

Executive Summary

The 53-acre Northwest Pipe & Casing/Hall Process Company Superfund site in Clackamas, Oregon, was once home to pipe manufacturing and storage and pipe coating facilities. Collaboration and cooperation among several parties – EPA, the Oregon Department of Environmental Quality (DEQ), the Oregon Department of Transportation (ODOT), Clackamas County Development Agency, Oregon Iron Works and the Northwest Development Corporation – promoted the site’s successful cleanup and reuse. Warehouse, light industrial and commercial office spaces now occupy the area; a streetcar test-track and maintenance facility are also located on-site. New state roads being built on and near the site will help alleviate local congestion problems and increase safety. This case study explores the site’s cleanup and reuse and continued use, illustrating the positive impacts of Superfund redevelopment in action.

Beneficial Effects

- Six commercial, industrial and public service businesses are currently active at the site.
- Site businesses employ over 210 people, providing annual employment income of over \$11 million to the community.
- In 2015, site properties generated over \$219,000 in tax revenue and have a current estimated value of nearly \$23 million.
- New state roads being built on and near the site will help alleviate local congestion problems and increase safety.

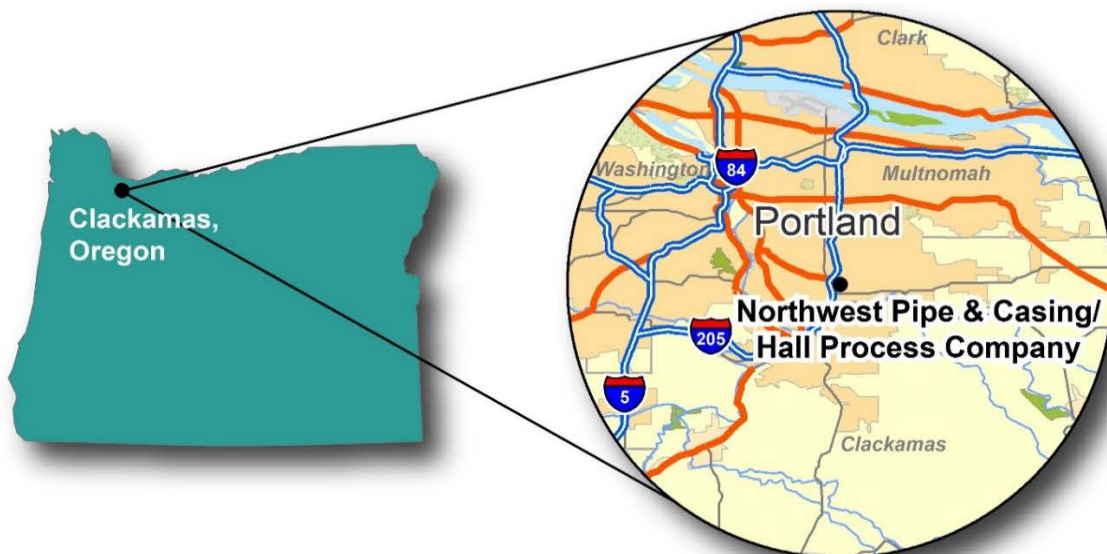


Figure 1. The site’s location in Clackamas, Clackamas County, Oregon.

Introduction

When a Superfund site is restored for reuse or supports continued use, it can revitalize a local economy with jobs, new businesses, tax revenues and local spending. This case study explores cleanup, continued use and redevelopment at the Northwest Pipe & Casing/Hall Process Company Superfund site.

The 53-acre area is located in a busy industrial area of Clackamas, Oregon, about 20 miles southeast of Portland. Site surroundings include the Union Pacific Railroad and industrial facilities to the west, Southeast Lawnfield Road and a transmission tower and radio station complex in an open field north of the site, the Oregon Iron Works main facility to the east, and Mather Road and industrial and National Guard facilities to the south. The War Veterans Memorial Freeway (Interstate 205) runs north and west of the site. State Highway 212/224 runs south of the site.



Figure 2. Commercial office and warehousing facility on site, 2015.

Site History

From 1956 to 1978, Hall Process Company conducted pipe-coating activities on the southern part of the site (Parcel B). In 1973, Northwest Pipe & Casing began operating a steel pipe manufacturing facility on the northern part (Parcel A). In 1978, Northwest Pipe & Casing started leasing Parcel B from the Hall family. The company took over the pipe-coating facility while continuing to operate its manufacturing facility. Pipe manufacturing operations included milling bulk steel coil into the desired pipe diameter in a process that used a soluble oil and water bath. Pipe-coating operations included sandblasting pipe with steel shot, spraying it with primer and covering it with coating material. In 1985, Northwest Pipe and Casing declared bankruptcy and ceased all pipe-coating operations. Parcel A was divided into two (east and west) lots and the western lot was sold to ODOT. ODOT located its operations in the remaining Northwest Pipe & Casing industrial buildings. ODOT uses the former Northwest Pipe & Casing Company facilities for offices and storage and maintenance of ODOT vehicles. The department also established a nursery and equipment yard on the western lot.

The Northwest Development Corporation bought the eastern lot of Parcel A and built the Clackamas Commerce Center, which comprises three buildings used by commercial and manufacturing businesses.

In 1986, EPA learned that Northwest Pipe & Casing had improperly disposed of waste in sewers and on other parts of the site. In 1990, an extensive investigation by EPA identified polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and chlorinated volatile organic compounds (CVOCs) in soil, sediment, surface water and groundwater. EPA listed the site on the Superfund program's National Priorities List (NPL) in 1992.



Figure 3. One of the two 10,000-gallon tanks on site prior to disposal in 2001.



Figure 4. Details of the site and surrounding area.

Site Investigation and Cleanup

In 1993, EPA completed an interim cleanup action on Parcel B. It included perimeter fencing and demolition of vacant buildings. Because the Agency did not detect any major sources of contamination on Parcel A, EPA did not require demolition of the remaining Northwest Pipe & Casing buildings or the Northwest Development Company buildings. In 2000, EPA selected the final cleanup plan to address soil contamination on Parcel B. The remedy included excavating, removing and treating 32,010 tons of contaminated soil and debris, taking away two underground storage tanks, capping Parcel B and establishing mitigation wetlands in the parcel's northeast corner, and putting a restrictive covenant in place to prevent contact with contaminated soil. These actions took place between 2001 and 2004.



Figure 5. Excavated soil ready for off-site disposal.

During development of the soil cleanup plan, ODOT notified EPA that a planned multi-lane interchange between Interstate 205 and Highway 212/224 would cross the site. ODOT planned to place the interchange above the site's current grade. EPA reviewed project plans and found they would be compatible with the site's remedy as long as ODOT activities remained compliant with the area's land use restrictions.



Figure 6. Soil excavation work during the site's final removal action in 2008.

In 2001, EPA selected the final cleanup plan for contaminated groundwater. The remedy included groundwater treatment and monitoring and restrictions on the use of groundwater on Parcel B until cleanup goals were met. Groundwater circulation and monitoring wells were fully operational as of 2005. EPA shut down the circulation wells in 2006 and 2007, after the Agency found they were not effectively reducing groundwater contamination. In 2008, EPA excavated 25,000 additional tons of contaminated soil believed to be the source of groundwater contamination and treated 551,000 gallons of contaminated groundwater. The same year, EPA also required groundwater use restrictions on the eastern portion of Parcel A. Continuous monitoring since 2008 has shown that groundwater contamination remains at the site. To address this, EPA plans to excavate another potential source area within Parcel B.

Continued Site Use and New Development

EPA and state investigation and cleanup efforts have been compatible with continued uses, as well as new development at the site. Active facilities on site include ODOT's facilities and the Clackamas Commerce Center. EPA and DEQ continue to coordinate with property owners to make sure that remaining soil and groundwater contamination do not impact businesses or workers. EPA and DEQ also coordinate with businesses and property owners to make sure the site's remedy is compatible with new development, while continuing to protect human health and the environment.

Clackamas County Development Agency purchased Parcel B from DEQ, as trustee for EPA, in October 2005. The development agency leased the property to Oregon Iron Works in August 2009. Oregon Iron Works now uses part of the area for a laydown yard, a streetcar test-track facility, a maintenance facility and a 30.8-kilowatt solar array. DEQ and EPA must review and approve development activities under the terms of an Easement and Equitable Servitude recorded with the property deed in 2005.



Figure 7. On-site redevelopment. From top: equipment laydown yard; solar array; streetcar test track.

In 2013, ODOT extended construction of its Sunrise Corridor project across a large part of the site. ODOT's Sunrise Jobs and Transportation Act Improvement Project will link Interstate 205 with Highway 212; completion is

anticipated in 2016. A new ODOT road along the western portion of the site has also enhanced the road network in the area and provides bike lanes and sidewalks. ODOT is planning to expand operations on site to support its equipment and maintenance operations.

Beneficial Effects

Today, six commercial, industrial and public service site businesses support over 210 jobs and contribute over \$11 million in annual employment income to the community. Together, new and long-time businesses at the site bolster the region's economy, provide valuable services, and help generate local and state sales and property tax revenues. The section below describes these businesses in more detail.

ODOT Offices, Equipment Facilities and Nursery

In 1985, ODOT purchased the western lot of Parcel A and used the remaining Northwest Pipe and Casing Company buildings for one of the Department's maintenance divisions, an equipment yard, and a greenhouse and plant nursery to grow plants for use along roadways around the state. The facilities have remained in operation during cleanup. The Department provides an estimated \$3.9 million in annual employee income to on-site workers.



Figure 8. Work vehicles inside the ODOT building on site.

Oregon Iron Works

Oregon Iron Works operates a steel manufacturing facility just east of the site, next to Parcel A.¹ The company specializes in custom and industrial steel fabrication. Oregon Iron Works also maintain offices at the Clackamas Commerce Center. On-site workers with Oregon Iron Works generate over \$4.6 million in estimated annual employment income. In 2011, the company installed a 30.8 kilowatt solar array on-site, which offsets approximately 30,700 kilowatt hours annually from energy generated from conventional sources.



Figure 9. Oregon Iron Works

Clackamas Commerce Center

The Clackamas Commerce Center, located on Parcel A, leases office and warehouse space to four businesses in addition to Oregon Iron Works. These are discussed briefly below.

Elite Performance Center

This gym and powerlifting team provides estimated annual employee income of \$92,000.

¹ In May 2014, Oregon Iron Works merged with Vigor Industrial. Oregon Iron Works is now a wholly owned subsidiary of Vigor Industrial.

Miatech, Inc.

Miatech manufactures perishable control equipment such as misting systems for produce cases and humidification equipment for meat and deli service cases. The company contributes over \$1 million in estimated employee income annually. Estimated 2014 sales reached \$3.5 million.

Seaport Hardwoods & Flooring

This flooring distribution center provides estimated annual employee income of over \$360,000. Estimated 2014 sales reached \$1.9 million.

Integrated Inspection Systems, Inc.

This engineering and inspection service company operates a manufacturing equipment inspection lab in the commerce park. The company provides estimated annual employee income of over \$1 million. Estimated 2014 sales reached about \$1.6 million.

Improved Transportation

The Sunrise Jobs and Transportation Act Improvements Project

ODOT's Sunrise Jobs and Transportation Act Improvement Project linking Interstate 205 with Highway 212 (see Figure 2) will provide a significant transit corridor for heavy commercial and industrial traffic traveling from Clackamas County to the Interstate 5 corridor. It will serve several freight distribution centers near the site and help ease congestion and increase safety along Interstate 205.

Most of ODOT's on-site facilities will remain intact during and after highway construction; a portion of one of the ODOT buildings was removed to make way for the corridor. To make sure road construction across the site would not affect the remedy's protectiveness, EPA required that ODOT and its contractors complete geotechnical and environmental investigation work plans and a quality assurance project plan. ODOT and its contractors decommissioned two underground storage tanks, seven remediation wells and 18 monitoring wells at the site, and installed seven new monitoring wells. They also constructed a 45-foot-long bridge over the street-car test track.

ODOT estimates that the new road improvements will attract about 20,500 daily users from area roads, providing significant



Figure 10. Miatech's facilities on site.

United Street Car Test-Track Facility

In 2007, Oregon Iron Works acquired United Streetcar, a company that manufactures streetcars for cities around the world. The company needed a place to test their streetcars; the open space on Parcel B was ideal. Working with EPA and DEQ under the terms of an Easement and Equitable Servitude recorded with the property deed, United Streetcar built its test track and maintenance building.

Development included installation of water, sanitary sewer and electrical lines, a service roadway, railroad ballast rock and track, a cantilever pole system, and a streetcar loadout area. All facilities were designed to be compatible with the soil cap. ODOT built a tunnel through the Sunrise Connector so that the streetcars can move easily from the maintenance area to the test track.



Figure 11. Aerial view of the streetcar test track. (Photo source: ODOT)

congestion relief on Highway 212, Interstates 5 and 205, and 82nd Drive. ODOT also anticipates a reduction of 975,000 hours per year in vehicle hours of delay, resulting in an annual savings of \$22.5 million in travel time costs. Reduced congestion will also benefit the environment through fewer air emissions. During construction, ODOT estimates that the project will likely create or sustain about 1,000 jobs (over 300 per year during the three years of construction).²

Minuteman Way

ODOT's new collector road also extends across the eastern edge of the site; it is one of six secondary roads built or improved upon as part of the Sunrise Jobs and Transportation Act Improvement Project. Minuteman Way runs parallel to the railroad tracks on the western boundary of the site, and connects Mather Road to Lawnfield Road. The road provides shoulder bike lanes and sidewalks for pedestrians, and connects to a larger network of pedestrian and bicycle paths in Clackamas County. ODOT forecasts that the secondary road additions and improvements will remove about 3,000 cars from 82nd Drive and over 9,000 cars from Clackamas Highway each day.

Property Value and Tax Revenue Impacts

In 2015, the site's property parcels generated over \$219,000 in property tax revenue for Clackamas County. The total county-estimated value of the properties in 2015, including redevelopment improvements, was nearly \$23 million.

Conclusion

Cooperation among EPA, DEQ, ODOT, Clackamas County Development Agency, Oregon Iron Works and Northwest Development Company has promoted successful cleanup and reuse of the Northwest Pipe & Casing/Hall Process Company Superfund site. The site continues to host commercial and industrial businesses that support jobs and generate tax revenues. Today, on-site businesses support the local economy, providing over 210 jobs and over \$11 million in estimated annual employee income. The former home of two industrial facilities now hosts a commerce park, a streetcar testing facility, and office space and storage for ODOT. In addition, the area's road system improvements are addressing safety and congestion concerns, and will provide better access to the Interstate 5 corridor for commercial and industrial traffic. Looking to the future, this collaborative effort by EPA, DEQ, ODOT, local organizations, property owners and other site stakeholders will continue to provide long-term economic, environmental and transportation benefits for Clackamas County and surrounding communities.



Figure 12. Completed Minuteman Way and ongoing construction of the Sunrise Corridor. (Source: ODOT)



Figure 13. A bicyclist rides down Minuteman Way.

*For more information about EPA's Superfund Redevelopment Initiative (SRI), visit:
<http://www.epa.gov/superfund-redevelopment-initiative>.*

² Job estimate provided by ODOT: <http://www.oregon.gov/ODOT/HWY/REGION1/sunrise/SunriseFAQSummer2013.pdf>.



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Reuse and the Benefit to Community Northwest Pipe & Casing/Hall Process Company

Technical Appendix

Employment Information for On-site Jobs

Information on the number of employees and sales volume for on-site businesses came from the Hoovers/Dun & Bradstreet ([D&B](#)) database. EPA also gathered information on businesses and corporations from D&B. D&B maintains a database of over 225 million active and inactive businesses worldwide. Database data include public records, financials, private company insights, extensive global information, telephone numbers and physical addresses. 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 database for identifying each business. The database includes data reported by businesses. Accordingly, some reported values might be underestimates or overestimates. In some instances, business and employment information came from business representatives. 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. Data included in this Technical Appendix are obtained directly from reputable sources, and reported as presented by those sources.

Wage and Income Information for On-site Jobs

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. Its mission is to collect, analyze and disseminate essential economic information to support public and private decision-making. All BLS data meets 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 businesses at the Northwest Pipe & Casing/Hall Process Company Superfund site. Average weekly wage data were 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 Clackamas County. 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 determine the annual wages (mean annual) earned from jobs generated by each of the selected businesses at the Northwest Pipe & Casing/Hall Process Company Superfund site, 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.

Table 1. Northwest Pipe & Casing/Hall Process Company Superfund Site: Information for On-Site Organizations and Businesses

On-site Business	NAICS Code ^a	NAICS Title	Number of Employees ^b	Average Weekly Wage (2014) ^c	Annual Wage (Mean Annual) per Employee	Total Annual Income ^d	Annual Sales (2014) ^b
Miatech, Inc.	333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	19	\$1,086 ^e	\$56,472	\$1,072,968	\$3,500,000
Elite Performance Center, LLC	561990	All Other Support Services	2	\$888	\$46,176	\$92,352	\$98,000
Integrated Inspection Systems, Inc.	541330	Engineering Services	13	\$1,636	\$85,072	\$1,105,936	\$1,600,000
Jatoba Incorporated (Seaport Hardwoods & Flooring)	423220	Home Furnishing Merchant Wholesalers	10	\$700	\$36,400	\$364,000	\$1,900,000
Oregon Department of Transportation	926120	Regulation and Administration of Transportation Programs	100	\$768	\$39,936	\$3,993,600	NA
Oregon Iron Works	332312	Fabricated Structural Metal Manufacturing	70 ^f	\$1,268 ^e	\$65,936	\$4,615,520	NA
Total			214			\$11,244,376	\$7,098,000^g

^a NAICS code provided in the D&B database.

^b Data are from the D&B database, unless otherwise noted.

^c Average weekly wage per employee based on BLS 2014 Average Weekly Wage data.

^d Total annual wage figures derived by multiplying “Number of Employees” by “Annual Wage (Mean Annual) per Employee.”

^e 2013 BLS figure used because 2014 BLS figure was unavailable.

^f Oregon Iron Works operates a large steel manufacturing facility just east of the site. About 70 people work in offices located on site in the Clackamas Commerce Center. Employee estimate provided by Oregon Iron Works.

^g While sales values typically exceed estimated totals of annual employee income, annual reported sales can sometimes be lower than estimated annual income. This atypical condition of estimated income exceeding sales can be a result of business conditions, estimated business wages not accurately reflecting actual wages for the site-specific business, annual sales being under-reported, a business loss for the year, or a combination of those factors.

NA – Not available or not applicable

Property Values and Local Tax Revenue Generated from Property Taxes Payable in 2015

EPA obtained data on the most recently assessed values for property parcels at the Northwest Pipe & Casing/Hall Process Company Superfund site in November 2015 through property records accessible through Clackamas County's online property appraisal database (<https://cmap.clackamas.us>). EPA also obtained 2015 property tax information for the site parcels through tax records accessible through Clackamas County's online tax statements database (<http://web3.clackamas.us/taxstatements>).

Table 2. Property Value and Tax Summary for Taxes Payable

Parcel ID No.	Parcel Address	Total Market Value of Land and Improvements (2015)	Total Property Tax (2015)
01668270	NA	\$179,377	NA
01345789	NA	\$30,137	\$471
00431820	14434 SE Industrial Way	\$14,475,933	\$178,617
00431839	9200 SE Lawnfield Rd	\$5,418,715	NA
00471064	9585 SE Mather Rd	\$841,916	\$13,130
00471073	9651 SE Mather Rd	\$100,516	\$1,031
00471046	9200 SE Mather Rd	\$1,921,552	\$26,164
		\$22,968,146	\$219,413

Notes:

Total market values and total property taxes are for the 2015-2016 tax year (July 1, 2015-June 30, 2016).

Property tax amounts do not reflect potential discounts available through Clackamas County.

NA – Not available or not applicable