoring and wetland restoration.

During remedy design, Virginia Properties proposed constructing the remedy in a way that would support future redevelopment following remedy construction. EPA and Virginia Department of Environmental Quality accepted the proposal, which included the incorporation of building foundations – "divider walls" – to support future commercial and light industrial development.

In 2009, EPA deleted part of the site from the NPL to further accommodate commercial and industrial development. This partial deletion included the operable unit consisting of soil and sediment at former Wetland Areas B and C and the operable unit that addressed groundwater at former Wetland Area C. Virginia Properties sold the 3.8-acre former Wetland Area B property, which is zoned for commercial and industrial use and ready for development. Virginia Properties is currently marketing other site areas for redevelopment.

Figure 13. Fenced, vacant property, ready for reuse at the Rentokil, Inc. site (Virginia).

CONCLUSION

EPA works closely with its partners at Superfund sites across the Mid-Atlantic Region to make sure sites can safely be reused or remain in continued use during and following cleanup.

The businesses and organizations at these sites provide jobs and income for communities and generate local and state taxes. Cleanup and redevelopment also helps stabilize and boost property values at the sites and at surrounding properties. There are 142 NPL sites and two non-NPL Superfund sites in Region 3 that have either new uses in place or uses that have remained in place since before cleanup. Future uses are planned for many more Superfund sites in Region 3, including at least one site in each of the five Region 3 states. EPA remains committed to working with all stakeholders to support Superfund redevelopment opportunities in Region 3.

Figure 14. Pond at the Avtex Fibers site (Virginia),

The redevelopment of Superfund sites takes time and is often a learning process for project partners. Ongoing coordination among EPA, tribes, state agencies, local governments, communities, PRPs, site owners, developers, and nearby residents and business owners is essential. EPA tools, including reuse assessments and plans, comfort letters and partial deletions of sites from the NPL, often serve as the foundation for moving forward. At some sites, parties may need to take additional actions to ensure reuses are compatible with site remedies.

Across the Mid-Atlantic Region, Superfund sites are now home to major commercial and industrial facilities, mid-size developments and small businesses providing services to surrounding communities. EPA is committed to working with all stakeholders to support the restoration and renewal of these sites as long-term assets.

EPA Superfund Site Redevelopment Resources

EPA Region 3 Superfund Redevelopment Initiative Coordinator
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Superfund Sites in Reuse: find more information about Superfund sites in reuse
www.epa.gov/superfund-redevelopment-initiative/find-sites-reuse

Superfund Redevelopment Initiative Website: tools, resources and more information about Superfund site reuse
www.epa.gov/superfund-redevelopment-initiative

EPA Office of Site Remediation Enforcement Website: tools that address landowner liability concerns
www.epa.gov/enforcement/landowner-liability-protections

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STATE REDEVELOPMENT PROFILES





DELAWARE REDEVELOPMENT PROFILE

EPA partners with the Delaware Department of Natural Resources and Environmental Control to oversee the investigation and cleanup of Superfund sites in Delaware. Delaware has 15 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse and continued use in Delaware.

Businesses and Jobs

EPA has collected economic data for 73 businesses and organizations operating on eight sites in reuse and continued use in Delaware.

Table 3. Detailed Site and Business Information for Sites in Reuse and Continued Use in Delaware (2017)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	8	3	4	$7 million	43	$3 million
In Continued Use	4	3	14	$62 million	184	$13 million
In Reuse and in Continued Use	3	2	55	$259 million	1,941	$119 million
Total	15	8	73	$328 million	2,168	$135 million

[a] One site is a federal facility. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] Business information is not available for all businesses on all Superfund sites in reuse or continued use.

Property Values and Property Tax Revenues

EPA has collected property value data for seven Superfund sites in reuse and continued use in Delaware. These sites span 170 property parcels and 591 acres.

Table 4. Property Value and Tax Information for Sites in Reuse and Continued Use in Delaware[a]

Total Land Value (7 sites)	Total Improvement Value (7 sites)	Total Property Value (7 sites)	Total Annual Property Taxes (7 sites)
$7 million	$18 million	$25 million	$603,000

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which is 2017 for all data collected.

Figure 15. The office building for a trucking business at the Halby Chemical Co. site.

Did You Know?

From 1948 to 1980, a plant made chemicals at the Halby Chemical Co. site in New Castle, Delaware. More recently, truck and transportation services have remained active on site during cleanup. These businesses employ 61 people. They provide over $3 million in estimated annual income and generate over $8.5 million in estimated annual sales.

MARYLAND REDEVELOPMENT PROFILE

EPA partners with the Maryland Department of the Environment to oversee the investigation and cleanup of Superfund sites in Maryland. Maryland has 16 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse and continued use in Maryland.

Businesses and Jobs

EPA has collected economic data for 11 businesses and organizations operating on four sites in reuse and continued use in Maryland.

Table 5. Detailed Site and Business Information for Sites in Reuse and Continued Use in Maryland (2017)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*8*	*4*	*11*	*$14 million*	*118*	*$5 million*
In Continued Use	*4*	*0*	*0*	*$0*	*0*	*$0*
In Reuse and in Continued Use	*4*	*0*	*0*	*$0*	*0*	*$0*
Total	*16*	*4*	*11*	*$14 million*	*118*	*$5 million*

[a] Eight sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] Business information is not available for all businesses on all Superfund sites in reuse or continued use.

Property Values and Property Tax Revenues

EPA has collected property value data for two Superfund sites in reuse and continued use in Maryland. These sites span four property parcels and 25 acres.

Table 6. Property Value and Tax Information for Sites in Reuse and Continued Use in Maryland[a]

Total Land Value (0 sites)	Total Improvement Value (0 sites)	Total Property Value (2 sites)	Total Annual Property Taxes (2 sites)
$0	*$0*	*$1 million*	*$24,000*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2016 to 2017.

Figure 16. Boats parked at the Mid-Atlantic Wood Preservers, Inc. site.

Did You Know?

An agreement between EPA and a neighboring property owner facilitated reuse at the Mid-Atlantic Wood Preservers, Inc. site in Harmans, Maryland. The owner expanded operations – a parking lot and office space – onto part of the site. A boat repair shop and propane tank and fuel storage facility are also active on site.

PENNSYLVANIA REDEVELOPMENT PROFILE

EPA partners with the Pennsylvania Department of Environmental Protection to oversee the investigation and cleanup of Superfund sites in Pennsylvania. Pennsylvania has 80 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse and continued use in Pennsylvania.

Businesses and Jobs

EPA has collected economic data for 277 businesses and organizations operating on 47 sites in reuse and continued use in Pennsylvania.

Table 7. Detailed Site and Business Information for Sites in Reuse and Continued Use in Pennsylvania (2017)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*32*	*14*	*156*	*$1.5 billion*	*5,219*	*$387 million*
In Continued Use	*31*	*22*	*74*	*$1.3 billion*	*2,806*	*$209 million*
In Reuse and in Continued Use	*17*	*11*	*47*	*$929 million*	*1,840*	*$138 million*
Total	*80*	*47*	*277*	*$3.7 billion*	*9,865*	*$734 million*

[a] Six sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] Business information is not available for all businesses on all Superfund sites in reuse or continued use.

Property Values and Property Tax Revenues

EPA has collected property value data for 18 Superfund sites in reuse and continued use in Pennsylvania. These sites span 78 property parcels and 1,003 acres.

Table 8. Property Value and Tax Information for Sites in Reuse and Continued Use in Pennsylvania[a]

Total Land Value (14 sites)	Total Improvement Value (14 sites)	Total Property Value (18 sites)	Total Annual Property Taxes (17 sites)
$7 million	*$5 million*	*$26 million*	*$239,000*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2016 to 2017 where date information was provided.

Figure 17. One of the office buildings in Renaissance Park at the Crater Resources, Inc./Keystone Coke Co./Alan Wood Steel Co. site.

Did You Know?

Cleanup at the Crater Resources, Inc./Keystone Coke Co./Alan Wood Steel Co. site in Upper Merion Township, Pennsylvania, enabled the site's successful reuse. Today, Renaissance Park, a commercial office hub, is located on site. A residential development has also been proposed for the site. Fifty-seven businesses operate at the park. They employ about 3,400 people and provide almost $300 million in estimated annual income. They generate nearly $1.2 billion in estimated annual sales.

VIRGINIA REDEVELOPMENT PROFILE

EPA partners with the Virginia Department of Environmental Quality to oversee the investigation and cleanup of Superfund sites in Virginia. Virginia has 23 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse and continued use in Virginia.

Businesses and Jobs

EPA has collected economic data for 45 businesses and organizations operating on eight sites in reuse and continued use in Virginia.

Table 9. Detailed Site and Business Information for Sites in Reuse and Continued Use in Virginia (2017)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*7*	*4*	*35*	*$258 million*	*819*	*$44 million*
In Continued Use	*6*	*2*	*2*	*$50 million*	*110*	*$5 million*
In Reuse and in Continued Use	*10*	*2*	*8*	*$99 million*	*164*	*$10 million*
Total	*23*	*8*	*45*	*$408 million*	*1,093*	*$59 million*

[a] Eleven sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] Business information is not available for all businesses on all Superfund sites in reuse or continued use.

Property Values and Property Tax Revenues

EPA has collected property value data for two Superfund sites in reuse and continued use in Virginia. These sites span 26 property parcels and 72 acres.

Table 10. Property Value and Tax Information for Sites in Reuse and Continued Use in Virginia[a]

Total Land Value (2 sites)	Total Improvement Value (2 sites)	Total Property Value (2 sites)	Total Annual Property Taxes (2 sites)
$4.5 million	*$10 million*	*$14.5 million*	*$113,000*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2016 to 2017.

Figure 18. Police training in progress at the Dixie Caverns County Landfill site.

Did You Know?

From 1965 to 1976, an unlicensed municipal landfill operated at the Dixie Caverns County Landfill site in Salem, Virginia. Following cleanup, the Roanoke County Police Department built several buildings on site, including a training facility with classrooms and an outdoor shooting range. The Laurel Mountain Driver Training Center trains officers to drive vehicles safely in a variety of conditions.

WEST VIRGINIA REDEVELOPMENT PROFILE

EPA partners with the West Virginia Department of Environmental Protection to oversee the investigation and cleanup of Superfund sites in West Virginia. West Virginia has nine Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse and continued use in West Virginia.

Businesses and Jobs

EPA has collected economic data for 24 businesses and organizations operating on four sites in reuse and continued use in West Virginia.

Table 11. Detailed Site and Business Information for Sites in Reuse and Continued Use in West Virginia (2017)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales[c]	Total Employees	Total Annual Employee Income
In Reuse	*2*	*2*	*3*	*$388,000*	*7*	*$249,000*
In Continued Use	*6*	*2*	*21*	*$6 million*	*317*	*$18 million*
In Reuse and in Continued Use	*1*	*0*	*0*	*$0*	*0*	*$0*
Total	*9*	*4*	*24*	*$6 million*	*324*	*$18 million*

[a] Two sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] Business information is not available for all businesses on all Superfund sites in reuse or continued use.
[c] While sales values typically exceed estimated totals of annual income, sales can sometimes be lower than estimated income. This could be attributed to a number of business conditions and/or data reporting. In addition, annual sales figures are not available (or applicable) for every organization that makes jobs data available.

Property Values and Property Tax Revenues

EPA has collected property value data for one Superfund site in reuse in West Virginia. This site spans two property parcels and six acres.

Table 12. Property Value and Tax Information for Sites in Reuse and Continued Use in West Virginia[a]

Total Land Value (1 site)	Total Improvement Value (1 site)	Total Property Value (1 site)	Total Annual Property Taxes (1 site)
$265,000	*$176,000*	*$441,000*	*$8,000*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which is 2017 for all data collected.

Figure 19. Tanker trucks parked at the Fike Chemical, Inc. site.

Did You Know?

Chemical and sewage operations at the Fike Chemical, Inc. site in Nitro, West Virginia, contaminated soil and groundwater. Cleanup enabled the reuse of the site. Today, a company uses capped areas for parking and tanker truck washing and maintenance.

SOURCES

BUSINESS, JOBS, SALES AND INCOME INFORMATION

Information on the number of employees and sales volume for on-site businesses comes from the Hoovers/Dun & Bradstreet (D&B) (www.dnb.com) database. EPA also gathers information on businesses and corporations from D&B. D&B maintains a database of more than 225 million active and inactive businesses worldwide.

When Hoovers/D&B research was unable to identify employment and sales volume for on-site businesses, EPA used the ReferenceUSA database (resource.referenceusa.com). In cases where ReferenceUSA did not include employment and sales volume for on-site businesses, EPA used the Manta database (www.manta.com). The databases include data reported by businesses. Accordingly, some reported values might be underestimates or overestimates. In some instances, business and employment information came from local newspaper articles and discussions with local officials and business representatives. While sales values typically exceed estimated totals of annual income, sales can sometimes be lower than estimated income. This can be attributed to a number of business conditions and/or data reporting.

EPA obtained wage and income information from the U.S. Bureau of Labor Statistics (BLS). Part of the U.S. Department of Labor, the BLS is the principal federal agency responsible for measuring labor market activity, working conditions and price changes in the economy. All BLS data meet high standards of accuracy, statistical quality and impartiality.

EPA used the BLS Quarterly Census of Employment and Wages database to obtain average weekly wage data for site businesses. Average weekly wage data were identified by matching the North American Industry Classification System (NAICS) codes for each type of business with weekly wage data for corresponding businesses in site counties. If weekly wage data were not available at the county level, EPA sought wage data by state or national level, respectively. In cases where wage data were not available for the six-digit NAICS code, EPA used higher-level (less-detailed) NAICS codes to obtain the wage data.

To estimate the annual income earned from jobs at site businesses, EPA multiplied the average weekly wage figure by the number of weeks in a year (52) and by the number of jobs (employees) for each business.

Business and employment data used for this profile were collected in 2017. Estimated annual employment income was calculated using 2017 jobs data and BLS average weekly wage data for those jobs from 2016 (the latest available wage data at the time of this profile). Federal facility sites are included in calculations of total sites in reuse or continued use only. Federal facility sites are excluded from all other calculations (i.e., number of sites with businesses, number of businesses, total jobs, total income and total annual sales). All sales and income figures presented have been rounded for the convenience of the reader.

PROPERTY VALUE AND TAX INFORMATION

EPA collected on-site property values and property taxes included in this profile for a subset of Superfund sites by comparing available site boundary information with available parcel boundary information and gathering information for selected parcels from county assessor datasets. The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2016 to 2017 where date information was provided. All figures presented have been rounded for the convenience of the reader. Federal facility sites are excluded from all property value and tax calculations.

REUSE INFORMATION SOURCES

Write-ups of sites in reuse or continued use included in this profile are based on available EPA resources, including Superfund Redevelopment Initiative case studies as well as other resources. Links to EPA's Superfund Redevelopment Initiative case studies and other resources are included below.

EPA Resources

Abex Corporation. 2011. Demonstration Project. semspub.epa.gov/src/document/03/900123.

Abex Corporation. 2011. Reuse and the Benefit to the Community, Abex Corporation Site. semspub.epa.gov/src/document/03/900074.

Havertown PCP. 2017. Reuse and Benefit to the Community, Havertown PCP Superfund Site. semspub.epa.gov/src/document/HQ/100000609.

Mill Creek Dump. 2012. Demonstration Project. semspub.epa.gov/src/document/03/900125.

Palmerton Zinc Pile. 2013. Demonstration Project. semspub.epa.gov/src/document/03/900124.

Strasburg Landfill. 2006. Demonstration Project. nepis.epa.gov/Exe/ZyPDF.cgi/P1007WTP.PDF?Dockey=P1007WTP.PDF.

Other Resources

John Last. "Millcreek Plans to Re-Open Golf & Learning Center After Losing Holes to Airport." Erie News Now. Updated April 17, 2017. www.erienewsnow.com/story/35115077/millcreek-plans-to-re-open-golf-learning-center-after-losing-holes-to-airport.

Back cover photos: Ravenswood PCE (West Virginia), Avtex Fibers (Virginia)


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1650 Arch Street
Philadelphia, PA 19103-2029

September 2018

www.epa.gov/aboutepa/epa-region-3-mid-atlantic