

Final Performance Report – September 1, 2017 through October 31, 2018

EPA Brownfield Cleanup Grant for Hazardous Substances
Site A – Havermale Island, City of Spokane, Washington

**Final Performance Report
September 1, 2017 through October 31, 2018**

**EPA Brownfield Cleanup Grant
for Hazardous Substances
Site A – Havermale Island, City of Spokane, Washington**

Cooperative Agreement No. BF-01J39501-1

Submitted by:
City of Spokane
Planning and Development Services
808 W. Spokane Falls Blvd.
Spokane, WA 99201

March 28, 2019

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I. GENERAL INFORMATION

Name of Grantee: City of Spokane, Washington
Grant Type & Award Year: EPA Brownfield Community-Wide Assessment, Fiscal Year 2017
Funding Type: Hazardous Substances
Award Amount: \$200,000 (Hazardous Substances)
Cooperative Agreement No.: BF-01J39501-1
Date of Award: August 15, 2017
Project Period: August 1, 2017 through October 31, 2018

Project Contacts:

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II. INTRODUCTION

This Final Performance Report provides a summary of activities completed by the City of Spokane, Washington ("the City") during implementation of a \$200,000 United States Environmental Protection Agency (EPA) Brownfields Cleanup Grant for hazardous substances awarded to the City during Fiscal Year (FY). The grant was awarded for remediation within a distinct revitalization target

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area (Site A – Havermale Island) located within the 100-acre Riverfront Park at 610 West Spokane Falls Boulevard in the heart of Spokane, Washington. The Cooperative Agreement (CA) number for the grant is BF-01J39501-1.

The CA Work Plan (dated July 19, 2017) outlined four project tasks (as shown on the table below) to be completed using grant funding. This report describes the status of each task as of October 31, 2018 (the end of the implementation period).

Task No.	Task Name
1	Project Management & Reporting
2	Community Outreach
3	Cleanup Planning
4	Cleanup Performance & Completion/Grant Closeout

III. MODIFICATIONS TO THE CA WORK PLAN OR BUDGET

The table below summarizes CA Amendments during the project:

CA Amend. Number(s)	CA Amend. Date	Summary of Changes
BF-01J39501-1	1/2/18	<ul style="list-style-type: none">• Corrected the name of the City's Project Manager (Teri Stripes).• Grant implementation period was revised from two to three years (project end date changed from 8/31/19 to 8/31/20).

The following modifications to the CA Work Plan were approved by EPA on November 30, 2017:

- A Quality Assurance Project Plan (QAPP) was prepared for the Cleanup Grant instead of using the Soil Management Plan approved by the Washington Department of Ecology (Ecology) for Voluntary Cleanup Program (VCP) activities being conducted throughout Riverfront Park.
- The City was required to update and finalize the Draft Analysis of Brownfields Cleanup Alternatives (ABCAs) submitted as part of the Cleanup Grant application.
- The City was not required to duplicate or repeat a Cultural Resources Survey and agency outreach/comment process already completed for the Riverfront Park Revitalization project.
- The City was not required to complete or identify a completed Terrestrial Ecological Evaluation or equivalent document if one was not previously prepared for the Riverfront Park Revitalization project.

IV. SUMMARY OF SCOPE OF WORK, ACTIVITIES & ACCOMPLISHMENTS

This section summarizes the following for each of the project tasks: (a) scope of work; (b)

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activities completed as of October 31, 2018 (the end of the implementation period); and (c) accomplishments (milestones and deliverables) completed to date.

Task 1: Project Management & Reporting

1.A. Scope of Work

The scope of work for this task as detailed in the Work Plan was as follows: *“Quarterly Progress Reports (QPRs) were due within 30 days of the end of each federal fiscal quarter ending December, March, June, and September (due by January 30, April 30, July 30, and October 30); Disadvantaged Business Enterprise (DBE)/Minority Business Enterprise (MBE)/Woman-Owned Business Enterprise (WBE) Reports were due by October 30 of each year if certain conditions are met – refer to Terms & Conditions for details. Ensure that on-line reporting system, the Assessment, Cleanup and Redevelopment Exchange System (ACRES) reflects current work and findings.”*

Outputs: QPRs, Annual DBE/MBE/WBE Reports, Annual Financial Reports, ACRES updates

1.B. Activities Completed

- Reporting and Project Management
 - The City submitted four QPRs to the EPA and one annual DBE/MBE/WBE report.
 - Regular communications and meetings were performed with the EPA, Stantec Consulting Services Inc. (Stantec), GeoEngineers and the Parks & Recreations Department.
 - The City's Grant Management, Accounting, Planning and Development, and Parks Departments worked together on invoice approvals, account tracking and reimbursement process for the grant.
 - The City prepared a project closeout report and financial submittals to the EPA.
- Conferences
 - Ms. Teri Stripes attended the Northwest Remediation Conference in Tacoma, Washington on September 20, 2018 and was one of three speakers who presented on a panel titled “Cooperative Cleanup: Fostering Public / Private Partnerships.” On September 27, 2018, a blog post discussing the presentation was published on the Center for Creative Land Recycling webpage titled “[NEBC - Clear as Tacoma Glass](#)”.

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1.C. Accomplishments to Date

The following table summarizes all Task 1 milestones and deliverables completed to date.

Date	Milestones & Deliverables
Aug-Sept. 2014	The City issued RFQ#4040-14 for EPA Brownfield Grant writing and implementation assistance. A consulting team led by Stantec was selected via a competitive qualifications-based procurement process in compliance with 2 Code of Federal Regulations (CFR) Part 200.317–200.326.
11/06/14	Date of Consultant Agreement with Stantec for “Grant Writing & Technical Assistance for U.S. EPA Brownfield Grants” (contract #OPR-2014-0760).
11/10/14	City Council approves Consultant Agreement with Stantec.
12/18/14	Consultant Agreement is formally executed with Stantec.
5/31/17	EPA issues Notice of Intent to Award a \$200,000 Cleanup Grant to the City.
7/19/17	CA Work Plan for the Cleanup Grant was submitted to EPA.
9/1/17	Official project start date listed on the CA.
9/15/17	CA date of award for Area A – Havermale Island (CA #BF-01J39501-0). (Official project start date listed as 9/1/17.)
9/27/17	City receives final CA documents from EPA.
9/29/17	Stantec submits “Proposal, Cost Estimate and Work Plan for USEPA Brownfields Cleanup Grant Implementation – Riverfront Park” to supplement the Consultant Agreement amendment.
10/6/17	City hosts project kick-off meeting with Stantec, GeoEngineers, and other stakeholders.
10/9/17	Date of Consultant Agreement Amendment with Stantec for Cleanup Grant implementation assistance.
10/16/17	City Council approves Consultant Agreement Amendment with Stantec for Cleanup Grant implementation assistance.
10/18/17	The City emails the EPA with questions/clarifications regarding the CAs and CA Work Plan.
11/30/17	EPA hosts a call with the City and Stantec to discuss early action items.
12/4-7/17	The City's Project Manager (Teri Stripes) attends EPA National Brownfields Conference in Pittsburgh.
12/6/17	Consultant Agreement Amendment with Stantec is formally executed.
12/17/17	The City emails the EPA to request the following changes to the CA: 1) Correcting the name of the City's Project Manager to Teri Stripes and 2) Changing the grant implementation periods from 2 to 3 years (through 08/31/2020).
12/22/17	Ms. Teri Stripes met with the Park Communications team to outline needs for website presence and information portal, setup a public communication

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Date	Milestones & Deliverables
	email dedicated for public use and communication: RFPCleanupEPA@spokanecity.org . During this meeting, a monthly standing report to the Park Board's Riverfront Park public meeting was established.
1/2/18	EPA issues CA Amendment #1.
1/26/18	QPR #1 submitted to EPA.
4/25/18	QPR #2 submitted to EPA.
4/29 – 5/2/18	Ms. Teri Stripes attended the Oregon Brownfield Conference.
5/15/18	City's Project Manager hosted a conference call with Deborah Burgess (EPA), Sandy Treccani (Ecology), Tina Hochwender (Washington State Department of Commerce), and Brandon Perkins (EPA) to discuss the status of the Spokane Brownfields sites, possible funding needs as well as coordination between the VVCP, redevelopment/remediation and the Cleanup Grant.
7/24/18	QPR #3 submitted to EPA.
10/30/18	QPR #4 submitted to EPA.

Task 2: Community Outreach

2.A. Scope of Work

The scope of work for this task as detailed in the Work Plan was as follows: *"The City utilized in-house staff to prepare and implement a Community Relations Plan as in-kind services. Several of the community-based organizations serving as project partners will assist in this effort. Area residents will have the opportunity to voice their concerns and will learn about the health risks of the Site and the cleanup methods to be employed as well as be kept informed as to the progress and status of the remediation activities. Although the City attended state and national conferences over the grant implementation period travel costs have already been budgeted in other grants being implemented by the City (FY15 Community Wide Assessment [CWA] Grant)."*

Outputs: Public Involvement Plan (PIP), publicly accessible electronic repository, and public meeting and stakeholder meeting schedule.

2.B. Activities Completed

- Public Involvement
 - Ms. Teri Stripes attended the Northwest Remediation conference in Tacoma, Washington on September 20, 2018 and was one of three speakers who presented on a panel titled "Cooperative Cleanup: Fostering Public / Private Partnerships." On September 27, 2018, a blog post discussing the presentation was published on the Center for Creative Land Recycling webpage titled "[NEBC - Clear as Tacoma Glass](#)".
 - A Spokane Riverfront Walking Tour was conducted on September 28, 2018.

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- o Additional activities as detailed on the table in Section 2.C below.

2.C. Accomplishments

The following table summarizes all Task 2 milestones and deliverables completed to date.

Date	Milestones & Deliverables
12/8/16	A press release soliciting public comment on the Draft ABCAs and announcing a Public Open House for Spokane's Brownfield Cleanup Grant Applications was published in <i>The Spokesman-Review</i> .
12/12/16	City hosted a public open house in support of the Cleanup Grant application process.
12/21/16	Public comment period for Draft ABCAs closes.
5/31/17	" Municipality of Spokane Selected for \$600,000 in Brownfields Cleanup Grants " press release published by EPA.
5/31/17	" Riverfront Park receives \$600,000 in federal funding as 'brownfield' site " article published in <i>The Spokesman-Review</i> .
5/31/17	" Riverfront Park Selected for \$600,000 in Brownfields Cleanup Grants " news release posted on City's website.
6/9/17	" The EPA Awards Spokane Three Brownfields Grants " article was published on the City's blog.
7/28/17	The City submitted the Riverfront Park Redevelopment Community Input and Outreach Plan to the EPA requesting feedback on plans to integrate implementation of the Cleanup Grant into the previously established PIP for the Riverfront Park Revitalization project.
11/30/17	The EPA approved the PIP for Riverfront Park with the addition that the City compile sign-in sheets and produce comment/feedback sheets that are made available to the public.
Dec. 2017	The City was granted approval to provide updates regarding implementation of the Cleanup Grant during regular monthly public meetings held by the Riverfront Park Committee (effective January 2018).
1/8/18 2/5/18 3/5/18	Ms. Teri Stripes provided a status update to the Riverfront Park Committee on the implementation for each of the three project areas.
4/9/18 5/7/18 6/11/18	Ms. Teri Stripes provided a status update to the Riverfront Park Committee on the implementation for each of the three project areas.
6/18/18	Garrett Jones (Parks and Recreation) provided the City Council at its public legislative session a complete update on the Riverfront Park Redevelopment, which included an update on cleanup activities at the Park.
Ongoing	The City developed content for the project webpage and other outreach materials. That page is https://my.spokanecity.org/riverfrontpark/redevelopment/a-cleaner-park/

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Date	Milestones & Deliverables
	and was updated at approximately monthly intervals with briefings. The webpage included links to the PIP, the QAPP and the ABCA.

Task 3: Cleanup Planning

3.A. Scope of Work

The scope of work for Task 3 included: (a) finalizing the Draft ABCAs (b) site preparation tasks such as contractor mobilization/demobilization and implementation of soil erosion and sediment control measures and construction entrance preparation, (c) preparation of a Health & Safety Plan (HASP), and (d) preparation of a QAPP. Plans were developed in accordance with EPA and Ecology requirements. Prevailing wages under the Davis-Bacon Act rules were utilized where applicable.

Outputs: QAPP, HASP, Revised ABCA

3.B. Activities Completed

- QAPP
 - The QAPP was completed and approved by the EPA on 6/25/18.
- ABCA
 - The final ABCA was completed and approved by the EPA on 5/15/18.

3.C. Accomplishments

The following table summarizes all Task 3 milestones and deliverables completed to date.

Date	Milestones & Deliverables
12/22/16	Draft ABCA was submitted to EPA as part of the Cleanup Grant application.
11/30/17	EPA confirmed the City does not need to repeat the Cultural Resources Survey or agency outreach/comment process that was previously completed for the Riverfront Park Revitalization project
11/30/17	EPA indicated the potential need to complete or identify a completed Terrestrial Ecology Evaluation or equivalent for the project if not previously prepared.
12/14/17	EPA provides additional information related to preparation of a QAPP specific to the Cleanup Grant.
3/30/18	Draft QAPP submitted to EPA.
4/24/18	Final ABCA submitted to the EPA.
5/15/18	Final ABCA approved by EPA.
6/25/18	QAPP approved by EPA.

Task 4: Cleanup Performance & Completion/Grant Closeout

4.A. Scope of Work

Task 4.1 – Engineering Oversight & Reporting: Engineering oversight and preparation of environmental report including the outputs listed below, upon completion of the remedial action in compliance with Ecology requirements. These activities were conducted by a qualified environmental consultant, competitively retained in accordance with 2 CFR 200.317-326 and any other applicable procurement regulations.

Outputs: Remedial Documentation Report

Task 4.2 – Site Remedial Contractor: (1) Additional sampling conducted in accordance with Ecology requirements. (2) Site preparation tasks including: (a) contractor mobilization/demobilization, (b) implementation of soil erosion and sediment control measures, (c) construction entrance preparation, and (d) securing of active work areas with caution tape and lath, poly fencing, and/or signage as required. (3) Hauling and off-site disposal of impacted and/or contaminated soil in accordance with the Ecology approved Soil Management Plan.

The labor rates reflected premiums for Hazardous Waste Operations and Emergency Response (HAZWOPER) certified contractors. Prevailing wages under the Davis-Bacon Act rules were utilized. The site remediation occurred concurrently with the redevelopment construction.

Outputs: Soil Cleanup Specification/Bid Package

4.B. Activities Completed

Task 4.1 – Engineering Oversight & Reporting

Revitalization of Riverfront Park on Havermale Island included construction of a Central Promenade along the larger north/south Howard Street Promenade and revitalization of the US Pavilion Event Center (the "Pavilion"). Construction of the promenade included removing approximately 4,000 cubic yards (CY) of soil to level the site grade and installation of new communication, gas, electric and water utilities. As part of the upgrades, an existing 12-inch-diameter water main will be upgraded to an 18-inch diameter water main. The promenade will be finished with a combination of open grass areas and impervious hardscape.

Construction of the Pavilion included removal of existing buildings in the interior of the Pavilion and construction of a large terraced embankment approximately 35 feet high along the eastern interior. An elevated pathway was constructed over the terraced embankment. The western area of the pavilion floor will be finished with a combination of asphalt and concrete. Construction of the terraced embankment required about 25,000 CY of material.

The Ice Ribbon and Loeff Carousel revitalization projects required a net export of about 8,000 CY of contaminated and impacted soil. This soil was temporarily stockpiled on the north bank of Riverfront Park and was available for reuse to support the Pavilion improvements, in accordance with the soil management plan. Although not submitted for reimbursement as part of this grant, the following activities were completed by GeoEngineers in support of the

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Howard Street Promenade improvements:

- On July 30, 2018 a test pit was excavated along the Howard Street Promenade where an underground storage tank (UST) was suspected to be present. The excavation depth ranged from 5 to 7.5 feet deep, which was the expected depth of utilities at that location. A UST was not observed in the excavation. One soil sample (HSP-TP1:073018) was collected from the excavation at about 3 to 4 feet below ground surface (bgs). A data table summarizing the analytical results and a figure showing the soil sample locations is included as Attachment A.
- On August 16, 2018 suspected petroleum impacts were encountered during rock excavation for a utility vault along the Howard Street Promenade utility corridor on Havermale Island. Rock and soil suspected to be contaminated with petroleum were removed from the excavation using a Komatsu 400 LC excavator. The excavation was backfilled with a 1-foot layer of bedding sand, a 6-millimeter layer of visqueen sheeting, and then 1 to 2 feet of bedding sand before the utility vault was placed into the excavation. A sample of soil excavated from the utility vault (HSP-TP2-081618) was collected and analyzed. The soil was temporarily stockpiled at the site.
- On August 16, 2018 GeoEngineers collected a three-point composite sample (HSP-SP1-081618) from a stockpile of soil excavated from the Howard Street Promenade on Havermale island. The composite sample was collected to evaluate if the soil was suitable for backfill in the utility trench.
- On August 20, 2018 Garco excavated petroleum impacted soil using a Takeuchi TB240 mini-excavator at the location of the former airplane amusement ride. Soil was excavated until field screening indicated there were no impacted soils remaining in the excavation. The total excavation was approximately 9 feet by 13 feet and had a depth of 6 feet, with side slope of approximately 1:1. Six soil samples were collected from the excavation. Sample USPAR-1(4.5-5) was collected to characterize soil removed from the excavation. Samples USPAR-2 (5.5-6) through USPAR-6 (5-5.5) were collected from the bottom and side walls of the excavation to characterize soil left in place.
- On August 28, 2018 GeoEngineers collected five soil samples to characterize soil left in place along the Howard Street Promenade on the north end of Havermale Island. The samples were collected from the location of the former Imax building (HSP-10C through HSP12C), the Blue Bridge abutment (HSP-13C) and along the utility corridor (HSP-14C).
- On September 19, 2018 GeoEngineers collected one sample along the Howard Street Promenade Utility corridor to characterize soil left in place during improvements (HSP-15C).

Task 4.2 – Site Remedial Contractor

In June 2018, Garco started processing the contaminated soil stockpile on the North Bank of Riverfront Park. The soil was processed to reduce the particle size of the soil to less than 4-

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inches in diameter so it could be used as fill for the embankment in the Pavilion on Havermale Island. The soil stockpile included soil from the Ice Ribbon and Loeff Carousal projects in addition to soil removed along the utility corridor of the Howard Street Promenade from the North Bank, snxw menea Island (formerly named Canada Island), and Havermale island. Soil imported from offsite was used to backfill the utility trench along the promenade.

AM Landshapers (AM) hauled ~20,000 CY of material from the North Bank Stockpile to Havermale Island between August 22 through September 10, 2018. Inland Asphalt trucked the materials using between 6 – 8 Super Trucks which hold up to 24 tons of material. AM used a large excavator to load the trucks and a dozer, roller and skid-steer loader to place the material. They then remobilized between September 27 and October 12, 2018 and used the material to build the GeoWall at the Pavilion with geofabric and the contaminated materials that had already been hauled to the area. The same equipment in addition to several hand compactors were used closer to the wall. Strata and GeoEngineers oversaw the compaction methodology and verified that compact requirements were met. The contaminated soils were encapsulated per the approved Soil Management Plan. Additional activities included treating the work area for dust suppression per Washington Department of Ecology standards

On September 26, 2018 Garco transported the petroleum impacted soil from the utility vault excavation and airplane ride excavation to Waste Management's Graham Road Facility (Graham Road). Approximately 17.23 tons of petroleum impacted soil was transported from Riverfront Park and disposed at Graham Road. .

4.D. Accomplishments to Date

Construction at the Pavilion is anticipated to be completed by August or September 2019. When the construction dust settles, the Pavilion will once again become the premier gathering place for patrons of Riverfront Park. Improvements to the Pavilion include 80,000 square feet of outdoor space, restrooms, leasable conference room spaces, a catering kitchen and new elevations that provide visitors with views of the Spokane River and surrounding park from at least 35 feet above the ground. The new Pavilion will be fitted with paneling that will enable Park staff to change the color of the Pavilion, even with seasonal themes including 1,600 square feet of permanent shades structures to provide relief from the sun and during summer concerts. Access to the Pavilion from two ramps will also now comply with the Americans with Disabilities Act, enabling even greater access to the Pavilion.

The following table summarizes all Task 4 milestones and deliverables completed to date.

Date	Milestones & Deliverables
June 2018	Process soil stockpile to remove materials greater than 4-inch diameter
7/30/18	Excavate test pit at suspected UST location (none found)
8/16/18	Conduct sampling in petroleum hotspot area
8/16/18	Sample soil stockpile
8/20/18	Excavate and sample petroleum hotspot area
8/22/18	Start hauling 20,000 CY of stockpiled soil to site

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Date	Milestones & Deliverables
8/28/18	Collect confirmation soil samples
9/10/18	Finish hauling 20,000 CY of stockpiled soil to site
9/19/18	Collect confirmation soil samples
9/26/18	Transport petroleum contaminated soil to landfill
9/27/18	Start construction of geowall
10/12/18	Finish construction of geowall

V. SUMMARY OF CHALLENGES ENCOUNTERED

The City identified an issue with the construction/remediation contract. The contract was not in compliance with federal procurement standards. To resolve the issue, the City federalized the existing State Prevailing Wage Construction Contract. The contract amendments were finalized during the 4th Quarter of FY2018.

VI. SUMMARY OF GRANT FUNDS EXPENDED

The tables in this section summarize the budget status by project task and by expenditure category for the Cleanup Grant awarded. The City elected to only use grant funding for contractual costs.

Cumulative Expenses Incurred by Project Task (EPA Grant Funds & Cost Share)

Task	EPA Grant				Cost Share	
	Approved Budget	Final Amount Invoiced	Remaining Budget	Percent of Budget Invoiced	Amount Budgeted	Amount Expended
1) Project Management & Reporting	\$0	\$0	\$0	--	\$0	\$0
2) Community Outreach	\$0	\$0	\$0	--	\$0	\$0
3) Cleanup Planning	\$8,000	\$10,592	(\$2,592)	132%	\$0	\$0
4) Cleanup Performance & Completion/Grant Closeout	\$192,000	\$189,408	\$2,592	98.6%	\$40,000	\$40,000
Total	\$200,000	\$200,000	\$0	100%	\$40,000	\$40,000

Expenses Incurred by Expenditure Category (EPA Grant Funds & Cost Share)

Expenditure Category	Approved Budget	Cumulative Amount Invoiced	Remaining Budget	Percent of Budget Invoiced
Contractual – Environmental Consultant (Stantec)	\$22,500	\$22,500	\$0	100%
Contractual – Remedial Contractor	\$177,500	\$177,500	\$0	100%

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Expenditure Category	Approved Budget	Cumulative Amount Invoiced	Remaining Budget	Percent of Budget Invoiced
EPA Grant Total	\$200,000	\$200,000	\$0	100%
Cost Share Total	\$40,000	\$40,000	\$0	100%
Combined Total	\$240,000	\$240,000	\$0	100%

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VII. SUMMARY OF LEVERAGED RESOURCES

In-Kind Contributions from Grantee

In-kind contributions (i.e. additional remedial costs) provided by the City in support of Tasks 1-4 for the Cleanup Grant are summarized on Table 2.

Leveraged Funding

The table below summarizes resources leveraged for completion of the River Park revitalization project.

Funding Source	Amount	Status	Description
Riverfront Park Development Bond	\$64.3M	Approved by voters in 2014	In November 2014, 67% of voters in Spokane approved issuance of \$64.3 million (M) in bonds to pay for improvements at Riverfront Park necessary to revitalize the site and to implement the Riverfront Park Master Plan. The funding included \$60M to pay for Park improvements and \$4.3M to pay debt service for the first five years of the 20-year payment period.

VIII. ATTACHMENTS

This report includes the following attachments:

- A – Sample Location Figure and Analytical Data Table

IX. PROJECT “SUCCESS STORY” NARRATIVE



Great Northern Railway Depot Clock Tower at Spokane's Riverfront Park.

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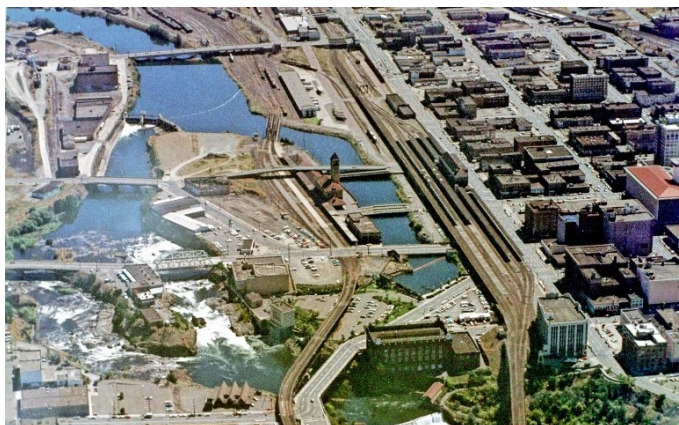
EPA Grant Project Overview



In 2014, the City was awarded \$400,000 in funding by the EPA for use in assessing vacant, underutilized, or abandoned properties for which redevelopment or reuse is complicated by known or suspected environmental liabilities (i.e., “brownfields”). The EPA brownfield funding was used to advance local efforts focused on redevelopment and reuse of priority brownfield sites throughout the City. In 2017, the City was awarded additional EPA brownfield funding (3 cleanup grants totaling \$600,000) to support revitalization of three sites within the approximately 100-acre Riverfront Park: Havermale Island (Site A), sin-hoo-men-hun (formerly Canada Island; Site B), and (c) the North Bank (Site C).

Site Background

Riverfront Park has a rich and varied history. The Park is centered on Spokane Falls – a spectacular natural feature that for thousands of years served as a gathering place and prime fishing area for Native Americans. Power generated by the Falls made it a focus for industrial development beginning with the construction in 1871 of the first saw mill along the south bank. In subsequent decades, the area also became a hub for the rail industry – with rail yards covering Havermale Island (the present site of the Park) which was also the location of the Great Northern Railroad Depot completed in 1902.



View of site as initial site preparations for Expo '74 were underway.



View of demolition of elevated trestles in railyard area as part of preparations for Expo '74.

Over subsequent decades, the area became increasingly characterized by blight, pollution, and abandonment. Concerns over the area's condition led to it being identified as a focus for urban renewal in a Master Plan adopted for the area in 1961.

In 1964, the City adopted the *Riverfront and Great Gorge Park Development Statement* which envisioned new urban projects for use in cleaning up and improving the riverfront area. This served in part as inspiration for a bold and successful plan launched by the community shortly thereafter to transform the area into the site for a World's Fair (Expo '74). In a few short years, the area underwent unprecedented revitalization including cleaning up the river, relocating rail yards, and building the expansive park grounds and facilities that welcomed over 5 million visitors to Expo '74 over a six-month run.

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EPA Brownfield Cleanup Grant for Hazardous Substances
Site A – Havermale Island, City of Spokane, Washington

In the 45 years since Expo '74, economic distress and lack of investment has resulted in deteriorating conditions that have negatively impacted the area. Over 5,000 of the City's most economically distressed residents reside in adjacent neighborhoods. Poverty rates exceed fifty percent, half of households qualify for food stamps, and home ownership rates are less than twenty percent of local, state, and US averages. Although the Park was consistently ranked as one of the top tourist attractions in Spokane, it had not seen significant upgrades in the forty years since it opened.

The Riverfront Park Master Plan was established in 2014 culminating a 2.5-year planning process that included over 75 public outreach meetings. This was followed in November 2014 by the overwhelming passage by Spokane voters/residents of a referendum authorizing issuance of \$64 million in bonds to fund Park improvements identified in the Master Plan.



View of contaminated historical fill materials being excavated as part of the Riverfront Park redevelopment. Clock tower in the background is the last remaining portion of the former Great Northern Railroad Depot constructed in 1902 but demolished as part of the development for Expo '74.

Environmental Challenges

Although Expo '74 was the first ever environmentally themed World's Fair, redevelopment practices at the time pre-dated the enactment of soil and groundwater cleanup regulations as well as the assessment/reuse planning process that now guides most current redevelopment projects. Use of the site as a railyard and for other industrial uses left a legacy of polynuclear aromatic hydrocarbons (PAHs), heavy metals, and volatile organic compounds (VOCs) throughout many areas of the Park. Although Expo '74 resulted in much of the site being capped with clean imported fill materials, landscaping, roads or parking lots, and/or buildings, the nature and extent of contamination was not previously evaluated or assessed in detail. Therefore, as part of the redevelopment planning process, a comprehensive soil and groundwater investigation was conducted in 2016 throughout areas of the Park subject to grading, construction, or other planned improvements. This served as the basis for a Soil Management Plan approved by the Washington Department of Ecology in 2017.

The EPA brownfield cleanup grants were focused on three sites within Riverfront Park:

Final Performance Report – September 1, 2017 through October 31, 2018

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Site A – Havermale Island, City of Spokane, Washington

Havermale Island (Site A), sin-hoo-men-hun (formerly Canada Island; Site B), and (c) the North Bank (Site C). Draft ABCA documents were completed for each area in 2016 using funding from the City's 2014 EPA brownfields assessment grant. These ABCAs were updated in 2017-18 following the award of the EPA cleanup grants.

EPA Funded Services

Stantec was retained by the City to assist with implementation of the EPA assessment grant awarded in 2014 as well as the cleanup grants awarded in 2017. EPA assessment grant funding was used initially to support preparation of eligibility determination requests for the three target areas as well as preparation of the draft ABCA documents. Implementation of the three EPA cleanup grants is in progress with remedial activities underway in several areas. To date, an approved quality assurance project plan (QAPP) has been completed as well as updated ABCA documents. Remedial activities are in progress in several areas and have been completed within Site A (Havermale Island).

The total EPA funding expended for environmental assessment and cleanup at the three Riverfront Park sites is \$651,283. Although the total project cost is expected to exceed \$70 million, EPA funding has played a key role in helping to off-set remedial costs that were not anticipated at the time of passage of the bond issue in 2014.

Project Environmental, Social, and/or Economic Benefits

The redevelopment of Riverfront Park has provided the City with a fresh opportunity to bring the park to a higher environmental standard and level of sustainability befitting a site that was the focus for the first ever "environmentally themed" World's Fair. The journey to a cleaner Park starts from the ground up, or in this case, below the ground, where help from EPA grants enabled the City to remove or safely encapsulate thousands of tons of contaminated soil associated with nearly 100 years of industrial uses that predated Expo '74.



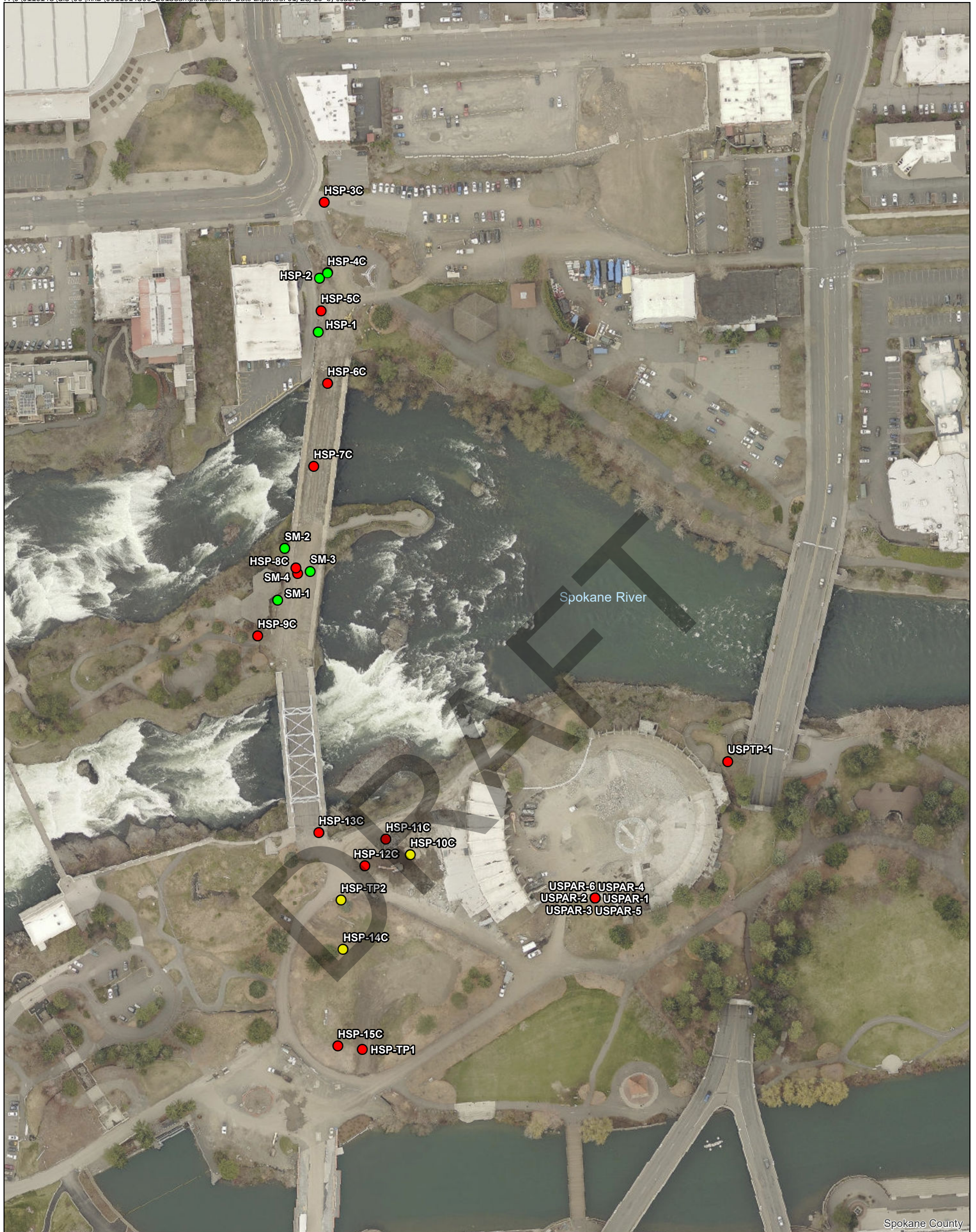
We are growing Spokane's economic vitality one park, one employer, one job at a time.

Much of our strategic plan is built on partnerships, reinvestment and creative reuse of important neighborhood and community assets. The working relationship we have with the EPA is bringing that vision to life through the cleanup grants and past assistance in assessments, planning and technical guidance the agency has brought to the table for Spokane to further leverage the investments our citizens are making.

Spokane Mayor, David Condon

Attachment A

Sample Location Figure and Analytical Data Table

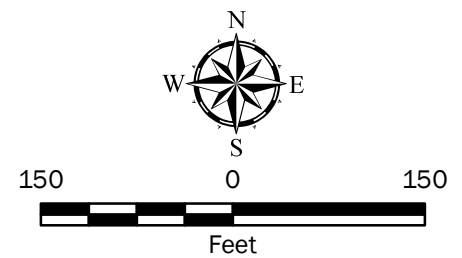


Spokane County

Legend

- Contaminated – Concentration greater than MTCA Method A Cleanup Level for one or more COC analyzed
- Impacted – Concentration less than MTCA Method A Cleanup Levels and greater than laboratory reporting limits or twice the available background metals concentration for each COC analyzed
- Clean – Concentration less than laboratory reporting limits or less than twice the available background metals concentrations for each COC analyzed

- TPH
- Metals
- ▲ PAHs



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: ESRI

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

Sample Location Riverfront Park in 2018	
Riverfront Park Spokane, Washington	
	Figure 1

VOCs ⁷	Vinyl Chloride	mg/Kg	NA	NE	--	--	--	--	--	--	--	--	--
	Xylene, m-,p-	mg/Kg	NA	NE	--	--	--	--	--	--	--	--	0.49 U
	Xylene, o-	mg/Kg	NA	NE	--	--	--	--	--	--	--	--	0.25 U
	Total Xylenes	mg/Kg	NA	9	--	--	--	--	--	--	--	--	0.49 U
PAHs ⁸	1-Methylnaphthalene	ug/Kg	NA	NE	10 U	10 U	10 U	10 U	26	11 U	11 U	10 U	10 U
	2-Methylnaphthalene	ug/Kg	NA	NE	12	10 U	10 U	10	28	11 U	11 U	10 U	10 U
	Naphthalene	ug/Kg	NA	NE	10 U	10 U	10 U	13	21	11 U	11 U	10 U	10 U
	Total Naphthalene	ug/Kg	NA	5,000 ⁹	12	10 U	10 U	23	75	11 U	11 U	10 U	10 U
	Acenaphthene	ug/Kg	NA	NE	10 U	10 U	25	13	110	11 U	11 U	10 U	10 U
	Acenaphthylene	ug/Kg	NA	NE	27	10 U	10 U	22	25	11 U	11 U	13	10 U
	Anthracene	ug/Kg	NA	NE	35	10 U	49	53	230	11 U	11 U	30	10 U
	Benzo(a)anthracene	ug/Kg	NA	NE	110	26	120	110	660	24	19	67	10 U
	Benzo(a)pyrene	ug/Kg	NA	100	130	33	130	120	680	29	25	85	10 U
	Benzo(b)fluoranthene	ug/Kg	NA	NE	150 J	40	150	170	690	30	29	92	10 U
	Benzo(g,h,i)perylene	ug/Kg	NA	NE	100	31	82	110	290	19	18	60	10 U
	Benzo(k)fluoranthene	ug/Kg	NA	NE	65	15	63	62	290	14	13	37	10 U
	Chrysene	ug/Kg	NA	NE	130	30	130	140	690	27	24	80	10 U
	Dibenzo(a,h)anthracene	ug/Kg	NA	NE	23	10 U	22	27	79	11 U	11 U	13	10 U
	Fluoranthene	ug/Kg	NA	NE	190	56	250	250	1,200	44	33	130	10 U
	Fluorene	ug/Kg	NA	NE	11	10 U	14	12	68	11 U	11 U	10 U	10 U
	Indeno(1,2,3-c,d)pyrene	ug/Kg	NA	NE	76	24	70	86	260	16	15	46	10 U
	Phenanthrene	ug/Kg	NA	NE	91	32	150	140	800	28	20	66	10 U
Pyrene	ug/Kg	NA	NE	220	52	220	230	1,500	46	36	150	10 U	
Total cPAH TEQ ¹⁰ (ND=0.5RL) ¹¹	ug/Kg	NA	100	173.7	44.3	173.8	166.9	884.8	38.22	33.39	111.3	10 U	

Notes

¹Samples analyzed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.

²Background level used for metals in soil is the Washington State Department of Ecology Natural Background 90th Percentile Value for the Spokane Basin (Ecology 1994)

³Model Toxics Control Act (MTCA) Method A unrestricted land use cleanup levels (CUL).

⁴Total Petroleum Hydrocarbons (TPH) analyzed using Method Northwest Method TPH-HCID, TPH-Gx, or TPH-Dx.

⁵Metals analyzed using Environmental Protection Agency (EPA) Method 6010C. Mercury by EPA Method 7471B.

⁶Chromium III cleanup level. MTCA Method A cleanup level for Chromium VI is 19 mg/kg.

⁷Volatile Organic Compounds (VOCs) analyzed using EPA Method 8260C.

⁸Polycyclic aromatic hydrocarbons analyzed using EPA Method 8270DSIM.

⁹Sum total value for naphthalene, 1-methyl naphthalene and 2-methyl naphthalene.

¹⁰Carcinogenic PAH (cPAH) toxic equivalency (TEQ) calculated using toxicity equivalency factors (TEF) from MTCA Table 708-2, based on methodology described in MTCA Cleanup Regulation Washington Administrative Code (WAC) 173-340-708.

¹¹The TEQ reported was calculated using half the laboratory reporting limits for cPAHs less than reporting limits.

mg/kg = milligrams per kilogram; NE = not established; ug/kg = micrograms per kilogram; U = analyte was not detected above the laboratory reporting limit; J = estimated result; NA = Not Applicable; ft = feet

Bold indicates that the analyte was detected above the reporting limit.

Shading indicates that the analyte was detected above the MTCA Method A CUL.

Gold shading indicates analyte was not detected above the reporting limit, but the concentration was greater than or equal to the MTCA Method A CUL.

Blue shading indicates the reported concentration was greater than twice the Spokane Basin background metals concentration (Ecology 1994).

Justification is the reason to collect the sample and fate indicates where the soil that is represented by that sample is located after construction activities.

Analyte Group			Location ID, Sample ID, Date, and Depth Interval									
			MTCA Method A CUL ³	HSP-TP1		HSP-TP2		USPAR-1	USPAR-2	USPAR-3	USPAR-4	
				HSP-TP1:073018	HSP-TP2-081618	HSP-TP2-DUP-081618	USPAR-1 (4.5-5)	USPAR-2 (5.5-6)	USPAR-3 (5-5.5)	USPAR-4 (5.5-6)		
				7/30/2018 3 - 4 ft	8/16/2018 3 ft	8/16/2018 3 ft	8/20/2018 4.5 - 5 ft	8/20/2018 5.5 - 6 ft	8/20/2018 5 - 5.5 ft	8/20/2018 5.5 - 6 ft		
Analyte			Twice the Spokane Basin Background Metal Concentration ²	Justification	Evaluate in-place Soil	Profile for Disposal	Profile for Disposal	Profile for Disposal	Characterization Sample	Characterization Sample	Characterization Sample	
Units	Fate	Left in Place		Graham Road Landfill	Graham Road Landfill	Graham Road Landfill	Left in Place	Left in Place	Left in Place			
TPH ⁴	Gasoline-range hydrocarbons (HCID)	mg/Kg		NA	100	--	--	--	--	--	--	--
	Diesel-range hydrocarbons (HCID)	mg/Kg	NA	2,000	--	--	--	--	--	--	--	
	Lube Oil-range Hydrocarbons (HCID)	mg/Kg	NA	2,000	--	--	--	--	--	--	--	
	Gasoline-range hydrocarbons	mg/Kg	NA	100	19	5.6 U	7.6 U	4.8 U	5.7 U	5.7 U	6.7 U	
	Diesel-range hydrocarbons	mg/Kg	NA	2,000	480 J	67 J	73 J	3,000 J	610 J	36 J	1,500 J	
	Lube Oil-range Hydrocarbons	mg/Kg	NA	2,000	300 J	280	290	20,000	4,700	300	12,000	
Metals ⁵	Arsenic	mg/Kg	18.68	20	15	12	12	6.7	13	12	13	
	Barium	mg/Kg	NE	NE	70	84	88	69	72	72	71	
	Cadmium	mg/Kg	1.4	2	1.9 U	1.4 U	1.4 U	1.7 U	1.6 U	1.7 U	1.6 U	
	Chromium	mg/Kg	35.6	2,000 ⁶	21	10	11	11	9.3	9.7	11	
	Lead	mg/Kg	29.8	250	87	93 J	140 J	34	9.6	18	24	
	Mercury	ug/Kg	40	2,000	63	45 U	43 U	83	41 U	46	46	
	Selenium	mg/Kg	NE	NE	9.5 U	7.2 U	7.1 U	8.5 U	7.9 U	8.6 U	8.1 U	
	Silver	mg/Kg	NE	NE	2.4 U	1.8 U	1.8 U	2.1 U	2.0 U	2.2 U	2.0 U	
VOCs ⁷	1,1,1,2-Tetrachloroethane	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,1,1-Trichloroethane	mg/Kg	NA	2	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,1,2,2-Tetrachloroethane	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,1,2-Trichloroethane	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,1-Dichloroethane	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,1-Dichloroethene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,1-Dichloropropene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,2,3-Trichlorobenzene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,2,3-Trichloropropane	mg/Kg	NA	NE	0.17 U	0.23 U	0.31 U	0.19 U	0.23 U	0.23 U	0.27 U	
	1,2,4-Trichlorobenzene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,2,4-Trimethylbenzene	mg/Kg	NA	NE	0.49	0.13	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,2-Dibromo-3-Chloropropane	mg/Kg	NA	NE	0.42 U	0.56 U	0.76 U	0.48 U	0.57 U	0.57 U	0.67 U	
	1,2-Dibromoethane	mg/Kg	NA	0.005	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,2-Dichlorobenzene (o-Dichlorobenzene)	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,2-Dichloroethane	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
	1,2-Dichloropropane	mg/Kg	NA	NE	0.10 U	0.14 U	0.18 U	0.12 U	0.14 U	0.14 U	0.16 U	

VOCs ⁷	1,3,5-Trimethylbenzene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	1,3-Dichlorobenzene (m-Dichlorobenzene)	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	1,3-Dichloropropane	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	1,4-Dichlorobenzene (p-Dichlorobenzene)	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	2,2-Dichloropropane	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	2-Butanone (MEK)	mg/Kg	NA	NE	0.85 U	1.1 U	1.5 U	0.96 U	1.1 U	1.1 U	1.3 U
	2-Chlorotoluene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	2-Hexanone	mg/Kg	NA	NE	0.85 U	1.1 U	1.5 U	0.96 U	1.1 U	1.1 U	1.3 U
	4-Chlorotoluene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	4-Methyl-2-Pentanone (Methyl isobutyl ketone)	mg/Kg	NA	NE	0.85 U	1.1 U	1.5 U	0.96 U	1.1 U	1.1 U	1.3 U
	Acetone	mg/Kg	NA	NE	2.5 U	3.4 U	4.6 U	2.9 U	3.4 U	3.4 U	4.0 U
	Benzene	mg/Kg	NA	0.03	0.024	0.023 U	0.031 U	0.019 U	0.023 U	0.023 U	0.027 U
	Bromobenzene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Bromochloromethane	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Bromodichloromethane	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Bromoform (Tribromomethane)	mg/Kg	NA	NE	0.17 U	0.23 U	0.31 U	0.19 U	0.23 U	0.23 U	0.27 U
	Bromomethane	mg/Kg	NA	NE	0.42 U	0.56 U	0.76 U	0.48 U	0.57 U	0.57 U	0.67 U
	Carbon Disulfide	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Carbon Tetrachloride	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Chlorobenzene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Chloroethane	mg/Kg	NA	NE	0.17 U	0.23 U	0.31 U	0.19 U	0.23 U	0.23 U	0.27 U
	Chloroform	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Chloromethane	mg/Kg	NA	NE	0.42 U	0.56 U	0.76 U	0.48 U	0.57 U	0.57 U	0.67 U
	cis-1,2-Dichloroethene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	cis-1,3-Dichloropropene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Dibromochloromethane	mg/Kg	NA	NE	0.17 U	0.23 U	0.31 U	0.19 U	0.23 U	0.23 U	0.27 U
	Dibromomethane	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Dichlorodifluoromethane (CFC-12)	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Ethylbenzene	mg/Kg	NA	6	0.23	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	HCFC-21	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Hexachlorobutadiene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Isopropylbenzene (Cumene)	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Methyl t-butyl ether	mg/Kg	NA	0.1	0.042 U	0.056 U	0.076 U	0.048 U	0.057 U	0.057 U	0.067 U
	Methylene Chloride	mg/Kg	NA	0.02	0.30 U	0.40 U	0.53 U	0.34 U	0.40 U	0.40 U	0.47 U
	Naphthalene	mg/Kg	NA	5	0.70	0.23 U	0.31 U	0.19 U	0.23 U	0.23 U	0.27 U
	n-Butylbenzene	mg/Kg	NA	NE	0.12	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	n-Hexane	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	n-Propylbenzene	mg/Kg	NA	NE	0.17	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	p-Isopropyltoluene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
	Sec-Butylbenzene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U
Styrene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
Tert-Butylbenzene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
Tetrachloroethene	mg/Kg	NA	0.05	0.034 U	0.045 U	0.061 U	0.038 U	0.045 U	0.045 U	0.054 U	
Toluene	mg/Kg	NA	7	0.095	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
Total Xylenes	mg/Kg	NA	NE	0.77	0.68 U	0.92 U	0.58 U	0.68 U	0.68 U	0.81 U	
Trans-1,2-Dichloroethene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
Trans-1,3-Dichloropropene	mg/Kg	NA	NE	0.085 U	0.11 U	0.15 U	0.096 U	0.11 U	0.11 U	0.13 U	
Trichloroethene	mg/Kg	NA	0.03	0.021 U	0.028 U	0.038 U	0.024 U	0.028 U	0.028 U	0.034 U	
Trichlorofluoromethane (CFC-11)	mg/Kg	NA	NE	0.17 U	0.23 U	0.31 U	0.19 U	0.23 U	0.23 U	0.27 U	

VOCs ⁷	Vinyl Chloride	mg/Kg	NA	NE	0.051 U	0.068 U	0.092 U	0.058 U	0.068 U	0.068 U	0.081 U
	Xylene, m-,p-	mg/Kg	NA	NE	0.64	0.45 U	0.61 U	0.38 U	0.45 U	0.45 U	0.54 U
	Xylene, o-	mg/Kg	NA	NE	0.17 U	0.23 U	0.31 U	0.19 U	0.23 U	0.23 U	0.27 U
	Total Xylenes	mg/Kg	NA	9	0.64	0.45 U	0.61 U	0.38 U	0.45 U	0.45 U	0.54 U
PAHs ⁸	1-Methylnaphthalene	ug/Kg	NA	NE	1,800	31	26	10 U	110 U	10 U	11 U
	2-Methylnaphthalene	ug/Kg	NA	NE	5,200	33	28	10 U	110 U	10 U	11 U
	Naphthalene	ug/Kg	NA	NE	--	11	10 U	10 U	110 U	10 U	11 U
	Total Naphthalene	ug/Kg	NA	5,000 ⁹	7,000	75	54	10 U	110 U	10 U	11 U
	Acenaphthene	ug/Kg	NA	NE	11 U	10 U	10 U	10 U	110 U	10 U	11 U
	Acenaphthylene	ug/Kg	NA	NE	76	10 U	10 U	14	110 U	10 U	11 U
	Anthracene	ug/Kg	NA	NE	400	10 U	10 U	16	110 U	10 U	27
	Benzo(a)anthracene	ug/Kg	NA	NE	100	22	29	10 U	110 U	21	47
	Benzo(a)pyrene	ug/Kg	NA	100	85	25	30	100 U	110 U	24	110 U
	Benzo(b)fluoranthene	ug/Kg	NA	NE	180	31	32	100 U	110 U	31	110 U
	Benzo(g,h,i)perylene	ug/Kg	NA	NE	100	27	28	100 U	110 U	18	110 U
	Benzo(k)fluoranthene	ug/Kg	NA	NE	42	11	13	100 U	110 U	11	110 U
	Chrysene	ug/Kg	NA	NE	150	31	39	41	110 U	23	53
	Dibenzo(a,h)anthracene	ug/Kg	NA	NE	20	10 U	10 U	100 U	110 U	10 U	110 U
	Fluoranthene	ug/Kg	NA	NE	340	37	39	75	110 U	40	99
	Fluorene	ug/Kg	NA	NE	530	10 U	10 U	10 U	110 U	10 U	13
	Indeno(1,2,3-c,d)pyrene	ug/Kg	NA	NE	77	18	19	100 U	110 U	13	110 U
	Phenanthrene	ug/Kg	NA	NE	1100	20	23	42	110 U	18	98
Pyrene	ug/Kg	NA	NE	470	46	59	140	110 U	41	120	
Total cPAH TEQ ¹⁰ (ND=0.5RL) ¹¹	ug/Kg	NA	100	128.4	34.01	40.19	70.91	83.05 U	32.33	82.23	

Notes

¹Samples analyzed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.

²Background level used for metals in soil is the Washington State Department of Ecology Natural Background 90th Percentile Value for the Spokane Basin (Ecology 1994)

³Model Toxics Control Act (MTCA) Method A unrestricted land use cleanup levels (CUL).

⁴Total Petroleum Hydrocarbons (TPH) analyzed using Method Northwest Method TPH-HCID, TPH-Gx, or TPH-Dx.

⁵Metals analyzed using Environmental Protection Agency (EPA) Method 6010C. Mercury by EPA Method 7471B.

⁶Chromium III cleanup level. MTCA Method A cleanup level for Chromium VI is 19 mg/kg.

⁷Volatile Organic Compounds (VOCs) analyzed using EPA Method 8260C.

⁸Polycyclic aromatic hydrocarbons analyzed using EPA Method 8270DSIM.

⁹Sum total value for naphthalene, 1-methyl naphthalene and 2-methyl naphthalene.

¹⁰Carcinogenic PAH (cPAH) toxic equivalency (TEQ) calculated using toxicity equivalency factors (TEF) from MTCA Table 708-2, based on methodology described in MTCA Cleanup Regulation Washington Administrative Code (WAC) 173-340-708.

¹¹The TEQ reported was calculated using half the laboratory reporting limits for cPAHs less than reporting limits.

mg/kg = milligrams per kilogram; NE = not established; ug/kg = micrograms per kilogram; U = analyte was not detected above the laboratory reporting limit; J = estimated result; NA = Not Applicable; ft = feet

Bold indicates that the analyte was detected above the reporting limit.

Shading indicates that the analyte was detected above the MTCA Method A CUL.

Gold shading indicates analyte was not detected above the reporting limit, but the concentration was greater than or equal to the MTCA Method A CUL.

Blue shading indicates the reported concentration was greater than twice the Spokane Basin background metals concentration (Ecology 1994).

Justification is the reason to collect the sample and fate indicates where the soil that is represented by that sample is located after construction activities.

Analyte Group	Analyte	Units	Twice the Spokane Basin Background Metal Concentration ²	MTCA Method A CUL ³	Location ID, Sample ID, Date, and Depth Interval			
					USPAR-5 USPAR-5 (5-5.5) 8/20/2018 5 - 5.5 ft	USPAR-6 USPAR-6 (5-5.5) 8/20/2018 5 - 5.5 ft	DUP-20180820 8/20/2018 5 - 5.5 ft	USPTP-1 USPTP-1 (2-2.5) 7/18/2018 2 - 2.5 ft
					Justification	Characterization Sample	Characterization Sample	Characterization Sample
				Fate	Left in Place	Left in Place	Left in Place	Used in Promenade and Pavilion Construction
TPH ⁴	Gasoline-range hydrocarbons (HCID)	mg/Kg	NA	100	--	--	--	25 U
	Diesel-range hydrocarbons (HCID)	mg/Kg	NA	2,000	--	--	--	51 U
	Lube Oil-range Hydrocarbons (HCID)	mg/Kg	NA	2,000	--	--	--	100 U
	Gasoline-range hydrocarbons	mg/Kg	NA	100	5.4 U	6.0 U	6.0 U	--
	Diesel-range hydrocarbons	mg/Kg	NA	2,000	770 J	760 J	560 J	--
	Lube Oil-range Hydrocarbons	mg/Kg	NA	2,000	4,000	4,300	3,800	--
Metals ⁵	Arsenic	mg/Kg	18.68	20	8.6	10	9.3	11
	Barium	mg/Kg	NE	NE	93	77	63	53
	Cadmium	mg/Kg	1.4	2	1.6 U	1.8 U	1.7 U	2.0 U
	Chromium	mg/Kg	35.6	2,000 ⁶	12	15 J	9.5 J	15
	Lead	mg/Kg	29.8	250	36	25	17	12
	Mercury	ug/Kg	40	2,000	60	75	49	32 U
	Selenium	mg/Kg	NE	NE	8.0 U	9.2 U	8.6 U	9.9 U
	Silver	mg/Kg	NE	NE	2.0 U	2.3 U	2.1 U	2.5 U
VOCs ⁷	1,1,1,2-Tetrachloroethane	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,1,1-Trichloroethane	mg/Kg	NA	2	0.11 U	0.12 U	0.12 U	--
	1,1,2,2-Tetrachloroethane	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,1,2-Trichloroethane	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,1-Dichloroethane	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,1-Dichloroethene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,1-Dichloropropene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,2,3-Trichlorobenzene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,2,3-Trichloropropane	mg/Kg	NA	NE	0.22 U	0.24 U	0.24 U	--
	1,2,4-Trichlorobenzene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,2,4-Trimethylbenzene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,2-Dibromo-3-Chloropropane	mg/Kg	NA	NE	0.54 U	0.60 U	0.60 U	--
	1,2-Dibromoethane	mg/Kg	NA	0.005	0.11 U	0.12 U	0.12 U	--
	1,2-Dichlorobenzene (o-Dichlorobenzene)	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,2-Dichloroethane	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,2-Dichloropropane	mg/Kg	NA	NE	0.13 U	0.14 U	0.14 U	--

VOCs ⁷	1,3,5-Trimethylbenzene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,3-Dichlorobenzene (m-Dichlorobenzene)	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,3-Dichloropropane	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	1,4-Dichlorobenzene (p-Dichlorobenzene)	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	2,2-Dichloropropane	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	2-Butanone (MEK)	mg/Kg	NA	NE	1.1 U	1.2 U	1.2 U	--
	2-Chlorotoluene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	2-Hexanone	mg/Kg	NA	NE	1.1 U	1.2 U	1.2 U	--
	4-Chlorotoluene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	4-Methyl-2-Pentanone (Methyl isobutyl ketone)	mg/Kg	NA	NE	1.1 U	1.2 U	1.2 U	--
	Acetone	mg/Kg	NA	NE	3.3 U	3.6 U	3.6 U	--
	Benzene	mg/Kg	NA	0.03	0.022 U	0.024 U	0.024 U	--
	Bromobenzene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Bromochloromethane	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Bromodichloromethane	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Bromoform (Tribromomethane)	mg/Kg	NA	NE	0.22 U	0.24 U	0.24 U	--
	Bromomethane	mg/Kg	NA	NE	0.54 U	0.60 U	0.60 U	--
	Carbon Disulfide	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Carbon Tetrachloride	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Chlorobenzene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Chloroethane	mg/Kg	NA	NE	0.22 U	0.24 U	0.24 U	--
	Chloroform	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Chloromethane	mg/Kg	NA	NE	0.54 U	0.60 U	0.60 U	--
	cis-1,2-Dichloroethene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	cis-1,3-Dichloropropene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Dibromochloromethane	mg/Kg	NA	NE	0.22 U	0.24 U	0.24 U	--
	Dibromomethane	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Dichlorodifluoromethane (CFC-12)	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Ethylbenzene	mg/Kg	NA	6	0.11 U	0.12 U	0.12 U	--
	HCFC-21	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Hexachlorobutadiene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Isopropylbenzene (Cumene)	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Methyl t-butyl ether	mg/Kg	NA	0.1	0.054 U	0.060 U	0.060 U	--
	Methylene Chloride	mg/Kg	NA	0.02	0.38 U	0.42 U	0.42 U	--
	Naphthalene	mg/Kg	NA	5	0.22 U	0.24 U	0.24 U	--
	n-Butylbenzene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	n-Hexane	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	n-Propylbenzene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	p-Isopropyltoluene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Sec-Butylbenzene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
	Styrene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--
Tert-Butylbenzene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--	
Tetrachloroethene	mg/Kg	NA	0.05	0.043 U	0.048 U	0.048 U	--	
Toluene	mg/Kg	NA	7	0.11 U	0.12 U	0.12 U	--	
Total Xylenes	mg/Kg	NA	NE	0.65 U	0.72 U	0.72 U	--	
Trans-1,2-Dichloroethene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--	
Trans-1,3-Dichloropropene	mg/Kg	NA	NE	0.11 U	0.12 U	0.12 U	--	
Trichloroethene	mg/Kg	NA	0.03	0.027 U	0.030 U	0.030 U	--	
Trichlorofluoromethane (CFC-11)	mg/Kg	NA	NE	0.22 U	0.24 U	0.24 U	--	

VOCs ⁷	Vinyl Chloride	mg/Kg	NA	NE	0.065 U	0.072 U	0.072 U	-
	Xylene, m-,p-	mg/Kg	NA	NE	0.43 U	0.48 U	0.48 U	-
	Xylene, o-	mg/Kg	NA	NE	0.22 U	0.24 U	0.24 U	-
	Total Xylenes	mg/Kg	NA	9	0.43 U	0.48 U	0.48 U	-
PAHs ⁸	1-Methylnaphthalene	ug/Kg	NA	NE	11 U	10 U	11 U	9.9 U
	2-Methylnaphthalene	ug/Kg	NA	NE	11 U	10 U	11 U	9.9 U
	Naphthalene	ug/Kg	NA	NE	11 U	10 U	11 U	9.9 U
	Total Naphthalene	ug/Kg	NA	5,000 ⁹	11 U	10 U	11 U	9.9 U
	Acenaphthene	ug/Kg	NA	NE	11 U	10 U	11 U	73
	Acenaphthylene	ug/Kg	NA	NE	23	20	17	9.9 U
	Anthracene	ug/Kg	NA	NE	15	19	18	130
	Benzo(a)anthracene	ug/Kg	NA	NE	64	71	64	280
	Benzo(a)pyrene	ug/Kg	NA	100	72	100 U	110 U	290
	Benzo(b)fluoranthene	ug/Kg	NA	NE	110	110	120	340
	Benzo(g,h,i)perylene	ug/Kg	NA	NE	56	100	110 U	180
	Benzo(k)fluoranthene	ug/Kg	NA	NE	41	100 U	110 U	140
	Chrysene	ug/Kg	NA	NE	75	84	75	300
	Dibenzo(a,h)anthracene	ug/Kg	NA	NE	13	100 U	110 U	46
	Fluoranthene	ug/Kg	NA	NE	98	120	99	650
	Fluorene	ug/Kg	NA	NE	11 U	10 U	11 U	49
	Indeno(1,2,3-c,d)pyrene	ug/Kg	NA	NE	43	100 U	110 U	150
Phenanthrene	ug/Kg	NA	NE	29	54	47	390	
Pyrene	ug/Kg	NA	NE	120	140	110	580	
Total cPAH TEQ ¹⁰ (ND=0.5RL) ¹¹	ug/Kg	NA	100	99.85	83.94	90.65	388.6	

Notes

¹Samples analyzed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.

²Background level used for metals in soil is the Washington State Department of Ecology Natural Background 90th Percentile Value for the Spokane Basin (Ecology 1994)

³Model Toxics Control Act (MTCA) Method A unrestricted land use cleanup levels (CUL).

⁴Total Petroleum Hydrocarbons (TPH) analyzed using Method Northwest Method TPH-HCID, TPH-Gx, or TPH-Dx.

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¹¹The TEQ reported was calculated using half the laboratory reporting limits for cPAHs less than reporting limits.

mg/kg = milligrams per kilogram; NE = not established; ug/kg = micrograms per kilogram; U = analyte was not detected above the laboratory reporting limit; J = estimated result; NA = Not Applicable; ft = feet

Bold indicates that the analyte was detected above the reporting limit.

Shading indicates that the analyte was detected above the MTCA Method A CUL.

Gold shading indicates analyte was not detected above the reporting limit, but the concentration was greater than or equal to the MTCA Method A CUL.

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