

Executive Summary

Limited space and sustained growth on the Charleston Peninsula in South Carolina place a premium on maximizing resources and creatively recycling land. A case in point – the Macalloy Corporation Superfund site, the former location of a ferrochrome alloy manufacturing plant. Today, the once-contaminated site has been cleaned up and returned to use. A 30-acre industrial park is located on site, with an additional 110-acre area ready for redevelopment.

Cleanup at the site integrated reuse as part of site activities. EPA and the South Carolina Department of Health and Environmental Control (SCDHEC) worked with the developer of the nearby Magnolia Project, an urban community development initiative, to coordinate the cleanup with the developer’s plans for both the Magnolia Project and the site. The developer purchased the site property which then became part of the project. Site cleanup and redevelopment were part of the largest environmental restoration of former industrial property ever undertaken by a private company in South Carolina. The developer relocated existing commercial and industrial businesses from the Magnolia Project’s proposed location along the Ashley River to the 30-acre industrial park on site, enabling development in both places to move forward. This case study explores the site’s cleanup and reuse in greater detail, illustrating the opportunities, benefits and impacts of Superfund redevelopment in action.

Positive Impacts

- On-site businesses at the industrial park employ over 60 people full time, providing over \$2.5 million in annual employment income to the community.
- In 2011, Charleston County received \$400,000 in taxes from properties at the site.
- Sonoco Recycling, LLC employs 10 people full time as well as 40 contracted employees on site, providing annual employment income of \$2 million. The company operates more than 40 recycling facilities worldwide.
- In 2012, Sonoco Recycling, LLC finished an expansion of their facility on site. The new facility allows the company to handle up to 1.5 tons of additional recyclable materials each month.
- The relocation of businesses to the site property has provided space for these businesses to grow as well as development space for the planned Magnolia Project.



Figure 1. The site’s location in Charleston, Charleston County, South Carolina

Introduction

Superfund site remediation results in restored value to site properties and surrounding communities. Once a site property is ready for reuse, it can revitalize a local economy with jobs, new businesses, tax revenues and local spending. This case study captures the on-site and community impacts of new development at the Macalloy Corporation Superfund site.

The site encompasses approximately 140 acres along Shipyard Creek, on a section of the Charleston Peninsula known as “The Neck,” in southeastern South Carolina. This area of the peninsula is highly industrialized, with businesses reliant on the region’s highway and rail networks and waterways. The site occupies a prime location on the peninsula; it borders Interstate 26, a CSX rail line and Shipyard Creek. An industrial park currently occupies 30 acres at the site. The remaining site property provides 110 acres for future development.



Figure 2. The industrial park and future development area at the site—both are located near significant transportation infrastructure

Site History

From 1941 until 1998, ferrochromium alloy manufacturing took place at the site. Ferrochrome alloy is used in the production of high-quality stainless steel. Pittsburgh Metallurgical Company owned and operated a facility at the site from 1941 until 1966. Airco (British Oxygen Corporation) operated at the site from 1966 until 1979 and Macalloy Corporation from 1979 until 1998. Manufacturing operations ended in 1998. The U.S. Department of Defense also owned, operated and used portions of the site to produce and store ferrochromium alloy, chrome ore and wastes from 1942 until 1998.¹

Manufacturing operations used furnaces to convert chromium-bearing ores into ferrochromium. This process generated wastewater, airborne waste gases and soil waste. From 1988 until 1997, Macalloy Corporation disposed of wastes in an unlined surface impoundment. Manufacturing operations and waste disposal practices

¹ For more information on the site’s history, please see the site’s first Five-Year Review Report, available online at <http://www.epa.gov/superfund/sites/fiveyear/f2010040003553.pdf>.

resulted in contamination of soil, ground water, surface water and sediment. In 2000, EPA placed the site on the Superfund program's National Priorities List.²

Site Cleanup and Transformation

EPA worked closely with the Macalloy Potentially Responsible Party (PRP) Group, the parties responsible for the site's cleanup, throughout the cleanup process. In 1998, the same year that the facility closed, cleanup activities began. EPA and the PRP Group constructed an interim stormwater management system to address the immediate threat of contaminated stormwater releases from the site into Shipyard Creek. In 2002, EPA selected the long-term remedy for the site, which included excavation and off-site disposal of contaminated soil and waste, excavation of contaminated sediment in Shipyard Creek and placement of clean sand in the excavated areas, treatment of contaminated ground water and soil on site, and construction of a comprehensive stormwater management system. EPA approved the PRP Group's remedial design and the PRP Group began cleanup activities in October 2004 under the oversight of EPA and SCDHEC.

At the same time, EPA and SCDHEC were also coordinating with developer Ashley II of Charleston, LLC (Ashley II), a partnership of local and national real estate interests. One mile away, Ashley II was planning the Magnolia Project, an urban community development incorporating residential neighborhoods, office space and community amenities. The developer saw an opportunity to relocate existing commercial and industrial businesses from the project's proposed location to the Macalloy Corporation Superfund site. The relocation allowed the developer to expand the Magnolia Project's walkable community space without eliminating industry or jobs and enabled planning and development to move forward in both places.



Figure 3: Macalloy Corporation Superfund site following cleanup activities

EPA and SCDHEC worked with the developer and the site's PRP Group to update and integrate cleanup and redevelopment plans for the site. For example, when the developer prioritized the future use of the site's waterfront property along Shipyard Creek, EPA was able to prioritize this area in site cleanup plans as well. EPA modified the plan for the comprehensive stormwater management system, changing the location of the site's stormwater retention pond. Movement of the retention pond enhanced access to the creek, making future use of the site's waterfront property as a deepwater port a possibility. Following the site's cleanup, the developer installed roads and utilities and improved drainage to prepare it for development. Today, the three businesses relocated from the Magnolia Project property occupy the 30-acre industrial park on the southern portion of the site.

² For more information on the site's discovery and listing, please see: <http://www.epa.gov/superfund/sites/rods/fulltext/r0402084.pdf>.

The collaboration between EPA, SCDHEC, the site's PRP Group and Ashley II resulted in the completion of cleanup activities at an accelerated pace. The site, a contaminated area for more than 50 years, moved from being listed on EPA's National Priorities List to cleaned up in just six years. In 2006, EPA recognized the site as the 1,000th Superfund site to achieve the Construction Complete milestone. Coordinating cleanup and redevelopment activities has protected public health and the environment and restored the site to beneficial reuse for the local community, with opportunities for additional development in the future.

Local Impacts

The 30-acre industrial park that operates on the southern portion of the site includes several site tenants.



Figure 4: The 30-acre industrial park located on the southern portion of the site

Sonoco Recycling, LLC

Sonoco Recycling, LLC relocated their material recycling operations to the site in 2008. Operations take place on a 5-acre area. The company collects, sorts and bales paper, plastics, aluminum and tin cans for recycling. The relocation provided the company with more land for a larger facility located near the Port of Charleston, increasing export capabilities. In May 2012, the company finished an expansion of their facility at the site. Currently, the company has 10 full-time employees as well as 40 contracted employees on site, providing \$2 million in annual employment income.³

Boasso America Corporation

Boasso America Corporation also relocated their Charleston Terminal facility to the site in 2008. The facility is located on 10 acres immediately south of the Sonoco Recycling, LLC property. The company provides tank container services as well as local and over-the-road trucking services.

³ Slade, D. (2011, October 27). \$1M Sonoco investment to bring 15 more jobs to North Charleston. *The Post and Courier*. Sonoco. (2008, January 14). *Sonoco Recycling Opens New, Larger Facility in Charleston* [Press Release].

QualaWash Holdings, LLC

The 2008 relocation of QualaWash Holdings, LLC's Charleston facility to the site moved the company adjacent to Boasso America Corporation, one of their major local customers. The company, formerly PSC Container Services Group, provides cleaning services for commercial and industrial portable liquid and dry bulk containers at their facility, occupying 6 acres at the site. QualaWash Holdings, LLC is committed to the site's continued safety, complying with all applicable environmental laws, regulations, permits and agreements to protect the environment and training staff annually in RCRA hazardous waste regulations.⁴ Currently, nine people work on site, receiving \$461,000 in annual employment income.⁵



Figure 6: Current tank containers service operations on the Macalloy Corporation Superfund site

Shipyards Creek Associates, LLC

In 2007, Shipyards Creek Associates, LLC purchased the entire 140-acre site property. The company continues to manage the industrial park and plans to develop the site's northern 110 acres into a multi-modal transportation hub as part of the Port of Charleston's expansion plans. Given the area's prime industrial location and access to CSX rail lines and Interstate 26 as well as the deep waters of Shipyards Creek, the hub will enable seamless onloading and offloading of goods onto trucks, trains and barges.


Property Value and Tax Revenue Impacts

The site's redevelopment has provided space adjacent to Shipyards Creek, CSX rail lines and Interstate 26 for industrial use. The site's reuse has also increased the land value of the site property and the tax revenues generated from businesses located on site. In 2011, properties on site paid \$400,000 in property taxes to Charleston County. The total market value of the site property in 2011, including redevelopment improvements, was \$27.1 million. Sonoco Recycling LLC's relocation and construction of their original facility at the site increased the market value of the parcel from \$2.7 million in 2008 to \$2.9 million in 2011. Boasso America

⁴ <http://www.qualawash.com/environmental.html>.

⁵ (2008, June 1). PSC Opens Tank Wash in Charleston SC. *Bulk Transporter*.

Wilson, C. E. (2011, March 1). QualaWash becomes largest, most diverse US wash rack operator. *Bulk Transporter Editorial*.



Corporation's relocation and construction of their facility at the site increased the market value of the parcel from \$1.9 million in 2008 to \$3.1 million in 2011. QualaWash Holding LLC's relocation and construction of their facility at the site increased the market value of the parcel from \$640,000 in 2008 to \$1.3 million in 2011.

Conclusion

In Charleston, South Carolina, coordination of local and national development interests with EPA and SCDHEC and the site's PRP Group has advanced environmental protection and encouraged appropriate redevelopment. The site illustrates how stakeholder coordination can expedite the cleanup process, accelerating a site's return to productive use. The site's cleanup protects human health and the environment, while its reuse supports jobs and local businesses, enhances land values and tax revenues, and provides space for additional development in the Charleston area. Looking to the future, redevelopment at the Macalloy Corporation Superfund site promises to remain a key economic driver in the region, providing industrial space for additional growth along three major transportation routes on the Charleston Peninsula.



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Reuse and the Benefit to Community Macalloy Corporation Superfund Site

Technical Appendix

Positive Impacts: Employment Information for On-site Jobs

The Dun & Bradstreet (D&B) database provided information on the number of employees and sales volume for on-site businesses. [D&B](#) provides information on businesses and corporations. It maintains a database of over 179 million companies globally and over 53 million professional contact names using a variety of sources, including public records, trade references, telecommunication providers, newspapers and publications, and telephone interviews. The Data Universal Numbering System (DUNS) number is a unique nine-digit identification number assigned by D&B to each business and its location within the D&B database for identifying each business.

Positive Impacts: Wage and Income Information for On-site Jobs

An interview with Sonoco Recycling, LLC Charleston Plant Manager Tim Nesbitt on May 3, 2012, and a telephone interview with a representative from QualaWash Holdings, LLC on May 15, 2012, provided on-site job information.

The U.S. Bureau of Labor Statistics (BLS) provided wage and income information. The BLS is a governmental statistical agency that collects, processes, analyzes and disseminates essential statistical data to the American public, the U.S. Congress, and other federal agencies in the broad field of labor economics and statistics. The data provided by the BLS has high standards of accuracy and consistently high statistical quality, and impartiality in both subject matter and presentation.

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

To determine the annual wages (mean annual) earned from jobs generated by each of the businesses located at the Macalloy site, the average weekly wage figure was multiplied by the number of weeks in a year (52) and by the number of jobs (employees) for each of the businesses.

Table 1: Macalloy Site Businesses: NAICS Code and Title, Average Weekly Wage, Employees, Annual Wages and Total Annual Wage per Employee

On-site Business	NAICS Code	NAICS Title	Employees	Average Weekly Wage (2010) ^c	Annual Wage (Mean Annual) per Employee	Total Annual Wages ^d
Sonoco Recycling, LLC	562920	Materials Recovery Facilities	50 ^a	\$769	\$39,988	\$1,999,400
QualaWash Holdings, LLC	811310	Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	9 ^b	\$984	\$51,168	\$460,512
Boasso America Corporation	811310	Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	NA	\$984	NA	NA
Total	-	-	-	-	-	\$2,459,912

^a Employee data provided in an interview on May 3, 2012.
^b Employee data provided in an interview on May 15, 2012.
^c Average weekly wage per employee based upon BLS Average Weekly Wage data.
^d Total annual wage figures derived by multiplying "Employees" by "Annual Wage (Mean Annual) per Employee."
 NA: Not Available

Positive Impacts: Local Tax Revenues Generated from Property Taxes

Property records accessible through Charleston County PropertyMax information pages (<http://sc-charleston-county.governmax.com/svc>) provided data on the most recently assessed values and taxes for property parcels at the Macalloy site in April 2012.

Table 2. Estimated Property Values and Annual Tax Amounts (2011)

Parcel ID No.	Description	Estimated Market Value (2008) (\$)	Estimated Market Value (2011) (\$)	Taxes Paid (2011) (\$)
4660000009	Parcel H: Boasso America Corporation	1,922,000	3,054,000	39,036.17
46600000010	Parcel A	16,394,000	14,877,000	219,584.52
46600000060	Parcel J	2,948,000	2,907,000	42,907.32
46600000061	Parcel G: QualaWash Holdings, LLC	640,000	1,338,000	21,536.99
46600000062	Parcel F: Sonoco Recycling, LLC	2,682,000	2,870,000	42,361.20
46600000063	Parcel B: Undevelopable according to Charleston County PropertyMax	200	200	2.43
46600000064	Parcel C	1,475,000	1,211,000	17,874.37
46600000065	Parcel E	360,000	343,000	5,803.92
46600000066	Parcel D	550,000	523,000	7,719.48
Total	-	26,971,200	27,123,200	396,826.40