

# US Army WSMC Pier 23



SHARP Report — Part 1 of 2

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• SHARP first SHARP		v2024.04.29	Ecology Info	
• SHARP rating	Medium		ERTS	none
• SHARP date	10/29/2025		CSID	1750
• EJFlagged?	✓ – No Override		FSID	54221181
• LD confidence level	low		VCP	SW0362
• Cleanup milestone	cleanup implementation		UST ID	none
• SHARPster	John Kirkpatrick		LUST ID	none

**This section is blank if this is the first SHARP**

SHARP Media	Scores	Confidence	Additional Factors
Indoor air	B1	low	multiple chemical types ✓
Groundwater	C2	medium	risk to off-site people ☒
Surface water	<b>A1</b>	low	climate change impacts ✓
Sediment	B1	medium	plant/animal tissue data ☒
Soil	C1	low	

Location and land use info	
401 E Alexander Ave, Tacoma, Pierce County, 98421	
Primary parcel	2275200012
Land use	mixed use
Responsible unit	SWRO

Sources reviewed
2011, Pier 23 Removal Action Completion Report, General Construction Company
2009, Uplands Investigation Report, Kemron Environmental Services
2008, Final Feasibility Study, Kemron Environmental Services
2007, Site Hazard Assessment, Department of Ecology



Primary census tract	Associated census tracts
53053060200	

**Local demographics comments**

A zero was applied to all EJscreen parameters because the EJscreen website was not available at the time of rating.

**Source/source area description**

The site includes areas two areas. One portion is below the ordinary high water mark, and includes Pier 23. Another portion, above the ordinary high water mark, includes parking and several structures. Both are utilized by the US Army Reserve. The site has a long history of use for logistics, ship building, engine repair, and general military activities. Both the upland and in water sections of the site have been contaminated with petroleum products, metals, antifouling material, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs).

**Soil comments**

Soil remediation was not the focus on cleanup activities at the site when pier repair was conducted in the 2000s. However, contaminated soils were documented. Contaminants of Concern (COCs) in site soils in 2010 were asbestos, arsenic, Total Petroleum Hydrocarbons (TPH) - Diesel, and chromium. An Upland Investigation from 2009 reported contamination with Polycyclic Aromatic Hydrocarbons (PAHs); Polychlorinated Biphenyls (PCBs), specifically Aroclor 1254; and the metals arsenic, chromium, and lead. Cadmium and silver were also detected.

**Groundwater comments**

COCs identified in site groundwater above preliminary remediation goals in 2008 included trichloroethylene (TCE), vinyl chloride (VC), naphthalene, and the PAHs. Other breakdown products of chlorinated solvents were present. Arsenic, copper, and selenium were also found at concentrations above National Recommended Water Quality Criteria. Arsenic and selenium were also above MTCA cleanup levels. A chlorinated solvent plume associated with Occidental Chemical Corp., Contaminated Site ID 4326, has been documented in deeper groundwater in the area.



**Surface water comments**

Sampling at the site focused primarily on sediments, which were known to be contaminated with metals, PAHs, PCBs, and tributyltin (TBT). Some exceedances were found for sediment confirmation samples, but the final analysis showed that average concentrations were below sediment quality objectives (SQOs).

**Sediment comments**

Confirmation sampling in 2010 indicated that average sediment concentrations in the remediated area were below SQOs. Remediation on focused on an area within 200' of the shore, which was well documented to have been contaminated, and stopped at the property line. Previous investigations had also found exceedances for metals in areas further offshore that were not remediated. Reportedly these more distant sediments passed bioassay testing.

**Indoor air comments**

Concentrations of VC in site groundwater exceeded vapor intrusion screening levels based on Ecology's Cleanup Levels and Risk Calculation tables (as of 10/30/2025). VC concentrations in 2008 were 4.45 ug / L, compared to groundwater screening levels of 0.33 ug / L (Method B Cancer). Additionally, TCE was detected in site groundwater, slightly below screening levels. TPH-D is also a potential COC. Considering the age of the data as well as the limited distribution of groundwater sampling at the site, confidence in a current assessment of vapor intrusion risk at the site is low.

**Additional factors comments**

The site is susceptible to additional risk related to sea-level rise.

## Site history

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The general area of the mudflats was historically built up to its current extent by the placement of a variety of fill materials. The Pier 23 area was used as a shipyard in the World War II era, and the Navy reportedly used the area for mooring surplus vessels as well as for a logistics center. The Port of Tacoma acquired the property from the Navy in 1961. The Port has hosted a variety of tenants at the site, including businesses engaged in boat decommissioning, diesel engine repair, boatbuilding, and bulk storage. The Washington Army National Guard occupied the pier facility from 1964 to 1995. In 1991 the State of Washington bought the facilities (not the land) at the site. These facilities were transferred to the United States in 1995. The US Army Reserve (USAR) has operated at the site since 1995. The uplands, submerged areas under and adjacent to the pier, and the water rights are owned by the Port of Tacoma.

The sediment portion of the site is geographically located within the Commencement Bay / Nearshore Tideflats (CB/NT) Superfund site. The Environmental Protection Agency (EPA) added CB/NT to National Priorities List in 1983. Washington Dept. of Ecology completed a Remedial Investigation / Feasibility Study (RI / FS) in 1988. In 1991, SCS Engineers reportedly finished a Preliminary Assessment / Site Investigation. The upland portions of the site were found to be contaminated with petroleum products and heavy metals above MTCA Method A cleanup levels. Sediments were found to be contaminated with mercury, PCBs, and PAHs. Contaminated soil and sediment was confirmed in 1995, when a report was compiled as part of the property transfer.

In 1997, interested parties communicated regarding the path forward, including EPA, USAR, and Ecology. It was decided that the Army would work with Ecology under a Defense and State Memorandum of Agreement to cleanup the site. Subsequently, the site was not part of the Superfund cleanup, and the Army was not included as a Potentially Responsible Party (PRP) for the CB/NT cleanup. Among other things this meant that the site was not a part of the various sediment cleanup activities that would be conducted under EPA supervision in the years to come. This also meant that cleanup was subject to state cleanup levels, as opposed to Federal criteria.

Pacific Northwest National Labs (PNNL) completed an updated RI/FS in 1998. By this time, USAR was planning to construct a new building at the site, and remediation in conjunction with construction was planned. The RI/FS identified sediment as the primary concern at the site as it was the main pathway for human and environmental exposure to site contamination. PNNL staff oversaw sediment sampling and prepared a Technical Memorandum for USAR in 1999. Among other conclusions, this report noted that subtidal contamination met sediment standards but that lower intertidal and nearshore sediment results were patchy and inconsistent. Later discussions between USAR and Ecology included discussion of the fact that, while the Port of Tacoma owned the property, USAR agreed to "proceed with our original plans for addressing contamination at the site".

PNNL completed an updated FS in late 1999, which Ecology provided feedback on. Ecology expressed concern over the presence of slag material at the site, for which a sediment cap may not prove to be sufficiently protective.

### Overflow - Site contamination and cleanup history

As plans proceeded for site projects, USAR decided to time the sediment cleanup with plans underway to replace a wooden section of the pier. In 2001, the pier upgrade was postponed, resulting in delay of the sediment remediation project as well. The upland building project began in 2002, and ran to 2004. Various upgrades were made to the storm water and outfall system. Contaminated soil was also discovered, along with buried creosote timbers, asbestos, and old pipelines with bunker C. About 1,000 cubic yards of these materials were removed. A new sheet pile wall was installed in 2003 at the shore, where the slag pile had previously been noted.

Kane Environmental was contracted to assess suspected soil contamination in the upland soils where construction was underway. Soil sampling and analysis documented contamination, primarily diesel, which could be a threat to human health.

The US Army Environmental Command (USAEC) and their contractor, Kemron, took over the cleanup project in June 2003. Additionally, the Army Corps of Engineers (USACE) had determined that the existing FS had insufficient data and contracted Hart Crowser to conduct additional sampling. This was intended to specifically address the lack of deeper sediment data at the site. Their sampling indicated that the extent of PCB contamination was greater than had been thought. Kemron compiled an analysis of all of the sediment data available at that time, and identified additional major data gaps. By March 2005, Kemron had completed a Slag Characterization and Geotechnical Evaluation report. Kemron also completed a second report, documenting under-pier sediment contamination. Subsequently, USAEC tasked Kemron with a new FS to address changes in the pier project from replacement to repair, the need to remove slag material and the potentially unstable sheet pile wall installed into it, and the additional information documented by Hart Crowser regarding deep contamination.

In 2008, Kemron also conducted an updated investigation of upland contamination to help inform the Final FS. This update include installation of additional monitoring wells, along with soil and groundwater sampling. The Final FS was completed in December 2008.

In June 2010, construction began with demolition of the old wooden portion of the pier. Dredging began in August. Dredged sediment was dewatered and then transferred to shore for off-site disposal. The sheet wall which was embedded in the slag was removed, and the slag materials removed per plans. In total, over 15,000 cubic yards were dredged and removed, and backfilled with clean material. Several upland excavations were also conducted to install new electrical equipment for the new pier. Soil contaminated with petroleum products, asbestos, chromium, and arsenic was encountered. Excavated materials were removed for disposal, but the extent of contamination was not investigated.

Confirmation samples of the dredged area, which extended about 200' from the shore, had individual exceedances for PCBs, mercury, copper, and PAHs. However, per the objectives agreed upon in advance by the interested parties, the average concentrations for 7 locations were calculated and compared to SQOs. Sediment in the dredged areas met this criteria, and cleanup was concluded in early 2011.



### Assessment scores by environmental medium

