



PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT

FY24 BROWNFIELDS CLEANUP GRANT APPLICATION:

1700 S 49TH STREET

DRAFT SUBMISSION

PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT

OCTOBER 26, 2023

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Please note that appendices are not included in this draft document. To request an appendix, please contact Julia Cohen at jcohen@pidcphila.com or (215) 496-8138.

To provide comments on this draft application, please also contact Julia Cohen at the above email address or phone number.

Narrative Information Sheet

Applicant Identification

Philadelphia Authority for Industrial Development (PAID) is the Applicant. The day-to-day affairs of PAID are managed by PIDC (Lead Organization and Management Company for Applicant) under the direction and governance of a five-member Board of Directors appointed by the Mayor of Philadelphia. PIDC is the City of Philadelphia's public-private economic development corporation.

2. Funding Requested

- a) Grant Type: Single Site Cleanup
- b) Federal Funds Requested: to be finalized (approximately \$1,260,000-\$1,400,000)

3. Location

The property is located at 1700 S. 49th Street, Philadelphia, PA 19143.

City: Philadelphia

County: Philadelphia

State: Pennsylvania

4. Property Information

The property is located at 1700 S. 49th Street, Philadelphia, PA 19143. It has sometimes been called "49th Street Terminal."

5. Contacts

- a) Project Director: Julia Cohen
 - i) Phone Number: (215) 496-8138
 - ii) Email Address: jcohen@pidcphila.com
 - iii) Mailing Address: 1500 Market Street Suite 3500 West, Philadelphia, PA 19102
- b) Chief Executive/Highest Ranking Elected Official: Thomas Queenan
 - i) Phone Number: 215-496-8020
 - ii) Email Address: to be included in full submission
 - iii) Mailing Address: 1500 Market Street Suite 3500 West, Philadelphia, PA 19102

6. Population

Philadelphia's population is 1,603,797 (source: 2020 US Census).

7. Other Factors	Page in Narrative
The proposed site(s) is adjacent to a body of water (i.e., the border of the proposed site(s) is contiguous or partially contiguous to the body of water, or would be contiguous or partially contiguous with a body of water but for a street, road, or other public thoroughfare separating them).	1.a

The proposed site(s) is in a federally designated flood plain.	1.b.i
The reuse of the proposed cleanup site(s) will incorporate energy efficiency measures.	1.b.ii
The proposed project will improve local climate adaptation/mitigation capacity and resilience to protect residents and community investments.	1.b

8. Releasing Copies of Applications

N/A at the time of draft publication.

Narrative Responses

Section 1: Project Area Description and Plans for Revitalization

1.a.i Target Area and Brownfields: Brownfields Challenges and Target Area

The subject property (1700 S. 49th Street, historically known as 49th Street Terminal), is a trapezoidal property owned by the Philadelphia Authority for Industrial Development (PAID). It is approximately 0.86 acres in size and is located along the western edge of the Schuylkill River in Southwest Philadelphia. PAID has defined the target area as census tracts 391 (where the subject property is located), 74, and 70. The target area includes the neighborhood of Kingsessing (a disadvantaged community), as well as the Philadelphia Housing Authority's Bartram Village complex.

Historically, this part of the Schuylkill riverfront has been inaccessible due to surrounding industrial uses, which also have contributed to environmental justice challenges. This funding would bring investment into disadvantaged neighborhoods, creating access to safe and affordable active transportation and recreation opportunities. The project will remediate degraded riverfront land, reducing the harmful impact air and water pollution has had on its nearby neighbors. The riverfront location is a tidal freshwater zone of the lower Schuylkill River, an environmentally significant stretch of the Delaware River Basin. In addition, jobs created through the property's redevelopment will bring economic opportunity to residents of the target area through accessible, well-paying jobs.

1.a.ii Target Area and Brownfields: Description of Proposed Brownfield Site

The subject property (1700 S. 49th Street) is currently unused and is heavily overgrown with brush and trees. A defunct fuel transfer system and canopy and a corrugated metal storage trailer structure are located in the western corner by the site's gravel entrance driveway. An old river pier and bulkhead are also located off the bank of the Schuylkill River off the eastern edge of the site.

The property was first developed prior to 1923 as a sand and gravel wharf. It was an oil terminal from circa 1942 to 2006. Former railroad spurs served the site. The property was labeled as the "Water Terminal Fuel Oil Co.", "Franco Coal Co" and "Water Terminal Fuel Oil Sta" on historical Sanborn Fire Insurance maps and as "Major Petroleum Company" in 1975 to 2005 Sanborn maps. Six large, circular bulk fuel storage aboveground storage tanks (ASTs) and more than four accessory ASTs appear onsite in historical photos, but all storage tanks were removed by a previous owner. The site is listed by Environmental Data Resources, Inc. (EDR) on the US Brownfields database as the "49th Street Terminal, 1700 S. 49th Street, Philadelphia, PA 19143."

Sci-Tek documented that a non-operational fuel transfer system and canopy and a corrugated metal storage trailer structure were located onsite in its 2022 Remediation Evaluation. These structures were observed in the western corner of the Site by the gravel entrance driveway. An old river pier and bulkhead were also observed off the bank of the Schuylkill River at the eastern edge of the property. Site constituents of concern include semi-volatile organic compounds (SVOCs) and lead. Some residual subsurface contamination remains onsite. Remediation activities will impact the entirety of the subject property.

1.b.i Revitalization of the Target Area: Reuse Strategy and Alignment with Revitalization Plans

The remediation of this 0.86 acre site will yield an exponential return on investment, as the site is linchpin to two revitalization projects: 1) the Lower Schuylkill Biotech Campus, a large scale economic development and job generating project; and 2) the Schuylkill River Trail, a critical greenway that will connect underserved communities to the rest of the city.¹

Approximately half of the property (between 0.4 and 0.5 acres) will be incorporated into the Biotech Campus, which will be a 40-acre life sciences manufacturing campus being developed as a partnership between PIDC (a nonprofit economic development corporation with over 65 years of economic development experience that manages PAID) and a private development partner.

The remaining portion of the property (between 0.4 and 0.5 acres along its eastern side) will eventually be conveyed to the City of Philadelphia for the realignment of a portion of the river trail from its current location along Botanic Avenue. This will allow the publicly accessible multi-use trail to more closely follow the river, supporting access to this amenity to local residents who have long been disconnected from both the river and the trail. The trail's relocation to the subject property will also serve as a riverfront buffer, given the property's location in a federally designated floodplain. Once completed, the trail will connect Southwest Philadelphia to other areas of the City, including Center City, Grays Ferry, and South Philadelphia. Both the Biotech Campus and the trail are crucial to connecting residents of Southwest Philadelphia with amenities and jobs that have historically been largely inaccessible.

This environmental cleanup conforms with several community planning documents produced by the City of Philadelphia as well as other local agencies and organizations. All of these plans engaged community residents and community organizations as members of advisory groups and/or in public meetings. For example, the investment aligns closely with the Lower Schuylkill Master Plan, which was adopted by the City of Philadelphia in 2013. The guiding principles of the Lower Schuylkill Master Plan include: (1) create a new identity as a 21st-century industrial district; (2) prioritize job creation and economic growth; (3) provide access to the river; and (4) build sustainably. The plan describes the importance of addressing environmental contamination, focusing initial efforts in early action areas (including the subject property) identified in the document. Community outreach for this plan included four open houses and feedback sessions. In addition, an Advisory Board of public and private sector stakeholders, community representatives, and advocacy groups was involved throughout the process.

In addition to this plan, remediation of the subject property aligns with the City's *Trail Master Plan*, *Greenworks: A Vision for a Sustainable Philadelphia*, and its comprehensive plan, *Philadelphia2035*. Recommendations 17 and 27 from the *University/Southwest District Plan of Philadelphia2035* call for the reuse of Lower Schuylkill industrial properties to better attract R&D, advanced manufacturing, and institutional uses, and for the extension of trails. Public

¹ Throughout the remainder of this document, the Lower Schuylkill Biotech Campus will be referred to as the Biotech Campus, and the Schuylkill River Trail will be referred to as the river trail or the trail.

meetings were part of the overall comprehensive plan as well as the district plan for this neighborhood. Meeting summaries and comments from community members are included on the *Philadelphia2035 website and within the plans themselves*. The subject property's designation as a Keystone Opportunity Zone is further indication of its alignment with regional priorities for economic development and neighborhood revitalization.

We convened an Advisory Committee made up of community and government partners to develop the RFP and evaluate responses for the Biotech Campus project that will occupy about half of the property once it is remediated. This group participated in developer interviews, asking questions of the RFP respondents. We have invited Advisory Committee members to attend private tours of other facilities in Philadelphia to learn more about life sciences manufacturing and the potential for accessible jobs. Community groups on the Advisory Committee received an honorarium in recognition of their contribution.

We meet with community partners at least quarterly to share updates, hear about their projects, and offer technical support when appropriate. A key part of these meetings is to identify opportunities to present to additional community members. For example, we presented about the Biotech Campus to the Southwest Leadership Circle, a stipended group of local leaders convened by Bartram's Garden, in December 2022. Members include local small business owners and neighborhood leadership (block captains, ward members, parents, teachers, clergy, and nonprofit executives). This project's focus on environmental restoration, community engagement, and workforce development reflects the top priorities identified by the Leadership Circle. Members of this group also joined a site visit alongside Biotech Campus Advisory Committee members this fall.

We also have quarterly coordination meetings with the Philadelphia Housing Authority and the Southeastern Pennsylvania Transportation Authority. These relationships create additional opportunities to connect with community members. In October 2023, staff participated in a community event at the Bartram Village housing complex, located within the target area. This event was attended by more than 200 residents. We anticipate similar opportunities as the project progresses.

1.b.ii Revitalization of the Target Area: Outcomes and Benefits of Reuse Strategy

Environmental cleanup of the subject property will lead to significant positive outcomes for the target area (and for Philadelphia more broadly) including the creation of quality jobs and workforce development programs as well as the addition of two new acres of greenway spaces.² All of this is completed with a lens to climate adaptation and resilience.

As part of our mission to spur investment, support business growth, and foster developments that create jobs, revitalize neighborhoods, and drive growth to every corner of Philadelphia, the Biotech Campus will provide for the manufacture of advanced therapeutics in immediate proximity to the world class healthcare institutions that are delivering care to patients in nearby University City. More than 2,000 jobs paying family sustaining wages are anticipated at full

² The subject property is one of three properties owned by PAID that will be conveyed for use as public park space and for the trail. This is in addition to 8+ acres that have already been conveyed and 3.4 acres to be conveyed a mile to the south of the target area.

buildout of the Biotech Campus (by 2030), with a focus on employment opportunities for residents of Southwest Philadelphia. The campus will be an important part of cell and gene therapy manufacturing's continued growth in Philadelphia and will strengthen and build from connections with other life science hubs in the adjacent Navy Yard, University City, and Grays Ferry neighborhoods.

Importantly, workforce training is envisioned as a core part of the Biotech Campus development. A workforce training program in the cell and gene therapy sector is presently underway at Iovance Biotherapeutics at the Navy Yard. Administered by the West Philadelphia Skills Initiative and developed with the Wistar Institute, PIDC, and Iovance, it is currently training an initial cohort of biotechnicians. Participants, who are not required to hold a college degree, were selected from more than 400 applicants. The RFP for the Biotech Campus opportunity required potential development partners to identify plans for a similar training program that will support employment for Southwest Philadelphia residents.

All buildings and core infrastructure in the Biotech Campus will be raised above the base flood elevation and will meet current standards for flood-resistant construction (including ASCE 24). The preferred development team has committed to working proactively with PAID to evaluate applicable resiliency guidelines and to work with the Philadelphia Water Department on stormwater management. The development team is also well-versed in ESG+R practices and has identified strategies to reduce operating carbon, including by selecting low- and zero-impact materials, reducing operating energy per square foot, gradually increasing onsite renewable energy production, and increasing flexibility for renewable procurement through electrification.

This grant will also facilitate the creation of more than two acres of additional greenway space, as a portion of the property will be used to realign a portion of the river trail, which is tied into a 75-mile multi-use trail network.

1.c.i Strategy for Leveraging Resources: Site Characterization

PAID will meet with PADEP to determine if any data gaps exist and will perform any required additional remedial investigation work utilizing their current assessment grant. If additional assessment work is needed, PAID has an active EPA Assessment Grant under BF#96377901 that could be used (funds secured). Any additional assessment work would be completed before June 15, 2024, when the cleanup grant funding is expected to be awarded.

1.c.ii Strategy for Leveraging Resources: Site Remediation

If EPA funds do not cover the full project cost, we would commit to funding the balance through a combination of internal funds and additional grants. PAID does not currently have additional funds secured for remediation of this site, but it does have applications pending with the PA Local Share Account program for a portion of the project cost.

1.c.iii Strategy for Leveraging Resources: Site Reuse

PAID is in negotiations with its preferred development partner for the Biotech Campus, following an RFP process that took place in 2022 and 2023. The development partner has the equity, lender relationships, and vision to make the Biotech Campus project a success. The

\$500M+ investment will be transformative, and activities included under this grant will support the broader development.

In addition, PAID has an application pending with the USDOT NAE program in partnership with two local nonprofits. Part of the scope of this application includes funds to relocate the river trail to the waterfront (including on the subject property) and to create a welcome station nearby. If this application is not successful, PAID will support these community partners in securing funding.

1.c.iv Strategy for Leveraging Resources: Use of Existing Infrastructure

PAID commissioned an infrastructure study of the area in anticipation of the Biotech Campus RFP process. This study, completed in 2019 reported the following:

PAID is currently in discussion with the preferred development partner about additional infrastructure needs to support the proposed development.

Section 2: Community Need and Community Engagement

2.a.i The Community's Need: Need for Funding

Philadelphia's median household income of \$52,649 is below the median income of both Pennsylvania (\$67,587) and the United States (\$69,021). The target area's income levels are even lower than those of Philadelphia as a whole: the subject property's census tract has a median household income of \$30,077, and the median incomes of the other census tracts in the target area are \$34,928 and \$43,654. The unemployment rate is higher in the target area (11%) than in Philadelphia (9%), Pennsylvania (6%), or the U.S. as a whole (5%).³

Given this context, local organizations lack resources and capacity to pursue remediation and redevelopment and must focus instead on pressing social service needs. EPA's resources are crucial to incentivizing remediation and redevelopment of brownfields for uses that benefit the community.

2.a.ii The Community's Need: Threats to Sensitive Populations

This grant will positively impact the health and welfare of sensitive populations by eliminating contaminants that present dangers to human health and facilitating brownfield redevelopment to create new job opportunities and recreational assets for residents, most of whom have low-income levels and face barriers to opportunity. While CEJST does not identify the project site as being within a disadvantaged census tract, this tool uses out-of-date census tract boundaries, incorrectly locating the subject property within the zero-population census tract 9809.

However, the census tract labeled 69 in this platform corresponds with the portion of census tract 391 (which is the correct census tract for the subject property) that has residents. CEJST does identify the area that it labels as census tract 69 as disadvantaged, and the demographic data given for this area in CEJST very closely matches the ACS 2021 five-year estimate data for the subject property's correct census tract.

Cleanup activities will benefit a highly disadvantaged community, where more than half of households receive Supplemental Security Income (12%, compared with 5% nationwide), cash

³ Source: U.S. Census Bureau ACS 2021 5-year estimates.

public assistance (8%, compared with 3% nationwide), and/or food stamps (46%, compared with 11% nationwide), and where more than two-thirds of residents either lack health insurance or receive public health insurance.⁴ Among vulnerable populations, poor environmental and economic conditions severely impact children and older adults, who lack resources or capacity to move elsewhere to reduce exposure to environmental contamination. See the following table for additional data.⁵

	Target Area	Philadelphia	Pennsylvania	United States
People of Color ⁶	96%	66%	25%	41%
Youth (Under 18)	32%	22%	21%	23%
Households with Youth Living with Single Adult	63%	43%	24%	24%
Older Adults (65+)	11%	14%	18%	16%
Limited English Proficiency	1%	11%	4%	8%
People with a Disability ⁷	21%	17%	14%	13%
Less than High School Degree or Equivalent	12%	13%	9%	11%
Households with No Vehicles	46%	29%	11%	8%

The cleanup will particularly benefit the residents of Bartram Village, a 1,000-resident apartment complex owned and operated by the Philadelphia Housing Authority (PHA), and located within half a mile of the property and in census tract 391. Despite its proximity to the river trail and Bartram's Garden, Bartram Village is separated from these amenities by a historic railroad and a roadway that is unfriendly to pedestrians and cyclists. We are working with Bartram's Garden and PHA to improve connections between Bartram Village and riverfront amenities. These residents, who are among the poorest both within the City of Philadelphia and across the country, will see the most benefit, with safe, easy access to Bartram's Garden and the trail.

This project will provide long-overdue investments in a historically and predominantly Black community (87% of residents are Black) that has not received sufficient funding and opportunities. Heavy industrial uses in the area have contributed to substantial environmental justice issues:

Adverse Health Conditions: The target area is characterized by greater than normal adverse health conditions, as it is in the 99th percentile for rates of asthma, the 95th percentile for low life expectancy, and the 89th percentile for rates of disability.⁸

⁴ These metrics are for the target area. The subject property census tract has higher rates across all metrics.

⁵ All data in this table from the U.S. Census Bureau ACS 2021 5-year estimates.

⁶ Defined as racial or ethnic minority by the U.S. Census.

⁷ Noninstitutionalized population only.

⁸ Source: EJ Screening tool using a custom boundary to match the target area. Additional data from the Climate and Economic Justice Screening Tool (CEJST) aligns, including showing that the three census tracts within the target area are all at the 92nd percentile or higher for rates of diabetes. Note that CEJST uses out-of-date census tract

Environmental Hazards: The target area is in the 96th percentile for underground storage tanks, the 94th percentile for wastewater discharge, and the 85th percentile for hazardous waste proximity. It also scores highly in other metrics, including presence of lead paint, particulate matter levels, and proximity to risk management plan facilities and Superfund sites.⁹

Residents living in the target area experience disproportionate and adverse environmental and health impacts, which create accompanying economic challenges. Intrinsic to our organizational mission, we will take an equitable development approach to ensure that this community, with its significant environmental justice concerns, will benefit from improvements that make the community a healthier environment to live and work.

The project will advance environmental justice by remediating degraded riverfront land, reducing the harmful impact air and water pollution has had on its nearby neighbors. The jobs created through the Biotech Campus will bring economic opportunity through well-paying jobs with health insurance benefits that will enable employees and their families to access high quality healthcare. In addition, this project will not displace any residents or businesses and will better connect residents to the rest of the region. EPA funding would create access to safe and affordable active transportation options to daily destinations and to open space. The currently vacant former industrial riverfront will be transformed into an accessible public trail and greenway, further reducing adverse environmental impacts and improving the quality of life for the impacted community.

2.b.i & ii Community Engagement: Project Involvement and Project Roles

We have been actively engaged with the community of Kingsessing for over a decade, beginning with the development of the Lower Schuylkill Master Plan in 2010. Recently, we convened an Advisory Committee made up of community and government partners to develop the RFP and evaluate responses for the Biotech Campus development project. This group actively participated in developer interviews, asking questions of the RFP respondents and providing recommendations about the preferred development partner. As part of the process, Advisory Committee members have met with life sciences experts and have toured life sciences facilities to learn more about the benefits of this sector for their communities, including the potential for family-sustaining jobs.

We also partnered with Southeastern Pennsylvania Transportation Authority (SEPTA) on the *Blossom At Bartram Complete Streets Study*, which developed a 15% design for Complete Streets investments in this area as part of SEPTA's trolley modernization program. With SEPTA, we hosted open houses and public outreach events (in-person and virtual) to gather feedback about potential alternatives. SEPTA received a \$25 million RAISE grant award through the USDOT for this work. PIDC (the entity that manages PAID) supported this application and committed \$3.5M in funds for the project. We also supported the Philadelphia Housing Authority's successful Choice Neighborhoods Implementation grant for the redevelopment of Bartram Village, which is within the same census tract as the subject property. Senior Vice

boundaries, incorrectly locating the subject property within the zero population census tract 9809. However, the census tract labeled 69 corresponds with the portion of census tract 391 that has residents.

⁹ Source: EJ Screening tool using a custom boundary. CEJST also consulted, with similar findings.

President for Real Estate Services, Tom Dalfo, served as a co-chair on the neighborhood task force during the planning process, and PIDC also supported this application and continues to meet regularly with PHA, which led to an opportunity to participate in a public meeting at Bartram Village that more than 250 people attended.

Our remediation of this site will also enable Bartram's Garden to build a new riverfront environmental research center. This structure will act as a welcome center for trail users and . We are also continuing to work closely with the Schuylkill River Development Corporation as it plans additional extensions to the river trail.

Community Partners include:

- Empowered CDC: Val Gay, Consulting Executive Director, val@valgay.com
- Southwest CDC: Donna Henry, Executive Director, donna@southwestcdc.org
- John Bartram Association (Bartram's Garden): Maitreyi Roy, Executive Director, mroy@bartramsgarden.org
- The NESTT Childcare Facility, Sharon Neilson, Project Manager, sneilson@gphainc.org
- City Council District 3: Jamie Gauthier, Councilmember, jamie.gauthier@phila.gov
- Southwest Community Leadership Circle: Sophia Poe, Community Partnerships Manager, John Bartram Association: spoe@bartramsgarden.org
- Schuylkill River Development Corporation, Joe Syrnick, President & CEO joseph.syrnick@srdc.net
- Philadelphia Housing Authority Bartram Village Housing Complex, Andrew Meloney, Director, Choice Neighborhoods Program, andrew.meloney@pha.phila.gov

2.b.iii Incorporating Community Input

Staff meet with individual community partners (6+ organizations) on a quarterly basis to share updates, hear about their projects, and offer technical assistance. A key part of these meetings is to identify opportunities to present to additional community members. For example, we presented to the Southwest Leadership Circle, a group of local leaders convened by Bartram's Garden, in December 2022 and plan to continue this engagement as remediation occurs at the subject property. Members of this group include local small business owners and neighborhood leadership (block captains, ward members, parents, teachers, clergy, and nonprofit executives). This project's focus (both remediation and the eventual reuse) on environmental restoration, community engagement, and workforce development reflects the top priorities identified in the Leadership Circle's ongoing neighborhood outreach.

We also have quarterly coordination meetings with the Philadelphia Housing Authority and the Southeastern Pennsylvania Transportation Authority. These relationships create additional opportunities to connect with community members. In October 2023, staff participated in a community event at the Bartram Village housing complex, located within the target area. This event was attended by more than 250 people. We anticipate similar opportunities as the project progresses.

Section 3: Task Descriptions, Cost Estimates, and Measuring Progress

3.a Proposed Cleanup Plan

The cleanup plan calls for the excavation of a 0.3-acre area of impacted soils to a depth of 4 feet below ground surface, resulting in an estimated volume of 2,500 cubic yards of impacted soil to be removed from the subject property. The proposed excavation volume addresses all areas of identified impact onsite. Post-excavation soil sampling would be conducted to determine if SHS or Site-Specific Standards are attained in accordance with Pennsylvania's Act 2 Land Recycling Program after completion of soil excavation activities. Excavated materials would be disposed of offsite, and the excavation would be backfilled with certified clean fill in accordance with Pennsylvania's Management of Fill regulations.

Topsoil was recommended to be placed above the certified clean fill by Sci Tek in the 2022 Remediation Evaluation. Sci-Tek also recommended that the vegetation and soil near the Site's riverbank be left in place to mitigate slope and fluvial erosion. Periodic inspections of the cap would be required under this alternative and would be documented in a Post Remediation Care Plan. Engineering (capping) and institutional (land use restrictions) controls would be documented in a UEC, as stated above.

3.b.i Description of Tasks/Activities and Outputs: Project Implementation

Task 1: Program Management

- EPA reporting, including quarterly reports, MWBE forms, annual reports, and others.
- Internal progress meetings with PAID to ensure that milestones are met.
- Progress meetings with selected contractor(s) (at least quarterly).

Task 2: Pre-Remediation

- Coordinating with PADEP regarding participation in the Act 2 Cleanup Program.
- Finalizing community involvement plan.
- Finalizing ABCA documents (funded by existing EPA FY20 Assessment Grant).
- Finalizing remediation plan (funded by existing EPA FY20 Assessment Grant).
- Conducting a public solicitation process to select a contractor for remediation.¹⁰
- Reviewing remediation proposals, scoring proposals, and selecting a contractor.
- Securing Board approval and executing contract with remediation contractor.

Task 3: Remediation

- Remediation by the selected contractor, who will execute the work in accordance with the approved cleanup plan, Pennsylvania's Act 2 Program, and all other applicable requirements.

Task 4: Post-Remediation

- Final reports & grant closeout agreement
- Post-remediation monitoring

3.b.ii Description of Tasks/Activities and Outputs: Anticipated Project Schedule

¹⁰ To be determined whether PAID will issue two RFPs (split between advisory services/grant reporting and remediation work) or structure the RFP process to solicit full project teams.

MILESTONE	FY24		FY25				FY26				FY27				FY28			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
TASK 1 – PROGRAM MANAGEMENT																		
EPA Reporting																		
Internal Meetings																		
Meetings with contractors																		
TASK 2 – PRE-REMEDIATION																		
Coordinating with PADEP																		
Finalizing community involvement plan																		
Finalizing ABCA																		
Finalizing remediation plan																		
Preparing and issuing RFP																		
RFP review																		
PAID Board approval of contractor(s)																		
TASK 3 – REMEDIATION																		
Cleanup with PAID oversight																		
TASK 4 – POST-REMEDIATION																		
Final reports & grant closeout agreement																		
Post-remediation monitoring																		

	PAID
	2020 Assessment Grant QEP
	Contractor for FY24 Cleanup Grant (once procured)

3.b.iii Task/Activity Lead:

PIDC (the entity that manages PAID) will be the lead on Task 1, although the QEP will provide support on EPA reporting once selected and under contract. PIDC will also be the lead on Task 2. Verdantas, the QEP contracted through a competitive process under BF-96377901, will finalize the ABCA and the remediation plan under that grant agreement (EPA Cleanup funds will not be used for these subtasks).

Task 3 will be led by the contractor(s) selected through the competitive bid in Task 2. This contractor will have the expertise to conduct the remediation work. PIDC staff will oversee the work and have regular meetings with the contractor. This contractor will also lead Task 4, as the entity that will have completed the remediation work.

3.b.iv Outputs

Outputs include a remediation plan, a community involvement plan, a final Analysis of Brownfield Cleanup Alternatives (ABCA) document, any documents required for the Act 2 process with PA DEP, and administrative records.

3.c Cost Estimates

Task 1: [numbers not provided in draft version]

- PIDC staff costs: X hours at an average rate of \$Y/hour salary = \$Z

- Contractor staff costs for meetings and EPA reporting: X hours at an average rate of \$Y/hour = \$Z

Task 2: Pre-remediation: \$40,000 (estimate from Sci-Tek Consultants, Inc. *Remediation Evaluation for the Former 49th Street Terminal Property*, 2022)

Task 3: Excavation of SVOC and Lead impacted soils, and their disposal, and replacement with clean fill and topsoil: \$1,100,000 (estimate from Sci-Tek Consultants, Inc. *Remediation Evaluation for the Former 49th Street Terminal Property*, 2022)

Task 4: Post-Remediation and PADEP Act 2 completion Final Report for Soil, an Environmental Covenant, and Institutional Controls: \$120,000 (estimate from Sci-Tek Consultants, Inc. *Remediation Evaluation for the Former 49th Street Terminal Property*, 2022)

Categories	Task 1	Task 2	Task 3	Task 4	Total
Personnel	\$X				\$X
Fringe Benefits					
Travel					
Equipment					
Supplies					
Contractual					
Construction	\$X	\$40,000	\$1,100,000	\$120,000	\$1,280,000
Other					
Total Direct Costs	\$X	\$40,000	\$1,100,000	\$120,000	\$X
Indirect Costs					
Total Budget	\$X	\$40,000	\$1,100,000	\$120,000	\$X

3.d Plan to Measure and Evaluate Environmental Progress and Results

We will track short-term progress through regularly scheduled calls/meetings with the QEP and selected contractor. We will measure the project's progress by comparing the proposed remediation timeline with the actual duration required and by working with the QEP and contractor to test sites regularly. PAID will deem the project successful by achieving remediation and closeout within, and ideally ahead of, the grant period. The Lower Schuylkill's future success depends on PAID's capacity to anticipate the remediation timeline accurately to be able to proceed with scheduling future development phases. PAID will evaluate long-term progress in terms of private and institutional dollars subsequently invested in the remediated sites; acres converted for public recreation and amenities; speed of conversion for public use or private taxing purposes; jobs created by new activities occurring on the properties; jobs allocated specifically for Southwest Philadelphia residents; and reduced rates of disease as indicated by future communitywide health assessments.

Section 4: Programmatic Capability and Past Performance

4.a Programmatic Capacity

i. Organizational Structure: PIDC manages and performs all PAID operations and obligations, pursuant to a formal management contract (available upon request). PIDC is the City of Philadelphia's economic development arm, tasked with administering financial and real estate products and services to spur economic growth throughout the city. Over 65 years, PIDC has managed more than \$19B in financing, 3,3500 acres of land sales, and 3M SF of leased space, which have leveraged tens of billions of dollars in total investment and assisted in retaining and creating hundreds of thousands of jobs in Philadelphia. PIDC's 58-person staff are experienced in managing federal grants (e.g. EPA, HUD, EDA, DOD), as well as state and city grants (e.g. Redevelopment Assistance Capital Program, ISRP, Cultural and Commercial Corridors).

ii. Description of Key Staff: The cleanup program will be overseen by PIDC's Senior Vice President for Real Estate Services Tom Dalfo, an executive with more than two decades of experience involving industrial land acquisition and repositioning in Philadelphia. Julia Cohen, a project manager and planner with more than five years of relevant experience, will serve as the project director and day-to-day point of contact. She will also coordinate with community partners throughout the process. Monica Trudeau, PE, Vice President of Project Management and Engineering will manage the RFP process, and [staff member name] will manage EPA drawdowns and will provide EPA reporting support.

iii. Acquiring Additional Resources: Staff will conduct a competitive bid process to select the consultant. Our in-house civil engineer (Monica Trudeau) will conduct the solicitation and provide oversight throughout the remediation process. We will ensure a competitive process that complies with EPA requirements as we have successfully done in the past.

4.b Past Performance and Accomplishments (i: Current and Previous EPA Brownfields Grants)

Accomplishments: Under [contract # for 2016 and 2020 award], PAID provided awards to two entities: Impact Services and the University of Pennsylvania. The RLF loan and grant to Impact Services funded remediation at a 5-story, 140,000 SF former carpet mill in the Kensington neighborhood of Philadelphia. The sponsor provided \$130,000 in equity for remediation and has since executed a \$25.8M redevelopment of the property into 48 units of affordable family housing, which began accepting tenants in March 2023, and a 10,000 SF commercial condo, with Impact Services taking part of the space. The RLF funds have also leveraged \$3.4M in predevelopment & renovation funding for a currently vacant portion of the site, which will be redeveloped for commercial use in a future phase.

The award to the University of Pennsylvania supported Pennovation Works, a 23.1 acre innovation, technology, and start-up incubation campus located at a former DuPont site. Under this RLF grant agreement, PAID provided a loan and grant in 2019 for the remediation of the third building on the campus, the 74,000 SF multi-tenant Pennovation Lab, which opened in 2021. The Pennovation Works campus now has over 70 tenant companies in industries as diverse as detection dog training to plant-based therapeutic development, and over 400 entrepreneurs/employees are located at the site. RLF funds have leveraged over \$70M in additional funding for the Center and Lab, and an additional \$365M, 445,000 SF life sciences building will begin construction in 2023 with a planned opening in 2025.

The 2023 RLF award (contract #X) went into effect on October 1, 2023. PAID will use this grant to re-capitalize its brownfield revolving loan fund to continue to support remediation of sites

across Philadelphia, particularly in economically disadvantaged communities. Cooperative agreement funding will be used to cover costs associated with remediation, and technical support, and programmatic costs. PAID will continue to coordinate cooperative agreements, with technical assistance and oversight provided by a qualified environmental professional (QEP). PAID's RLF targets owners that need low-cost, flexible financing to remediate their properties. Intra-governmental loans are also available, as brownfields may be owned by governmental entities. Primary consideration will be given to projects located in economically disadvantaged census tracts per the Climate & Economic Justice Screening Tool (CEJST). In addition to providing loans, PAID will offer all nonprofits a subgrant of up to 50% of the total amount requested, up to a maximum \$500,000 subgrant. For example, if a nonprofit has \$350,000 in eligible costs, PAID will provide a \$175,000 loan and \$175,000 subgrant.

PAID expects to make 1-2 loans and 1-2 subgrants using the \$511,500 allocated to this cost. Representative sample projects included in the supplemental request, which do not represent commitments to the specific projects, include remediations of former auto repair shops, dry cleaners, and industrial sites into various community-supporting projects like health centers and affordable housing.

PAID has an active Brownfields Assessment Grant (BF-96377901) that has been extended to end September 30, 2024. We have procured a QEP through a competitive bid process, working closely with our EPA contract to ensure compliance with all EPA requirements. So far, two sites have been assessed (both within the past six months), and several more are in the pipeline.

All outputs and outcomes for all of these grants are accurately reflected in the Assessment, Cleanup and Redevelopment Exchange System (ACRES).

Compliance with Grant Requirements: After initial delays with the 2020 Brownfields Assessment Grant, PIDC staff regrouped to address issues with contracting and reporting, due in part to delays due to the pandemic and limited staff capacity that has since been addressed. Julia Cohen, the Project Director for this submission, was hired in part to manage this assessment grant. She has coordinated closely with the EPA contact for this grant (Christian Smith) to keep him updated on progress. The grant period for this award is October 1, 2020 through September 30, 2024 (after being extended by one year).

Threshold Criteria Responses

Criterion 1: Statement of Applicant Eligibility

Philadelphia Authority for Industrial Development (PAID) is a public authority incorporated by the City of Philadelphia in 1967, authorized under the Economic Development Finance Law of the Commonwealth of Pennsylvania. (P.L. 251, August 23, 1967, 73 PA.C.S.A. Section 371 et seq., as amended). As such it meets the definition of a General Purpose Unit of Local Government. PAID's Articles of Incorporation, by-laws, and founding ordinance are included in Appendix X. The day-to-day affairs of PAID are managed by PIDC (Lead Organization and Management Company for Applicant) under the direction and governance of a five-member Board of Directors appointed by the Mayor of Philadelphia. PIDC is the City of Philadelphia's public-private economic development corporation.

Criterion 2: Previously Awarded Cleanup Grants

The subject property (1700 S. 49th Street) has not received funding from a previously awarded EPA Brownfields Cleanup Grant.

Criterion 3: Expenditure of Existing Multipurpose Grant Funds

PAID does not have an open EPA Brownfields Multipurpose Grant.

Criterion 4: Site Ownership

The applicant, which is Philadelphia Authority for Industrial Development (PAID), is the owner of the subject property (1700 S. 49th Street) and will retain ownership for the duration of the time in which the Brownfield Cleanup Grant funds would be disbursed for the cleanup of the site. Proof of ownership is included in Appendix X.

Criterion 5: Basic Site Information

The subject property is 1700 S. 49th Street, Philadelphia, PA 19143. It has sometimes been called "49th Street Terminal." Once remediated, the property will be part of two revitalization projects: 1) the Lower Schuylkill Biotech Campus, a large-scale economic development and job generating project; and 2) the Schuylkill River Trail, a critical greenway that will connect underserved communities to the rest of the city.

Criterion 6: Status and History of Contamination at the Site

6.a: The property is contaminated by petroleum.

6.b: The property was first developed prior to 1923 as a sand and gravel wharf. It was an oil terminal from circa 1942 to 2006. Former railroad spurs served the site. The property was labeled as the "Water Terminal Fuel Oil Co.", "Franco Coal Co" and "Water Terminal Fuel Oil Sta" on historical Sanborn Fire Insurance maps and as "Major Petroleum Company" in 1975 to 2005 Sanborn maps. Six large, circular bulk fuel storage aboveground storage tanks (ASTs) and more than four accessory ASTs appear onsite in historical photos, but all storage tanks were removed by a previous owner. The property is currently not being used.

Sci-Tek Consultants prepared a Remediation Evaluation of the site in 2022. This report indicates that a non-operational fuel transfer system and canopy and a corrugated metal storage trailer structure are located in the western corner of the subject property by the gravel entrance

driveway. An old river pier and bulkhead located off the bank of the Schuylkill River at the eastern edge of the site were also observed by Sci-Tek and described in this report.

6.c: Constituents of concern include semi-volatile organic compounds (SVOCs) and lead. Some residual subsurface contamination remains onsite.

6.d: The property became contaminated due to its historic uses as an oil terminal. Urban Engineer's *Site Characterization Report* documented site characterization activities conducted at the site and an adjacent one (1631 S. 49th Street) during the period from 1992 through 2006. Select soil samples were reported to contain PAHs concentrations in excess of PADEP Residential (R) and Non-Residential (NR) Direct Contact (DC) and Used Aquifer R and NR Soil to Groundwater (SGW) Statewide Health Standards (SHS). Concentrations of lead also exceeded the R DC and R/NR SGW SHS in some samples obtained at the Site. PAHs exceeding their respective standards include anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, and naphthalene. Benzene exceeded the R SGW SHS in one sample.

Boring logs prepared during tank closure activities document the presence of petroleum odors, elevated photoionization detector (PID) readings, and apparent petroleum staining on aggregate and coal fragments. Based on a 4-foot vertical depth of suspected impacts, the estimated volume of impacted material at the Site is 2,500 cubic yards.

Criterion 7: Brownfield Site Determination

The subject property fits the CERCLA definition of a brownfield, given as "...real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant." It is a petroleum-contaminated site, and it is listed by Environmental Data Resources, Inc. (EDR) on the US Brownfields database as the "49th Street Terminal, 1700 S. 49th Street, Philadelphia, PA 19143."

The applicant affirms the following about the subject property:

- It is not listed or proposed for listing on the National Priorities List.
- It is not subject to unilateral administrative orders, court orders, administrative orders on consent, or judicial consent decrees issued to or entered into by parties under CERCLA.
- It is not subject to the jurisdiction, custody, or control of the U.S. government.

In addition, the applicant affirms the following (related to petroleum site eligibility):

- There is no viable responsible party.
- The site will not be assessed, investigated, or cleaned up by a person that is potentially liable for cleaning up the site.
- The site is not subject to a corrective action order under the Resource Conservation and Recovery Act (RCRA) § 9003(h).

Criterion 8: Environmental Assessment

The applicant is using the following to meet the requirement for a written ASTM E1903-19 or equivalent Phase II environmental site assessment report:

- *Remedial Investigation Report/Cleanup Plan: Former National Heat & Power and 49th & Botanic Avenue Sites.* Prepared by Duffield Associates (now Verdantas). Dated April 18, 2013, and approved by PA DEP July 1, 2013 as a Remedial Investigation Report and Cleanup Plan as defined in Chapter 3 of the Land Recycling and Environmental Remediation Standards Act (Act 2). The site has not been occupied since this report was prepared and approved by PA DEP.

Additional documents include:

- *Site Characterization Report: National Heat & Power and 49th St. Terminal Properties. 49th Street and Botanic Ave.* Prepared by Urban Engineers, Inc. for the City of Philadelphia Commerce Department. Dated September 2006 and approved by PA DEP on January 10, 2007.
- *Remediation Implementation Plan: National Heat and Power and 49th Street Terminal Site.* Prepared by Malcolm Pirnie, Inc. Revised December 31, 2010.
- *Remediation Evaluation for the Former 49th Street Terminal Property.* Prepared by Sci-Tek Consultants, Inc. Revised June 22, 2022.

PAID will meet with PA DEP to determine if any data gaps exist and will perform any required additional remedial investigation work utilizing their current assessment grant. Any additional assessment work would be completed before June 15, 2024, when the cleanup grant funding is expected to be awarded.

Criterion 9: Site Characterization

Please see the letter from PA DEP, attached as Appendix TBD. Section B applies. The applicant is not a State or Tribal Environmental Authority, and the site is eligible to be enrolled in a voluntary response program. This letter affirms the following:

- The letter was prepared for a FY24 Cleanup Grant application and not a previously submitted application; and
- The site is eligible to be enrolled in the state or Tribal voluntary response program; AND the site is enrolled, or intends to be enrolled, in the state or Tribal voluntary response program; OR the site is not eligible to be enrolled in the state or Tribal voluntary response program.
- There is a sufficient level of site characterization from the environmental site assessment performed to date for the remediation work to begin on the site; OR additional assessment is needed to sufficiently characterize the site for the remediation work to begin, but there will be a sufficient level of site characterization from the environmental site assessment performed by June 15, 2024, for the remediation work to begin on the site.

Criterion 10: Enforcement or Other Actions

There are no known ongoing or anticipated environmental enforcement or other actions related to the site for which Brownfields Grant funding is sought.

Criterion 11: Sites Requiring a Property-Specific Determination

The site does not require a property-specific determination. The property was approved for assessment under a 2003 EPA grant, and none of the following apply:

- Properties subject to planned or ongoing removal actions under CERCLA;
- Properties with facilities that have been issued or entered into a unilateral administrative order, a court order, an administrative order on consent, or judicial consent decree or to which a permit has been issued by the United States or an authorized state under the Resource Conservation and Recovery Act (RCRA), the Federal Water Pollution Control Act (FWPCA), the Toxic Substances Control Act (TSCA), or the Safe Drinking Water Act (SDWA);
- Properties with facilities subject to RCRA corrective action (§ 3004(u) or § 3008(h)) to which a corrective action permit or order has been issued or modified to require the implementation of corrective measures;
- Properties that are land disposal units that have submitted a RCRA closure notification or that are subject to closure requirements specified in a closure plan or permit;
- Properties where there has been a release of polychlorinated biphenyls (PCBs) and all, or part, of the property is subject to TSCA remediation; and
- Properties that include facilities receiving monies for cleanup from the Leaking Underground Storage Tank (LUST) Trust Fund (see the Information on Sites Eligible for Brownfields Funding under CERCLA § 104(k) for a definition of LUST Trust Fund sites).

Criterion 12: Threshold Criteria Related to CERCLA/Petroleum Liability

To be included in the final version. If any questions about this item during the public comment period, please contact Julia Cohen at jcohen@pidcphila.com or 215-496-8138.

Criterion 13: Cleanup Authority and Oversight Structure

13.a: We will meet regularly with the contractor(s) selected through an RFP process to oversee the cleanup at the site. We plan to enroll in a state or Tribal response program by achieving PADEP Act 2 Statewide Health Standards or Site Specific Standard environmental quality under the PADEP.

13.b: The properties adjacent to the site are all owned by PAID and are currently vacant/unused. The applicant does not anticipate needing to acquire access to any additional adjacent properties as part of the cleanup process.

Criterion 14: Community Notification Materials

14.a: The draft Analysis of Brownfields Cleanup Alternatives (ABCA) is included on page 23 of this draft submission.

14.b: The community notification ad is included as Appendix X. This includes a publication in the Philadelphia Inquirer (October 27 and 28, 2023), social media posts [DATES], a posting on PIDC's website (beginning on October 26, 2023), and individual emails to community partners.

14.c: The applicant held a virtual public meeting from 4:00-5:00 pm on Wednesday, November 8, 2023. Comments received, PAID's responses, meeting notes, meeting slides, and a meeting participant list will be attached as Appendix X.

14.d: Please refer to Appendices X, Y, and Z.

Criterion 15: Contractors and Named Subrecipients

Not applicable. A contractor has not been procured for the work outlined in this submission and PAID has not identified a subrecipient for this application.

**ANALYSIS OF BROWNFIELDS CLEANUP ALTERNATIVES –
PRELIMINARY EVALUATION**

PREPARED BY VERDANTAS LLC

OCTOBER 23, 2023

ANALYSIS OF BROWNFIELDS CLEANUP ALTERNATIVES – PRELIMINARY EVALUATION

**FORMER 49TH STREET TERMINAL
1700 SOUTH 49TH STREET
PHILADELPHIA, PENNSYLVANIA 19143**

October 23, 2023

Prepared For:

Philadelphia Authority for Industrial Development/
Philadelphia Industrial Development Corporation
1500 Market Street, Suite 3500 West
Philadelphia, PA 19102

Prepared By:

Verdantas LLC
211 N. 13th Street
Philadelphia, PA 19107

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FIGURES

FIGURE 1	Site Location Map
FIGURE 2	Estimated Area of Impact
FIGURE 3	Site Structures

APPENDIX

APPENDIX A	Sci Tek 49 th Street Terminal Remedial Evaluation – June 2022
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1.0 INTRODUCTION

Verdantas LLC (Verdantas) has prepared this Analysis of Brownfields Cleanup Alternatives – Preliminary Evaluation (ABCA) on behalf of the Philadelphia Industrial Development Corporation (PIDC) to evaluate remedial alternatives proposed for the former 49th Street Terminal located at 1700 South 49th Street, Philadelphia, Philadelphia County, Pennsylvania (the “Site”), in support of future redevelopment. This ABCA has been prepared in accordance with the general provisions contained in the United States Environmental Protection Agency (USEPA) ABCA template for cleanup grant proposals. This ABCA was prepared to support the application for a USEPA Brownfields Cleanup Grant for the Fiscal Year 2024.

2.0 SITE BACKGROUND AND CONDITIONS

2.1 SITE LOCATION AND DESCRIPTION

The Site was historically known as the 49th Street Terminal and is located along the western shore of the Schuylkill River. The Site is owned by the Philadelphia Authority for Industrial Development (PAID) and identified as Tax Parcel 88-4-217200. Approximately one acre in size, the Site is bounded to the north by 49th Street, to the south by industrial property, to the east by the Schuylkill River, and to the west by Botanic Avenue, which is also known as the South Schuylkill River Recreational Trail and Bartram's Mile. The Site is currently vacant land, overgrown with brush and trees. The City of Philadelphia identifies the Site as OPA Account #885916780 with an address of 1700 S 49th Street. The parcel is zoned as I-2 for medium industrial site use, according to the Philadelphia Department Licensing and Inspections (L&I). The Site location is shown on **Figure 1**.

2.2 SITE HISTORY AND USES

Information pertaining to Site history and uses was obtained from the following reports:

- Site Characterization Report (SCR) prepared by Urban Engineers, Inc. (Urban), dated September 2006, approved by the Pennsylvania Department of Environmental Protection (PADEP) in January 2007;
- Remedial Investigation (RI)/Cleanup Plan (CP) prepared by Duffield Associates (now Verdantas LLC [Verdantas]), dated April 2013;
- 49th Street Terminal Remedial Evaluation (RE) prepared by Sci-Tek, dated June 2022 (**Appendix A**).

According to Sci-Tek, the Site was developed prior to 1923 as a sand and gravel wharf and was the location of an oil terminal from approximately 1942 to 2006. Former railroad spurs were located onsite. The Site was variously labeled as the "Water Terminal Fuel Oil Co.", "Franco Coal Co" and "Water Terminal Fuel Oil Sta" on historical Sanborn Fire Insurance maps, and as "Major Petroleum Company" in 1975 to 2005 Sanborn maps. Sci-Tek reported that, based on their review of historical aerial photographs, six large, circular bulk fuel storage aboveground storage tanks (ASTs) and more than four accessory ASTs were previously located onsite. All storage tanks were removed from the Site by a previous owner.

Sci-Tek documented that the Site is also listed in the Environmental Data Resources, Inc. (EDR) United States (US) Brownfields database. The former Site owner, 49th Street Terminals, Inc. received a \$100,000 dollar assessment grant from the EPA's Brownfields Assessment Cooperative Agreement in 2006.

Sci-Tek documented that a non-operational fuel transfer system and canopy and a corrugated metal storage trailer structure were located onsite in their RE dated June 2022. These structures were observed in the western corner of the Site by the gravel

entrance driveway. An old river pier and bulkhead were also observed by Sci-Tek, which were located off the bank of the Schuylkill River at the eastern edge of the Site.

Site constituents of concern (COCs) include semi-volatile organic compounds (SVOCs) and lead. Some residual subsurface contamination remains onsite.

2.2.1 Forecasted Climate

Based on reviews of the Findings of the U.S. Global Change Research Program Climate Science Special Report (2017) and the State Climate Summary for Pennsylvania (2022), potential future climate change risks relate to increases in temperature and the frequency of extreme precipitation events. Based on the location of the Site near the Schuylkill River, it is likely that extreme precipitation events that lead to flooding could pose the greatest risk to the selected environmental response action.

Global annually averaged surface air temperature has increased by about 1.8°F (1.0°C) over the last 115 years (1901–2016). These trends are expected to continue. Heatwaves have become more frequent in the United States since the 1960s, while extreme cold temperatures and cold waves are less frequent (Findings of the U.S. Global Change Research Program Climate Science Special Report, 2017).

According to the State Climate Summary for Pennsylvania (2022), since the beginning of the 20th century, temperatures in Pennsylvania have risen almost 2°F, and temperatures in the 2000s have been higher than in any other historical period. Large temperature increases are possible for the future if greenhouse gas concentrations continue to increase. Even under a lower emissions scenario, annual average temperatures are projected to most likely exceed historical record levels by the middle of this century. Extreme heat is a particular concern for Philadelphia and other urban areas where the urban heat island effect increases summer temperatures. High temperatures combined with high humidity can create dangerous heat index values.

The number of extreme precipitation events in Pennsylvania has increased which can result in more frequent and devastating flooding. Winter and spring precipitation is also projected to increase in Pennsylvania. Heavier precipitation and higher temperatures causing earlier snowmelt also increase the risk of springtime flooding (State Climate Summary for Pennsylvania, 2022).

In addition, Pennsylvania's coastline runs along the Delaware Estuary and increasing temperatures raise concerns for sea level rise in these coastal areas. Even if storm patterns remain the same, sea level rise will increase the frequency, extent, and severity of coastal flooding. This is a particularly serious risk for Philadelphia, where the observed sea level rise over the past century has exceeded the global average. Sea level rise has caused an increase in tidal floods associated with nuisance-level impacts. These events can damage infrastructure, cause road closures, and overwhelm storm drains. As sea level has risen along the Pennsylvania coastline, the number of tidal flooding days (all days exceeding the nuisance level threshold) has also increased (State Climate Summary for Pennsylvania, 2022).

Development of the Fifth National Climate Assessment (NCA5) is currently underway, with anticipated delivery in 2023. This content will be updated as new information becomes available.

2.2.2 Federal Emergency Management Association (FEMA) Flood Zone

The Site is shown on FEMA Flood Insurance Map 4207570187H in Zone AE of a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood (FEMA, 2020).

2.3 PRIOR SITE CHARACTERIZATION AND REMEDIAL ACTIVITIES

Several investigations have been conducted at the Site and adjoining National Heat and Power property (NHP).

The following is a summary documents reviewed for this ABCA:

- 2006 Aboveground Storage Tank (AST) Summary Report prepared by Environmental Maintenance Company (EMC).
- 2006 AST Confirmatory Sampling Report (AST Report) prepared by Malcolm Pirnie and appended to the 2006 SCR.
- 2006 Geophysical Survey Report prepared by TPI Environmental and appended to the 2006 SCR.
- 2013 RIR/CP prepared by Duffield, now Verdantas.
- 49th Street Terminal Remedial Evaluation (RE) prepared by Sci-Tek, dated June 2022 (**Appendix A**).

Removal and closure of 17 aboveground storage tanks at the Site and adjoining NHP property are documented in EMC's AST report. Eight ASTs, designated ASTs 1 through 8, were located at the 49th Street Terminal. At least two of the ASTs reportedly contained heating oil. The EMC AST report describes the recovery of petroleum from the tanks and associated piping, cleaning of the AST systems, and removal and disposal of tanks and piping for recycling.

Urban's SCR documented site characterization activities conducted at the Site and NHP during the period from 1992 through 2006. The Site is identified as Area of Concern (AOC) 3 in Urban's SCR, which was approved by the PADEP in January 2007. Soil samples collected to support tank closure activities at the Site were obtained from 3 and 5 feet below ground surface (bgs). Select soil samples were reported to contain PAHs concentrations in excess of PADEP Residential (R) and Non-Residential (NR) Direct

Contact (DC) and Used Aquifer R and NR Soil to Groundwater (SGW) Statewide Health Standards (SHS). Concentrations of lead also exceeded the R DC and R/NR SGW SHS in some samples obtained at the Site. PAHs exceeding their respective standards include anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, and naphthalene. Benzene exceeded the R SGW SHS in one sample. Tabulated sampling results are presented in Sci-Teks's RE dated June 2022 (**Appendix A**).

Boring logs prepared during tank closure activities document the presence of petroleum odors, elevated photoionization detector (PID) readings, and apparent petroleum-staining on aggregate and coal fragments. Based on a 4-foot vertical depth of suspected impacts, the estimated volume of impacted material at the Site is 2,500 cubic yards. The approximate area of impacted soil is shown on **Figure 2**.

2.4 RISK ASSESSMENT AND CLEANUP PLAN

Duffield Associates conducted a preliminary baseline risk assessment for soils using the data presented in the 2006 SCR. However, it was assumed that the impacted area at the Site would be capped or soil removal would occur. Data for soil samples obtained from Site areas where the R/NR DC and R/NR SGW SHS were exceeded were not included in the statistical evaluation conducted as part of the preliminary risk assessment.

The Cleanup Plan contained in Duffield's 2013 RI/CP for soil proposed excavation and off-site disposal of impacted soil, along with engineering and institutional controls (if required), for the impacted area of the Site (**Figure 2**), if funding was available. Post-excavation soil sampling and attainment of Site-Specific Standards using pathway elimination was proposed in conjunction with excavation and offsite disposal. In the event that funding was not available, concentrations of regulated substances of concern in soils were proposed to be addressed using a Site-Specific Standard via pathway elimination. At the time of implementing the CP [during the period of 2014 - 2015], funding was not available to address environmental conditions at the Site.

A few structures were noted onsite in Sci-Tek's RE, as shown on **Figure 3**. Removal of any structures still present was recommended in Duffield's RI/CP to assess environmental conditions of the underlying soils. Removal of asbestos-containing materials (ACM), if present, prior to building demolition is required by Federal and State regulations. After structure removals, field screening of soils for environmental impact was recommended. The Cleanup Plan presents a sampling and analysis strategy for these areas should field screening indicate further assessment is necessary.

3.0 PROJECT GOALS

Site redevelopment is part of a master planning effort for the Lower Schuylkill River by the City of Philadelphia that envisions re-energizing a 4,000-acre industrial area. According to Sci-Tek's RE, PIDC intends to develop the Site as parkland space, a recreational trail, and a life sciences campus. Remediation will eliminate potential pathways to receptors at the Site.

3.1 APPLICABLE REGULATIONS AND CLEANUP STANDARDS

Site remediation is regulated by the following agencies and associated standards:

PADEP

25 PA Code §250 Land Recycling and Environmental Standards Remediation Act, 1995, (Act 2 Land Recycling Program).

Remediation standards for soil and groundwater including Pennsylvania SHS, the Site-Specific Standard, the Background Standard or the Special Industrial Area Standard, most recently updated in 2023.

Land Recycling Program Technical Guidance Manual for Vapor Intrusion into Buildings from Groundwater and Soil under Act 2, 2021.

US EPA

US EPA Toxic Control Substance Act (TSCA) Subchapter II Asbestos Hazard Emergency Response Act (AHERA) (15 U.S.C. §2641-2656) and the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) of 1990.

City of Philadelphia

Asbestos Control Regulations (ACR) as promulgated under Title 6, Health Code, of the Philadelphia Code, Chapter 6-600, Asbestos Projects, adopted June 26, 1986, amended 1989; 1993; 2009; 2015.

3.2 CLEANUP ALTERNATIVES

Three remedial alternatives were considered to address the impacted area at the Site. Associated benefits and disadvantages of each alternative are summarized below:

Alternative No.1: No Action

A 0.3-acre area of impacted soil at the Site was documented in the 2013 RIR/CP. Under this alternative, the Site would remain in its current condition. There are no remedial costs associated with Alternative No. 1. Current potential risks to human health and the

environment would not be remediated. The Site would not be suitable for the proposed PIDC redevelopment and remain under-used, depressing its value.

Alternative No. 2: Capping in Accordance with Applicable Regulations

This alternative addresses covering impacted soils at the Site. Capping would provide an engineering control that eliminates the direct contact pathway to potential receptors. Act 2 release of liability would be pursued through attainment of Site-Specific Standards via pathway elimination. Alternative No. 2 saves both time and costs when compared to Alternative No. 3, below, because excavation of impacted soils is not proposed. The disadvantage of this alternative is that impacted soils remain onsite. Periodic inspections of the cap would be required under this alternative and would be documented in a Post Remediation Care Plan. Engineering controls for cap placement and institutional controls stipulating land use restrictions to prevent removal or damage to the cap would be documented in a Uniform Environmental Covenant (UEC).

Alternative No. 3: Soil Excavation and Capping

Excavation of the 0.3-acre area of impacted soils to a depth of 4 feet bgs would be conducted under Alternative No. 3, resulting in an estimated volume of 2,500 cubic yards of impacted soil to be removed from the Site. The proposed excavation volume addresses all areas of identified impact onsite. Post-excavation soil sampling would be conducted to determine if SHS or Site-Specific Standards are attained in accordance with Pennsylvania's Act 2 Land Recycling Program after completion of soil excavation activities. Excavated materials would be disposed of offsite, and the excavation would be backfilled with certified clean fill in accordance with Pennsylvania's Management of Fill regulations. Topsoil was recommended to be placed above the certified clean fill by Sci Tek in the 2022 RE. Sci-Tek also recommended that the vegetation and soil near the Site's riverbank be left in place to mitigate slope and fluvial erosion. Periodic inspections of the cap would be required under this alternative and would be documented in a Post Remediation Care Plan. Engineering (capping) and institutional (land use restrictions) controls would be documented in a UEC, as stated above.

Costs of Alternative No. 3 are presented in Sci-Tek's RE (**Appendix A.**) and reproduced herein:

- Pre-remediation = \$40,000
- Excavation of SVOC and Lead impacted soils, and their disposal, and replacement with clean fill and topsoil = \$1,100,000
- Post-Remediation and PADEP Act 2 completion Final Report for Soil, an Environmental Covenant, and Institutional Controls = \$120,000

The estimated total is \$1,260,000.

3.2.1 Effectiveness

Alternative No. 1: No Action

Under this alternative, impacts at the Site remain, and exposure pathways to receptors are potentially complete. Implementation of this alternative could be an impediment to future construction or improvements, or other beneficial reuses at the Site.

Alternative No. 2: Capping

Capping the area of impacted soils would be effective in preventing direct contact to constituents of concern detected in Site soils. Under Alternative No. 2, an institutional control in the form of a land use restriction would be recorded in a UEC for the Site to prevent removal or damage to cap. Periodic inspections of the cap would be required under this alternative and would be documented in a Post Remediation Care Plan.

Alternative No. 3: Soil Excavation and Capping

This alternative is considered most advantageous to Site redevelopment because impacted soils would be removed from the Site, eliminating potentially complete pathways to receptors. Demonstration of attainment of Act 2 standards and resulting PADEP release of liability would increase the value of the Site; Site redevelopment could result in employment opportunities for the community. The disadvantages to this alternative include additional costs and the time involved in completing the remediation. Periodic inspections of the cap would be required under this alternative and would be documented in a Post Remediation Care Plan. Engineering (capping) and institutional (land use restrictions) controls would be documented in a UEC, as stated above.

3.2.2 Implementability

Alternative No. 1: No Action

This is the approach currently implemented at the Site.

Alternative No. 2: Capping

Cap construction is considered implementable. Long-term monitoring and maintenance will be required for capped/covered areas and detailed in a Post-Remediation Care Plan.

Alternative No. 3: Soil Excavation and Capping

This approach requires more planning and coordination than Alternatives 1 and 2. Excavation activities may be complicated by the shallow groundwater table at the Site. Planning for soil removal will have to include potential dewatering measures. Dust suppression and monitoring could also be required. Long-term monitoring and

maintenance will be required for capped/covered areas and detailed in a Post-Remediation Care Plan.

3.2.3 Recommended Alternative

Based on this evaluation, the recommended cleanup alternative is Alternative No. 3. This alternative addresses all identified soil impacts at the Site and provides the best strategy to optimize redevelopment opportunities and community benefits. Additional delineation, monitoring, and costs may be requested by the PADEP, depending results from any additional sampling conducted, including beneath any demolished structures.

3.2.3.1 Green and Sustainable Remediation Measures for Selected Alternative

Green and sustainable remediation (GSR) measures that could potentially be employed during implementation of the selected alternative include:

- Removal of contaminants, reducing risk to the community.
- Prohibition of unnecessary idling of field machinery during remedial activities.
- Onsite reuse of unimpacted soils to reduce unnecessary transportation and landfilling.
- Beneficial reuse of the Site, providing value to the community.

4.0 REFERENCES

49th Street Terminal Remedial Evaluation, Sci-Tek, June 2022

Aboveground Storage Tank Confirmatory Sampling Report, Malcolm Pirnie, 2006

Aboveground Storage Tank Summary Report, Environmental Maintenance Company, 2006

Geophysical Survey Report, TPI Environmental, 2006

Remedial Investigation/Cleanup Plan, Duffield Associates, April 2013

<https://statesummaries.ncics.org/chapter/pa/>

<https://science2017.globalchange.gov/>

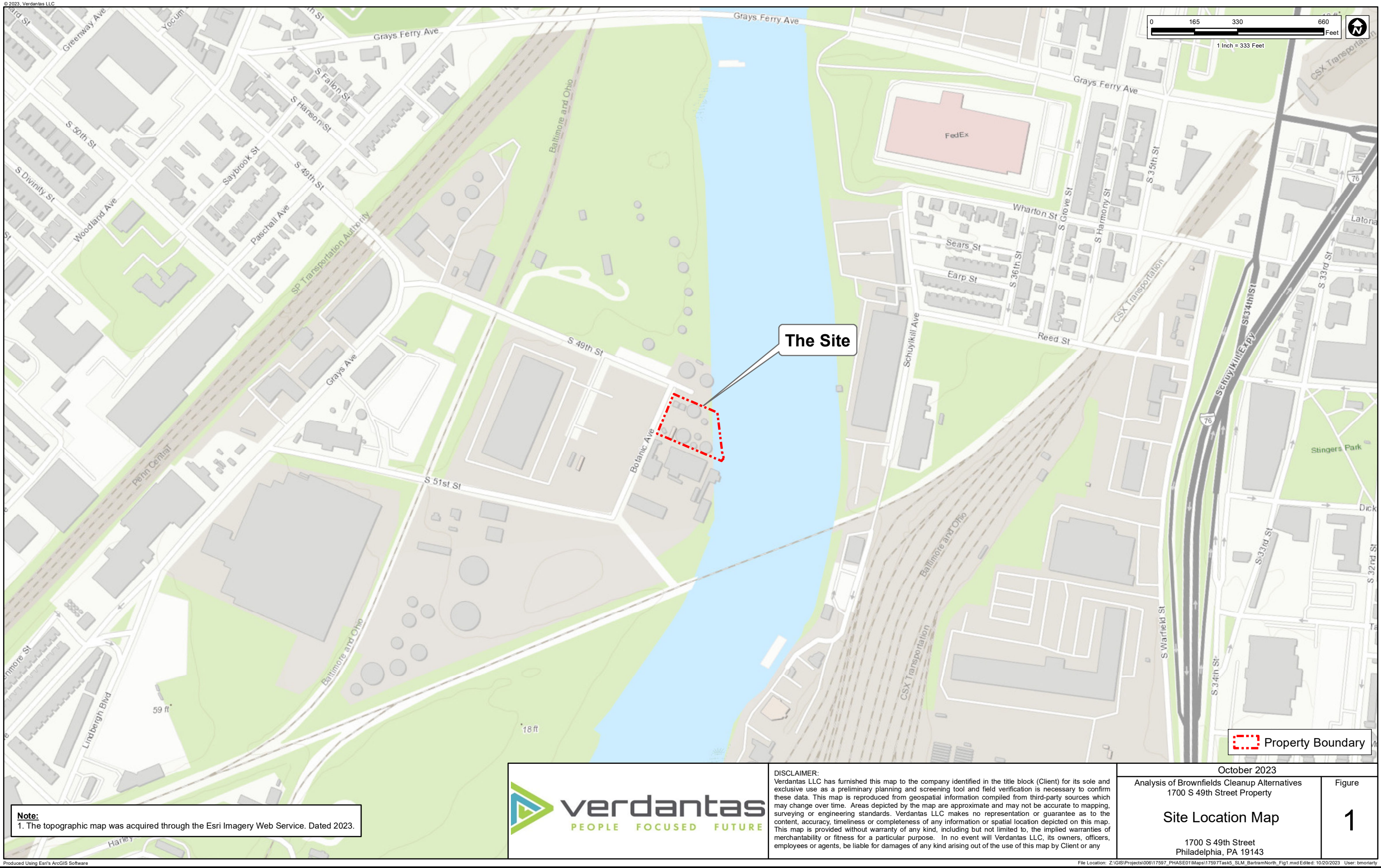
<https://www.fema.gov/flood-maps/national-flood-hazard-layer>

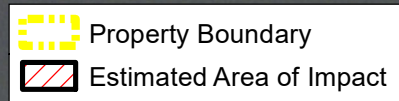
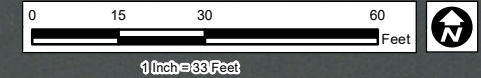
<https://www.fema.gov/flood-maps>

Urban Engineers Site Characterization Report, September 2006

FIGURES

FIGURE 1	Site Location Map
FIGURE 2	Estimated Area of Impact
FIGURE 3	Site Structures



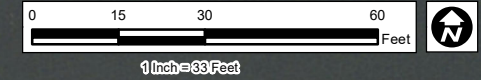



Note:
1. The Estimated Area of Impact was drawn using Duffield Associates' Figure 7 - Clean-Up Plan for the National Heat and Power and 49th Street Terminal Site, dated 18 February 2013.
2. The aerial photo was acquired through the ESRI Imagery Web Service. Aerial photography dated 2018.
3. S.F. - Square Feet
AC. - Acres



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October 2023		
Analysis of Brownfields Cleanup Alternatives 1700 S 49th Street Property		Figure
Estimated Area of Impact		2
1700 S 49th Street Philadelphia, PA 19143		



 Property Boundary

Note:
1. The aerial photo was acquired through the Esri Imagery Web Service.
Aerial photography dated 2018.



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October 2023		
Analysis of Brownfields Cleanup Alternatives 1700 S 49th Street Property		Figure
Site Layout - Aerial		3
1700 S 49th Street Philadelphia, PA 19143		

APPENDIX A

SCI TEK 49TH STREET TERMINAL REMEDIAL EVALUATION – JUNE 2022



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Pittsburgh • Philadelphia • Washington, PA

Philadelphia

1880 JFK Boulevard, Suite 600
Philadelphia, PA 19103
Phone: 267.314.5385
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January 12, 2023

Angie Frederickson, Esquire
Vice President of Real Estate Services
Philadelphia Industrial Development Corporation
1500 Market Street
Suite 3500 West
Philadelphia, PA 19102

**RE: Remediation Evaluation for the Former 49th Street Terminal Property
1700 South 49th Street
Philadelphia, PA 19143
Project #22-1093**

Dear Ms. Frederickson,

I am the author of the attached report entitled, "*49th Street Terminal Remediation Evaluation, Bartram North Property, 1700 South 49th Street, Philadelphia, PA 19143*", and dated June 22, 2022, Revised. This report was Sci-Tek Consultants, Inc. project #22-1093.

Sincerely,

Sci-Tek Consultants, Inc.

A handwritten signature in blue ink, appearing to read "David N. Wilcots", is written over a horizontal line.

David N. Wilcots, P.G. #003235-E Pennsylvania
Senior Geologist
Environmental Practice Lead

Civil

Environmental

Geotechnical

Survey

Certified MBE

49th Street Terminal Remediation Evaluation Bartram North Property 1700 South 49th Street Philadelphia, PA 19143

For:

***Philadelphia Industrial
Development Corporation
PIDC***

***1500 Market Street
Suite 3500 West
Philadelphia, PA 19102***

Prepared by:

***Sci-Tek Consultants, Inc.
Project #22-1093***



June 22, 2022, Revised



Civil • Environmental • Geotechnical • Survey

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Attachment A. Site Disposition Map (from the Philadelphia Water Department)

Attachment B. Site Boundary Map, 2017

Attachment C. Tables of Previous Soil Analytical Results for 1700 South 49th Street
(former 49th Street Terminal)

1.0 INTRODUCTION AND BACKGROUND

INTRODUCTION

This evaluation of proposed remediation limits for the abandoned 49th Street Terminal subject property in Philadelphia, was prepared on behalf of the Philadelphia Industrial Development Corporation (PIDC). This site is also known as the Bartram North site, and PIDC intends for portions of this property to be developed into parkland space, a recreational trail, and a life sciences campus.

The purpose of this report is to evaluate potential environmental remedial soil volumes and associated costs to remediate or control contaminated soil identified onsite and provide protection of human health and the environment for pending site redevelopment by PIDC. This Evaluation of proposed Remediation includes information about the property and its previous use, site assessment activities and findings, applicable regulations, and cleanup standards. Estimated cleanup costs are provided in Section 3.0 on page 8.

1.1 SITE DESCRIPTION, CURRENT, AND HISTORICAL USES

The subject property occupies approximately 0.86 acres (37,554 square feet) according to the Philadelphia Water Department (PWD). The site is located along the west shore of the Schuylkill River and is bounded by 49th Street to the north and Botanic Avenue to the west in the Kingsessing section of southwest Philadelphia. Currently it is in an abandoned disposition and overgrown with vegetation. Historically the site was known as the 49th Street Terminal. A Site Disposition Map from the Philadelphia Water Department (PWD, 2022) is provided as Attachment A. A 2017 Site Boundary Map with border measurements is provided as Attachment B. This map lists the parcel as 1.002 acres in size, but part of the river is included as property. Hence the PWD's 0.86 acreage is considered more accurate. The property is roughly trapezoidal in shape and has street access from 49th Street and Botanic Avenue. PIDC intends to use this evaluation as part of its preparation for site redevelopment. The City of Philadelphia identifies the subject parcel as #885916780. A Site Setting Map is presented on the following page. A Street Map showing the site is presented on page 5.

The subject property is adjacent to the South Schuylkill River Recreational Trail (i.e., Botanic Avenue). The parcel is zoned as I-2 for medium industrial site use, according to the Philadelphia Department Licensing and Inspections (L&I). The site is currently under-used and is an interruption in the scenic Schuylkill riverside trail system. The "Phila Auth & Ind Dev" is listed as the current owner in online city records.

Current Site Use

The property is currently abandoned and is heavily overgrown with brush and trees. A defunct fuel transfer system and canopy and a corrugated metal storage trailer structure are located in the western corner by the site's gravel entrance driveway. An old river pier and bulkhead are also located off the bank of the Schuylkill River off the eastern edge of the site.

Site History

The subject property was first developed prior to 1923 as a sand and gravel wharf. It was an oil terminal from circa 1942 to 2006. Former railroad spurs served the site. The property was labeled as the “Water Terminal Fuel Oil Co.”, “Franco Coal Co” and “Water Terminal Fuel Oil Sta” on historical Sanborn Fire Insurance maps. The facility is labeled as “Major Petroleum Company” in 1975 to 2005 Sanborn maps. Formerly, six large, circular bulk fuel storage aboveground storage tanks (ASTs) and more than four accessory ASTs were onsite as evidenced from historical aerial photographs.

The site is listed by Environmental Data Resources, Inc. (EDR) on the US Brownfields database as the “49th Street Terminal, 1700 S. 49th Street, Philadelphia, PA 19143” and is described as a defunct oil terminal located along the Schuylkill River. The site is listed as having received a \$100,000 dollar assessment grant from the Environmental Protection Agency (EPA) when it was owned by 49th Street Terminals, Inc. The funding was from the EPA’s Brownfields Assessment Cooperative Agreement in 2006. Site contaminants were listed as semi-volatile organic compounds (SVOCs) and heavy metals that were to some extent cleaned up circa 2006. However, some residual subsurface contamination remains onsite.

Figure 1 below is a Google Earth (2022) image of the subject site.

Figure 1. Site Setting Map



Figure 2 below is a Philadelphia Property website (2022) street map image for the site (<https://property.phila.gov/?address=1700%20S%2049TH%20ST>).

Figure 2. Street Map



1.2 PREVIOUS ENVIRONMENTAL INFORMATION

This evaluation was developed upon review of the following documents:

- EDR Environmental Data Resources, Inc., (EDR). 2020. *4910 Botanic Avenue, Philadelphia PA 19143*. The EDR Radius Map Report with GeoCheck, Inquiry Number 6149755.2s, August 08, 2020.
- 1631-37 S. 49th Street Environmental Covenant - recorded 3/10/2020 National Heat & Power
- PADEP remedial cleanup approval for National Heat & Power S. 49th Street – 2013
- Remedial Investigation Report/Cleanup Plan, Former National heat & Power and 49 & Botanic Avenue Sites, Philadelphia, April 2013.
- Final Soil Report National Heat & Power – 2017
- PWD map for 1700 South 49th Street, 2022.

1.3 CURRENT ENVIRONMENTAL QUALITY

The 2013 Remedial Investigation Report/Cleanup Plan addressed the much larger lands of the former National Heat & Power facility to the north, as well as the smaller former 49th Street Terminal subject site, hence 1631-37 S. 49th and 1700 S. 49th Street. The 2013 report identifies

the subject property as Area of Concern 3 (“AOC-3”) for the subject site situated southwest of 49th Street at 1700 S. 49th Street.

The reported analytical results indicate that current PADEP residential direct contact medium specific concentrations (MSCs) were exceeded for two to seven semi-volatile contaminants for most of the former AST closure soil samples from the site. These include former AST locations T1, T2, T3, T4, T5, and T8. Also, located in the area of T8 were borings GP-18C and GP-20B, which were reported with elevated lead concentrations above the residential direct contact MSC. See Attachment C for Tables 1 through 9 of previous soil analytical results. Exceedance concentrations are expressed in the highlighted cells of these tables.

Former ASTs #4 and #5 reportedly contained heating oil. Tank closure soil samples collected from 3 to 5 feet below grade revealed petroleum odors, elevated field screening photoionization detector (PID) readings (up to 28 detection units), and petroleum-stained soil on aggregate and coal fragments and fill. The report estimated the volume of impacted materials at 2,500 cubic yards, based on a proposed 4-foot deep excavation.

Semi-Volatile Organic Compounds (SVOCs) Exceedances

The highest residential exceedance concentrations of seven SVOCs were detected in two soil boring samples, AST-T4-P2-3 and AST-T4-P3-3. See Table 5. Anthracene was detected at 550 milligrams per kilogram (mg/kg), which is above the residential soil-to-groundwater MSC of 350 mg/kg but below the direct contact MSC of 66,000 mg/kg. Benzene was detected at 2.5 mg/kg, which is above the residential soil-to-groundwater MSC of 0.5 mg/kg but below the direct contact MSC of 57 mg/kg. Benzo(a)anthracene was detected at 910 mg/kg, which is far above the residential direct contact and soil-to-groundwater MSCs of 6.1 and 26.0 mg/kg, respectively. Benzo(a)pyrene was detected at 610 mg/kg, which is above the residential direct contact and soil-to-groundwater MSCs of 4.2 and 46.0 mg/kg, respectively. Benzo(b)fluoranthene was detected at 680 mg/kg, which is above the residential direct contact and soil-to-groundwater MSCs of 3.5 and 25.0 mg/kg. Benzo(g,h,i)perylene was detected at 390 mg/kg, which is above the residential soil-to-groundwater MSC of 180 mg/kg but below the direct contact MSC of 13,000 mg/kg. Chrysene was detected at 770 mg/kg, which is above the residential direct contact and soil-to-groundwater MSCs of 35 and 220 mg/kg, respectively.

Other residential exceedance concentrations for SVOCs were detected in other parts of the site at GP-18 and 21; AST-T1, T2, T3, T5, T6, T7, and T8. The SVOC contaminants included benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and naphthalene.

Lead in Soil Exceedances

Exceedance concentrations of lead were detected in soil boring samples GP-18C and GP-20B at 1,100 and 2,000 mg/kg, respectively. See Table 1. These detections exceed the lead residential direct contact and soil-to-groundwater MSCs of 500 and 450 mg/kg, respectively.

Figure 3. Soil Exceedance Areas Diagram

AST-T1, T2 soil samples area AST-T4 area AST T5, T8, GP-18, GP-20 samples area



The sample analytical results from the above were reviewed against the current PADEP Statewide Health Standards (2021), as the PADEP has revised its standards since the time of the previous reports.

1.4 PROPOSED REDEVELOPMENT PROJECT

PIDC intends for a portion of the subject property to be parkland space with a recreational trail, and another portion of the site to be a life sciences campus. This waterfront utilization will be an important community connection that links and enhances and adds beauty to the Bartram's Mile Trail Greenway to the north, and the South Schuylkill River Trail to the south.

2.0 PROPOSED REMEDIAL ACTIONS

Based on a review of the site data provided, the following remedial actions are warranted to facilitate property redevelopment and prevent exposure to impacted soils.

The 2013 report describes the area of concern as 0.3 acres in size and suggests a 4-foot depth of excavation for an estimated volume of 2,500 cubic yards. This soil volume appears reasonable as it could address the three exceedance areas mentioned previously. As such, the soil excavation for disposal of 2,500 cubic yards from the site, followed by the replacement of the same volume with clean fill and topsoil is recommended.

The excavation for proper offsite disposal of SVOC and lead impacted soils is warranted. Covering the site's upland with a combination of clean fill and topsoil is warranted as this action would eliminate the exposure pathway for users of the redeveloped property. Sci-Tek recommends that the vegetation and soil near the site's riverbank be left in place to guard against slope and fluvial erosion. Post-excavation soil analysis would determine if the site demonstrates Statewide Health Standards or Site Specific Standard environmental quality under the PADEP Act 2 Land Recycling Program.

3.0 ESTIMATED COST OF REMEDIATION

The estimated cost for the above-described remediation is approximately \$1,260,000 and includes the following for the Bartram North property.

- Pre-remediation = \$40,000
- Excavation of SVOC and Lead impacted soils, and their disposal, and replacement with clean fill and topsoil = \$1,100,000
- Post-Remediation and PADEP Act 2 completion Final Report for Soil, an Environmental Covenant, and Institutional Controls = \$120,000

Attachment A

Site Disposition Map

(from the Philadelphia Water Department)



BRT/OPA Account Number: 885916780

Stormwater Billing Class: Exempt

Parcel Address: 1700 S 49TH ST

Parcel Owner: PHILA AUTH & IND DEV

Legend

- Selected Parcel
- Other Parcels
- Impervious Surfaces
 - Roof
 - Other Impervious



Parcel Area (square feet)

	Gross Area	Impervious Area
Total:	37,554	2,050
Credit:	0	0

Monthly Stormwater Charge

Fiscal Year	07/01/2016 - 06/30/2017	07/01/2017 - 08/31/2018	09/01/2018 - 08/31/2019	09/01/2019 - 08/31/2021	09/01/2021 - 08/31/2022
Parcel - Total	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Attachment B

Site Boundary Map

2017

1700 South 49th Street

 final soil report - 2017.pdf - Adobe Acrobat Pro DC (32-bit)

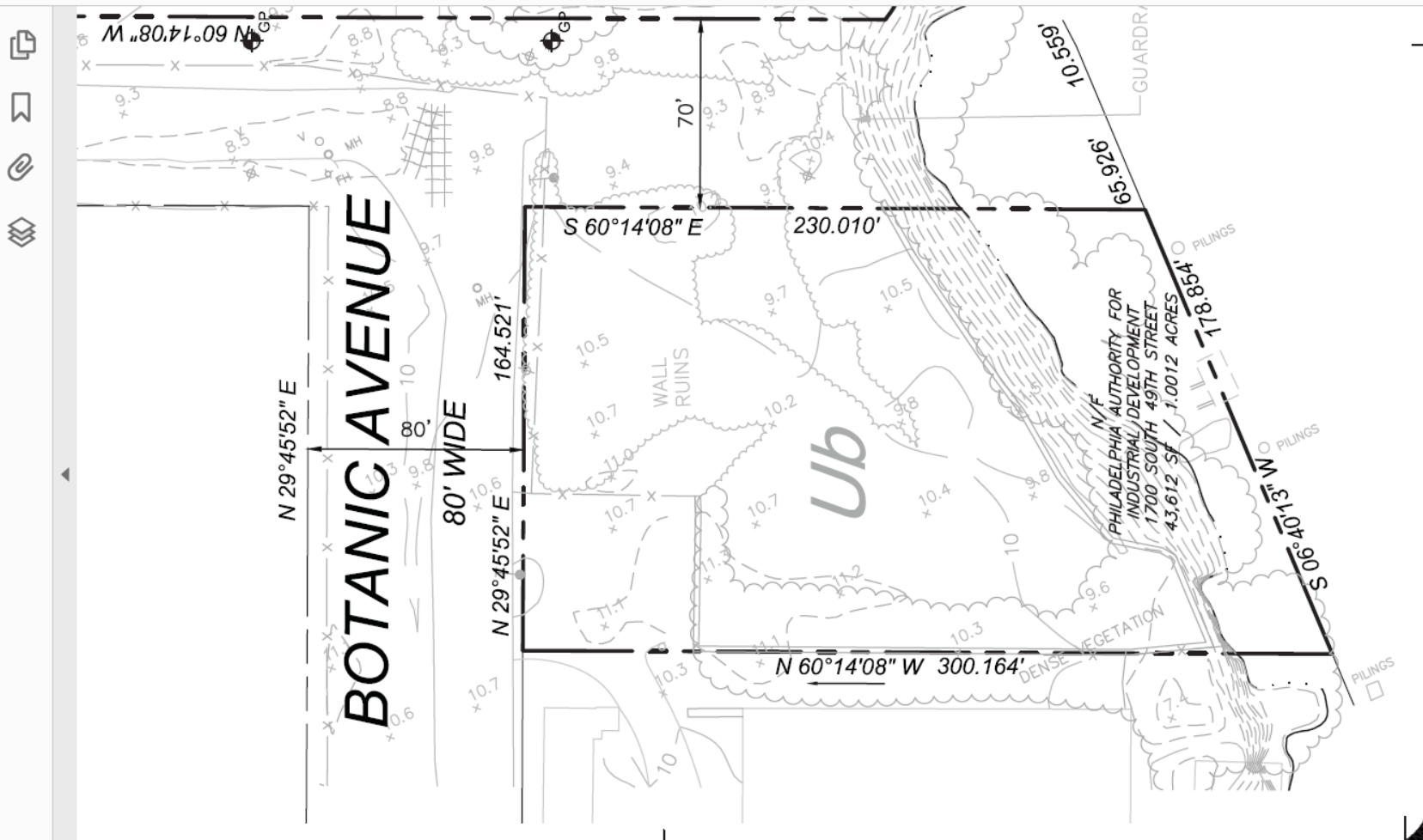
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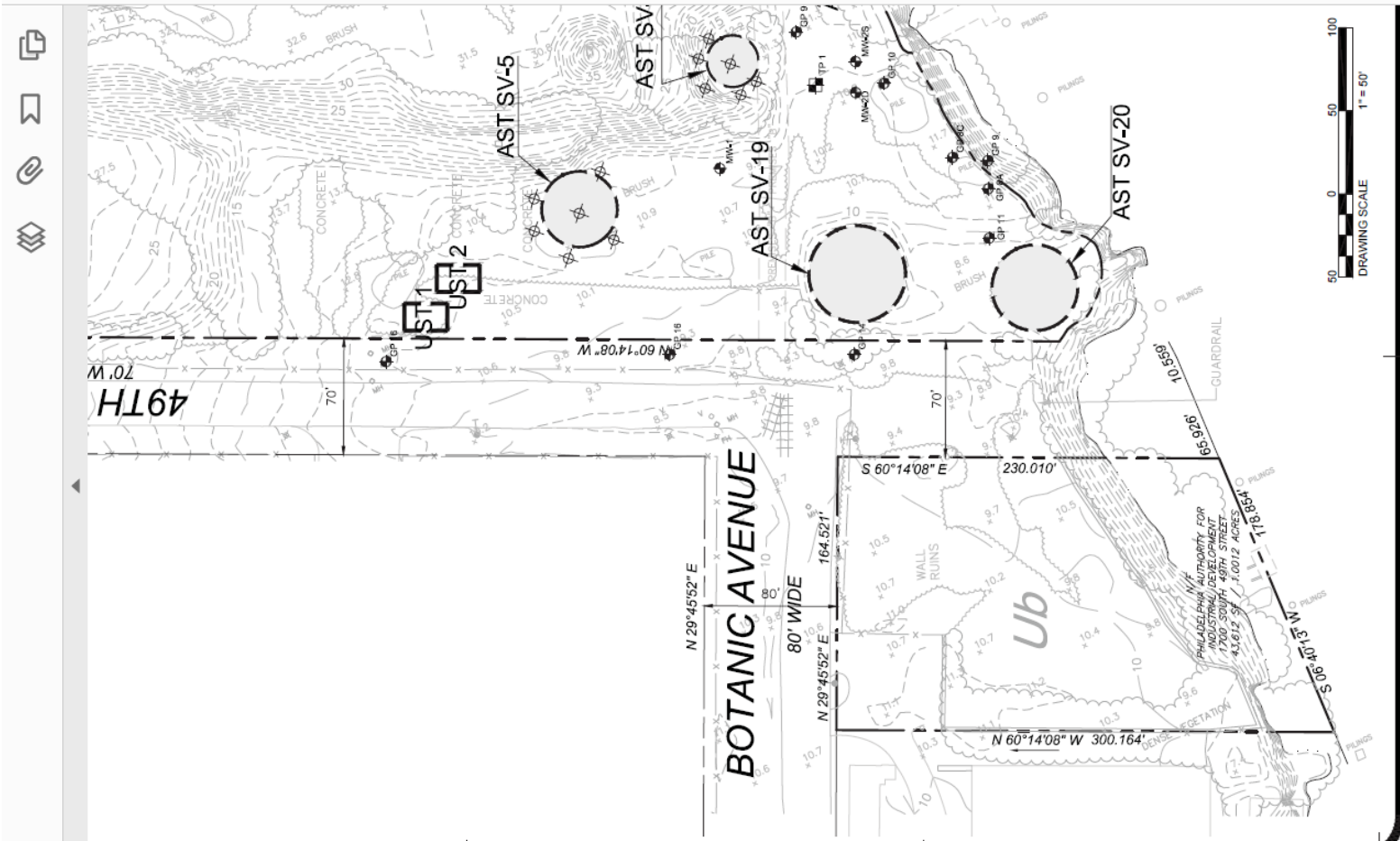
[Home](#)

Tools

PWD map 1700_S_4...

final soil report - 20... x





Attachment C

Tables of Previous Soil Analytical Results for 1700 South 49th Street

(former 49th Street Terminal)

Table 1
Soil Sample Analytical Results, former 49th Street Terminal site, Sample areas GP-17 through GP-21
1700 S. 49th St., Phila. PA 19143
Summary of Analytic Detections Vadose Zone and Saturated Soil

Compound	Residential		Non-Residential			GP-17 S1	GP-17 S2	GP18C S1	GP18C S12	GP18C S1D	GP20B S1	GP20B S2	GP 21 S1	GP 21 S2	GP 21 S2D	GP21 S1-D	GP21 S3
	Direct Contact MSC	Soil-to-GW MSC	Direct Contact MSC		Soil-to-GW MSC	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	0 - 15	<2,500	0 - 2	2 - 15	<2,500												
Anthracene	66,000	350	190,000	190,000	350	<0.089	<0.069	0.35	<0.0073	6.60	0.68	0.11	0.90	<0.011	<0.018	0.18	<0.011
Benzene	57	0.5	280	330	0.5	<0.00039	<0.0013	<0.002	<0.00042	<0.00042	<0.00043	<0.00051	<0.00042	<0.00071	<0.00068	<0.00043	<0.00042
Benzo(a)Anthracene	6.1	26	130	190,000	340	<0.0082	<0.047	0.63	<0.0089	11	1.60	<0.38	3.30	<0.014	<0.014	1.00	<0.0084
Benzo(a)Pyrene	4.2	46	91	190,000	46	<0.0059	<0.0064	0.67	<0.0064	8.60	1.40	0.27	2.80	<0.029	0.72	1.10	0.43
Benzo(b)Fluoranthene	3.5	25	76	190,000	170	<0.0078	<0.04	1.10	<0.0085	12	2.00	0.32	3.60	<0.028	<0.022	1.20	<0.014
Benzo(g,h,i)Perylene	13,000	180	190,000	190,000	180	<0.011	<0.011	0.47	<0.011	5.10	0.95	0.13	1.70	<0.014	<0.023	0.73	<0.014
Chrysene	35	220	760	190,000	230	<0.0069	<0.051	0.59	<0.0074	9.40	1.40	0.31	2.80	<0.022	<0.017	1.00	<0.01
Ethylbenzene	180	70	880	1,000	70	<0.001	<0.0011	<0.0053	<0.0011	<0.0011	<0.0011	<0.0013	<0.0011	<0.0018	<0.0018	<0.0011	<0.0011
Fluorene	8,800	2,800	130,000	190,000	3,800	<0.0055	0.11	<0.072	<0.046	4.90	0.25	<0.084	0.27	<0.018	<0.024	<0.099	<0.015
Isopropylbenzene	7,600	600	10,000	10,000	2,500	<0.00067	<0.0091	<0.03	<0.00073	<0.00072	<0.00074	<0.00089	<0.00072	<0.0012	<0.0012	<0.00074	<0.0012
Lead	500	450	1,000	190,000	450	12	36	1,100	13	710	2,000	75	240	13	15	140	<5.9
Naphthalene	13	25	66	77	25	<0.015	<0.018	0.30	<0.018	1.90	<0.068	<0.017	0.11	<0.023	<0.045	<0.092	<0.027
Phenanthrene	66,000	10,000	190,000	190,000	10,000	0.21	0.29	0.81	<0.07	20	2.70	0.25	3.00	<0.016	<0.014	7.40	<0.0087
Pyrene	6,600	2,200	96,000	190,000	2,200	0.10	0.11	1.50	<0.0058	20	3.90	0.41	4.80	<0.071	<0.012	1.30	<0.00091
Toluene	10,000	100	10,000	10,000	100	<0.00085	<0.00092	<0.00085	<0.00092	<0.00091	<0.0043	<0.0094	<0.00091	<0.0016	<0.026	<0.00093	<0.00091

MSC - Medium-Specific Concentration (PADEP) used aquifer <2500 TDS

All measurements in mg/kg

mg/kg - milligrams per kilogram

Bold values indicate detections above the laboratory Reporting Limit (RL)

Bold and highlighted values indicate exceedance of the respective MSC

Pennsylvania Department of Environmental Protection (PADEP). 2021. *Land Recycling Program Technical Guidance Manual*. Document 261-0300-101. 25 Pennsylvania Code Chapter 250. Amended November 19, 2021.

Table 2
Soil Sample Analytical Results, former 49th Street Terminal site, AST-T1 Samples
1700 S. 49th St., Phila. PA 19143

Compound	Residential		Non-Residential			P1-3		P2-3		P3-3		P4-3		C-5		P5-3FT	
Sample Depth	Direct Contact MSC	Soil-to-GW MSC	Direct Contact MSC	Soil-to-GW MSC		3		3		3		3		5		3	
Depth to Water Table	0 - 15	<2,500	0 - 2	2- 15	<2,500	4		4		4		4		4		4	
Anthracene	66,000	350	190,000	190,000	350	0.63	U	0.29	U	0.29	U	5.10		0.08	U	0.07	
Benzene	57	0.5	280	330	0.5	0.02	J	0.002	U	0.01	E	0.02	J	0.04	JE	0.01	
Benzo(a)Anthracene	6.1	26	130	190,000	340	0.92	J	1.70	J	0.94	J	10		0.12	J	0.06	
Benzo(a)Pyrene	4.2	46	91	190,000	46	0.79	J	1.60	JE	1.20	JE	8.00	E	0.088	U	0.07	
Benzo(b)Fluoranthene	3.5	25	76	190,000	170	1.00	J	2.30		1.70	JE	11	E	0.10	J	0.06	
Benzo(g,h,i)Perylene	13,000	180	190,000	190,000	180	0.69	U	1.20	JE	1.20	JE	5.70	JE	0.09	U	0.12	J
Chrysene	35	220	760	190,000	230	0.88	J	1.50	J	0.87	J	8.50		0.11	J	0.08	
Ethylbenzene	180	70	880	1,000	70	0.01	J	0.002	U	0.002	U	0.002	U	0.07	E	0.002	U
Fluorene	8,800	2,800	130,000	190,000	3,800	0.70	U	0.32	U	0.32	U	2.50		0.093	U	0.08	J
Isopropylbenzene	7,600	600	10,000	10,000	2,500	0.13		0.002	U	0.002	U	0.002	U	4.30	E	0.01	
Naphthalene	13	25	66	77	25	0.10		0.01	J	0.02	JE	0.004	U	0.04	JE	0.01	
Phenanthrene	66,000	10,000	190,000	190,000	10,000	3.20	J	1.10	J	0.93	J	17		0.088	U	0.07	
Pyrene	6,600	2,200	96,000	190,000	2,200	2.00	J	4.30		2.00		25	E	0.17	J	0.09	
Toluene	10,000	100	10,000	10,000	100	0.01	J	0.002	U	0.01	JE	0.002	U	0.004	U	0.01	

MSC - Medium-Specific Concentration (PADEP) used aquifer <2500 TDS

All measurements in mg/kg

mg/kg - milligrams per kilogram

Bold values indicate detections above the laboratory Reporting Limit (RL)

Bold and highlighted values indicate exceedance of the respective MSC

Pennsylvania Department of Environmental Protection (PADEP). 2021. *Land Recycling Program Technical Guidance Manual*. Document 261-0300-101. 25 Pennsylvania Code Chapter 250. Amended November 19, 2021.

Table 3
Soil Sample Analytical Results, former 49th Street Terminal site, AST-T2 Samples
1700 S. 49th St., Phila. PA 19143

Compound	Residential		Non-Residential			P1-3		P2-3		P3-3		C-5	
Sample Depth	Direct Contact MSC	Soil-to-GW MSC	Direct Contact MSC	Soil-to-GW MSC		3		3		3		5	
Depth to Water Table	0 - 15	<2,500	0 - 2	2- 15	<2,500	4		4		4		4	
Anthracene	66,000	350	190,000	190,000	350	0.69	J	0.39	J	2.20	E	1.60	JE
Benzene	57	0.5	280	330	0.5	0.08	E	0.360	E	0.03	JE	0.10	E
Benzo(a)Anthracene	6.1	26	130	190,000	340	4.30		3.40		5.20		0.89	J
Benzo(a)Pyrene	4.2	46	91	190,000	46	4.40	E	4.20	E	4.70	E	0.70	U
Benzo(b)Fluoranthene	3.5	25	76	190,000	170	5.80	E	5.80	E	6.40	E	0.94	J
Benzo(g,h,i)Perylene	13,000	180	190,000	190,000	180	3.10	E	3.50	E	3.10	E	0.73	U
Chrysene	35	220	760	190,000	230	3.90		3.00		4.60		0.79	U
Ethylbenzene	180	70	880	1,000	70	0.01	JE	0.002	U	0.002	U	0.10	U
Fluorene	8,800	2,800	130,000	190,000	3,800	0.35	U	0.33	U	0.36	U	0.74	
Isopropylbenzene	7,600	600	10,000	10,000	2,500	0.003	U	0.003	U	0.003	U	2.2	E
Naphthalene	13	25	66	77	25	0.04	E	0.004	U	0.004	U	0.004	E
Phenanthrene	66,000	10,000	190,000	190,000	10,000	2.40		1.10	J	7.90	E	27	E
Pyrene	6,600	2,200	96,000	190,000	2,200	7.60		5.30		13		3.20	J
Toluene	10,000	100	10,000	10,000	100	0.09	E	0.042	E	0.003	U	0.054	E

MSC - Medium-Specific Concentration (PADEP) used aquifer <2500 TDS

All measurements in mg/kg

mg/kg - milligrams per kilogram

Bold values indicate detections above the laboratory Reporting Limit (RL)

Bold and highlighted values indicate exceedance of the respective MSC

Pennsylvania Department of Environmental Protection (PADEP). 2021. *Land Recycling Program Technical Guidance Manual*. Document 261-0300-101. 25 Pennsylvania Code Chapter 250. Amended November 19, 2021.

Table 4
Soil Sample Analytical Results, former 49th Street Terminal site, AST-T3 Samples
1700 S. 49th St., Phila. PA 19143

Compound	Residential		Non-Residential			P1-3		P2-3		P3-3		C-5	
Sample Depth	Direct Contact MSC	Soil-to-GW MSC	Direct Contact MSC	Soil-to-GW MSC		3		3		3		5	
Depth to Water Table	0 - 15	<2,500	0 - 2	2- 15	<2,500	4		4		4		4	
Anthracene	66,000	350	190,000	190,000	350	0.06	U	0.05	U	0.07	U	0.72	J
Benzene	57	0.5	280	330	0.5	0.002	U	0.02	J	0.16	E	0.03	J
Benzo(a)Anthracene	6.1	26	130	190,000	340	0.07	J	0.20	J	0.29	J	2.50	
Benzo(a)Pyrene	4.2	46	91	190,000	46	0.09	JE	0.25	J	0.21	J	2.80	E
Benzo(b)Fluoranthene	3.5	25	76	190,000	170	0.12	JE	0.33	J	0.27	J	3.80	E
Benzo(g,h,i)Perylene	13,000	180	190,000	190,000	180	0.10	JE	0.13	J	0.19	JE	1.60	E
Chrysene	35	220	760	190,000	230	0.08	J	0.20	J	0.29	J	2.40	
Ethylbenzene	180	70	880	1,000	70	0.002	U	0.002	U	0.16	E	0.02	J
Fluorene	8,800	2,800	130,000	190,000	3,800	0.06	U	0.06	U	0.06	U	0.08	U
Isopropylbenzene	7,600	600	10,000	10,000	2,500	0.002	U	0.002	U	8.20	E	0.003	U
Naphthalene	13	25	66	77	25	0.003	U	0.003	U	0.05	E	0.04	
Phenanthrene	66,000	10,000	190,000	190,000	10,000	0.13	J	0.06	U	1.90	E	2.30	
Pyrene	6,600	2,200	96,000	190,000	2,200	0.13	J	0.19	J	0.59		4.80	
Toluene	10,000	100	10,000	10,000	100	0.002	U	0.002	U	0.77	E	0.01	J

MSC - Medium-Specific Concentration (PADEP) used aquifer <2500 TDS

All measurements in mg/kg

mg/kg - milligrams per kilogram

Bold values indicate detections above the laboratory Reporting Limit (RL)

Bold and highlighted values indicate exceedance of the respective MSC

Pennsylvania Department of Environmental Protection (PADEP). 2021. *Land Recycling Program Technical Guidance Manual*. Document 261-0300-101. 25 Pennsylvania Code Chapter 250. Amended November 19, 2021.

Table 5
Soil Sample Analytical Results, former 49th Street Terminal site, AST-T4 Samples
1700 S. 49th St., Phila. PA 19143

Compound	Residential		Non-Residential			C-5		P1-3		P2-3		P3-3		P5-3		P4-3	
Sample Depth	Direct Contact MSC	Soil-to-GW MSC	Direct Contact MSC	Soil-to-GW MSC		5		3		3		3		5		3	
Depth to Water Table	0 - 15	<2,500	0 - 2	2- 15	<2,500	4		4		4		4		4		4	
Anthracene	66,000	350	190,000	190,000	350	0.76	U	0.30	U	550		1.00	J	0.58	J	0.41	J
Benzene	57	0.5	280	330	0.5	0.22	E	0.25	E	0.04	E	2.50		0.12	E	0.08	
Benzo(a)Anthracene	6.1	26	130	190,000	340	1.70	J	0.86	J	910		3.20		1.50	J	2.50	
Benzo(a)Pyrene	4.2	46	91	190,000	46	1.10	J	1.30	JE	610		3.50	E	1.60	JE	2.60	E
Benzo(b)Fluoranthene	3.5	25	76	190,000	170	1.20	J	1.90	JE	680		4.40	E	1.90	JE	3.70	E
Benzo(g,h,i)Perylene	13,000	180	190,000	190,000	180	0.83	U	1.10	JE	390	E	2.30	E	1.10	JE	2.00	E
Chrysene	35	220	760	190,000	230	1.70	J	0.99	J	770		2.90		1.50	J	2.30	
Ethylbenzene	180	70	880	1,000	70	0.15	E	0.06	E	0.002	U	1.20		0.002	U	0.002	U
Fluorene	8,800	2,800	130,000	190,000	3,800	0.18	E	0.33	U	200	J	0.38	U	0.33	U	0.075	U
Isopropylbenzene	7,600	600	10,000	10,000	2,500	13	E	0.02	JE	0.003	U	0.22	J	0.003	U	0.007	U
Naphthalene	13	25	66	77	25	0.049		0.080	E	0.06	E	0.41	J	0.03	J	0.01	JE
Phenanthrene	66,000	10,000	190,000	190,000	10,000	25	E	0.39	J	1,600		3.20		2.20		1.60	J
Pyrene	6,600	2,200	96,000	190,000	2,200	4.40	J	1.20	J	1,200		5.60		3.70		5.40	
Toluene	10,000	100	10,000	10,000	100	0.17	E	0.10	E	0.01	E	0.80	E	0.02	J	0.03	J

MSC - Medium-Specific Concentration (PADEP) used aquifer <2500 TDS

All measurements in mg/kg

mg/kg - milligrams per kilogram

Bold values indicate detections above the laboratory Reporting Limit (RL)

Bold and highlighted values indicate exceedance of the respective MSC

Pennsylvania Department of Environmental Protection (PADEP). 2021. *Land Recycling Program Technical Guidance Manual*. Document 261-0300-101. 25 Pennsylvania Code Chapter 250. Amended November 19, 2021.

Table 6
Soil Sample Analytical Results, former 49th Street Terminal site, AST-T5 Samples
1700 S. 49th St., Phila. PA 19143

Compound	Residential		Non-Residential			P1-3FT		C-5FT		P2-3FT		P3-3FT		P4-3FT		P5-3FT	
Sample Depth	Direct Contact MSC	Soil-to-GW MSC	Direct Contact MSC		Soil-to-GW MSC	3		5		3		3		5		3	
Depth to Water Table	0 - 15	<2,500	0 - 2	2- 15	<2,500	4		4		4		4		4		4	
Anthracene	66,000	350	190,000	190,000	350	20		0.07	U	0.32	U	0.07	U	0.33	U	0.68	JK
Benzene	57	0.5	280	330	0.5	0.002	U	0.02	J	0.01	JE	0.01	JE	0.04		0.09	E
Benzo(a)Anthracene	6.1	26	130	190,000	340	23		0.06	U	3.30		0.06	U	0.31	U	1.90	JK
Benzo(a)Pyrene	4.2	46	91	190,000	46	18	JE	0.34	J	4.90	JE	0.07	U	0.47	JE	1.50	JK
Benzo(b)Fluoranthene	3.5	25	76	190,000	170	23	E	0.05	U	6.00	E	0.07	J	0.70	JE	2.10	JK
Benzo(g,h,i)Perylene	13,000	180	190,000	190,000	180	9.70	JE	0.07	U	5.30	E	0.09	J	0.50	JE	0.79	JK
Chrysene	35	220	760	190,000	230	62		0.08	U	3.50		0.08	U	0.39	J	1.60	JK
Ethylbenzene	180	70	880	1,000	70	0.01	JE	0.09		0.05	E	0.002	U	0.07		0.02	JE
Fluorene	8,800	2,800	130,000	190,000	3,800	11	J	0.07	U	0.36	U	0.08	U	2.30	J	0.74	U
Isopropylbenzene	7,600	600	10,000	10,000	2,500	5.90	E	1.80	E	0.20	E	0.01	JE	0.08		0.38	E
Naphthalene	13	25	66	77	25	0.15	E	0.09		0.15	E	0.01	JE	0.23		0.08	E
Phenanthrene	66,000	10,000	190,000	190,000	10,000	64		0.07	U	16	E	0.07	U	5.50		3.20	JK
Pyrene	6,600	2,200	96,000	190,000	2,200	62		0.08	U	7.20		0.09	J	1.30	J	4.20	JK
Toluene	10,000	100	10,000	10,000	100	0.01	U	0.02	J	0.03	JE	0.01	JE	0.08		0.04	E

MSC - Medium-Specific Concentration (PADEP) used aquifer <2500 TDS

All measurements in mg/kg

mg/kg - milligrams per kilogram

Bold values indicate detections above the laboratory Reporting Limit (RL)

Bold and highlighted values indicate exceedance of the respective MSC

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Table 7
Soil Sample Analytical Results, former 49th Street Terminal site, AST-T6 Samples
1700 S. 49th St., Phila. PA 19143

Compound	Residential		Non-Residential			C-5FT		P1-3FT		P2-3FT		P3-3FT	
Sample Depth	Direct Contact MSC	Soil-to-GW MSC	Direct Contact MSC	Soil-to-GW MSC		5		3		3		3	
Depth to Water Table	0 - 15	<2,500	0 - 2	2- 15	<2,500	4		4		4		4	
Anthracene	66,000	350	190,000	190,000	350	2.90	J	0.47	J	0.62	U	0.47	J
Benzene	57	0.5	280	330	0.5	0.10	E	0.002	U	0.002	U	0.02	J
Benzo(a)Anthracene	6.1	26	130	190,000	340	3.60	J	1.70	J	0.57	U	0.97	J
Benzo(a)Pyrene	4.2	46	91	190,000	46	2.60	JE	2.00		0.65	U	1.00	J
Benzo(b)Fluoranthene	3.5	25	76	190,000	170	3.40	JE	2.60		0.45	U	1.40	J
Benzo(g,h,i)Perylene	13,000	180	190,000	190,000	180	1.20	JE	0.32 U		0.67	U	0.89	J
Chrysene	35	220	760	190,000	230	3.30	J	1.80	J	0.73	U	0.91	J
Ethylbenzene	180	70	880	1,000	70	0.03	JE	0.002	U	0.002	U	0.029	
Fluorene	8,800	2,800	130,000	190,000	3,800	3.60	J	0.33	U	1.70	JE	3.20	
Isopropylbenzene	7,600	600	10,000	10,000	2,500	0.77	J	0.002	U	0.67	J	1.40	E
Naphthalene	13	25	66	77	25	0.07	E	0.01	J	0.06		0.11	
Phenanthrene	66,000	10,000	190,000	190,000	10,000	11		1.50	J	1.30	J	3.20	
Pyrene	6,600	2,200	96,000	190,000	2,200	8.20		2.20		0.72	U	2.80	
Toluene	10,000	100	10,000	10,000	100	0.04	E	0.002	U	0.007	J	0.03	

MSC - Medium-Specific Concentration (PADEP) used aquifer <2500 TDS

All measurements in mg/kg

mg/kg - milligrams per kilogram

Bold values indicate detections above the laboratory Reporting Limit (RL)

Bold and highlighted values indicate exceedance of the respective MSC

Pennsylvania Department of Environmental Protection (PADEP). 2021. *Land Recycling Program Technical Guidance Manual*. Document 261-0300-101. 25 Pennsylvania Code Chapter 250. Amended November 19, 2021.

Table 8
Soil Sample Analytical Results, former 49th Street Terminal site, AST-T7 Samples
1700 S. 49th St., Phila. PA 19143

Compound	Residential		Non-Residential			C-5FT		P1-3FT		P2-3FT		P3-3FT	
Sample Depth	Direct Contact MSC	Soil-to-GW MSC	Direct Contact MSC	Soil-to-GW MSC		5		3		3		3	
Depth to Water Table	0 - 15	<2,500	0 - 2	2- 15	<2,500	4		4		4		4	
Anthracene	66,000	350	190,000	190,000	350	1.90		1.10	J	0.59	U	0.31	J
Benzene	57	0.5	280	330	0.5	0.11	K	0.09	E	0.002	U	0.02	J
Benzo(a)Anthracene	6.1	26	130	190,000	340	1.90	J	1.60	J	0.55	U	1.80	
Benzo(a)Pyrene	4.2	46	91	190,000	46	1.20	JE	1.70	JE	0.63	U	2.20	
Benzo(b)Fluoranthene	3.5	25	76	190,000	170	1.90	JE	2.40	E	0.50	JK	3.10	
Benzo(g,h,i)Perylene	13,000	180	190,000	190,000	180	0.92	U	0.94	JE	0.65	U	2.20	
Chrysene	35	220	760	190,000	230	1.70	J	1.60	J	0.70	U	1.80	
Ethylbenzene	180	70	880	1,000	70	0.06	K	0.05	E	0.002	U	0.009	J
Fluorene	8,800	2,800	130,000	190,000	3,800	4.90	J	2.60	E	1.90	JK	0.09	J
Isopropylbenzene	7,600	600	10,000	10,000	2,500	2.90	E	0.88		0.37		0.00	U
Naphthalene	13	25	66	77	25	0.03	K	0.04	E	17		0.03	J
Phenanthrene	66,000	10,000	190,000	190,000	10,000	10		4.30		2.90	JK	1.20	
Pyrene	6,600	2,200	96,000	190,000	2,200	5.30	J	2.50		0.95	JK	3.40	
Toluene	10,000	100	10,000	10,000	100	0.09	K	0.07	E	0.002	U	0.04	

MSC - Medium-Specific Concentration (PADEP) used aquifer <2500 TDS

All measurements in mg/kg

mg/kg - milligrams per kilogram

Bold values indicate detections above the laboratory Reporting Limit (RL)

Bold and highlighted values indicate exceedance of the respective MSC

Pennsylvania Department of Environmental Protection (PADEP). 2021. *Land Recycling Program Technical Guidance Manual*. Document 261-0300-101. 25 Pennsylvania Code Chapter 250.

Amended November 19, 2021.

Table 9
Soil Sample Analytical Results, former 49th Street Terminal site, AST-T8 Samples
1700 S. 49th St., Phila. PA 19143

Compound	Residential		Non-Residential			P2-3		P3-3		C-5	
Sample Depth	Direct Contact MSC	Soil-to-GW MSC	Direct Contact MSC	Soil-to-GW MSC		3		3		5	
Depth to Water Table	0 - 15	<2,500	0 - 2	2- 15	<2,500	4		4		4	
Anthracene	66,000	350	190,000	190,000	350	0.46	J	0.16	J	0.22	J
Benzene	57	0.5	280	330	0.5	0.08	E	0.01	JE	0.003	U
Benzo(a)Anthracene	6.1	26	130	190,000	340	3.80		0.72		1.30	
Benzo(a)Pyrene	4.2	46	91	190,000	46	4.90		1.10		1.60	
Benzo(b)Fluoranthene	3.5	25	76	190,000	170	7.70		1.70		2.20	
Benzo(g,h,i)Perylene	13,000	180	190,000	190,000	180	1.60	J	0.46		0.45	
Chrysene	35	220	760	190,000	230	4.70		0.97		1.20	
Ethylbenzene	180	70	880	1,000	70	0.04	E	0.04	JE	0.002	U
Fluorene	8,800	2,800	130,000	190,000	3,800	0.35	U	0.13	J	0.11	J
Isopropylbenzene	7,600	600	10,000	10,000	2,500	0.003	U	0.003	U	0.003	U
Naphthalene	13	25	66	77	25	0.06	E	0.04	E	0.03	E
Phenanthrene	66,000	10,000	190,000	190,000	10,000	1.50	J	0.47		0.67	
Pyrene	6,600	2,200	96,000	190,000	2,200	3.40		0.61		1.20	
Toluene	10,000	100	10,000	10,000	100	0.11	E	0.06	E	0.008	JE

MSC - Medium-Specific Concentration (PADEP) used aquifer <2500 TDS

All measurements in mg/kg

mg/kg - milligrams per kilogram

Bold values indicate detections above the laboratory Reporting Limit (RL)

Bold and highlighted values indicate exceedance of the respective MSC

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