Summary of Offsite Soils Area Human Health Risk Assessment

Former 51st Street Terminal
1630-1646 South 51st Street
Philadelphia, Pennsylvania

April 21, 2025

On behalf of Alliance 51st Street LLC (Alliance), Arcadis U.S., Inc. (Arcadis) prepared a Human Health Risk Assessment Report (HHRA Report) for the offsite soils adjacent to the former 51st Street Terminal, owned by Alliance and located at 1630-1646 South 51st Street, Philadelphia, Pennsylvania (Site). Arcadis prepared the HHRA Report in compliance with Chapter 250 of Title 25 of the Pennsylvania Code, which relates to the administration of Pennsylvania's Land Recycling Program (known as the Voluntary Cleanup Program: Act 2) and Pennsylvania Department of Environmental Protection (PADEP) guidance.

In April 2024, the Philadelphia Water District responded to a report of yellow-colored water leaving the Site. Heavy rain led to runoff travelling offsite, to Bartram's Garden Mile Trail immediately outside the gate at the southeastern corner of the Site. The water was found in a low-lying area along the eastern portion of the Site. Sampling of the water identified the presence of chromium. Following investigation activities to identify the source, historical fill was identified onsite and on the perimeter of the Site, indicating that this general area of Philadelphia was filled prior to development.

Bartram's Garden Mile Trail is a paved trail that is primarily used as an access point to the park from street parking areas located along Botanic Avenue. The riverbank is open in some locations along the trail for fishing and general river access, but otherwise the riverbank contains heavy vegetation and/or debris. A concrete wall is present along the trail near the offsite soils area, which a trail walker could potentially sit on. A rest area and picnic area, unrelated to the offsite soils area and constituents discussed in the HHRA Report, are located at Bartram's Garden House approximately 0.4 mile away. Therefore, trail walkers are not expected to sit along the concrete wall or riverbank for prolonged periods of time, if at all.

Impacted soil and sediment have been removed from onsite and offsite areas, and a human health risk assessment (HHRA) was conducted based on soil that is remaining in these areas. The HHRA evaluated potential exposure to soil samples designated as S3, S5, S6, S7, S8, and S16, as requested by the PADEP, to assess potential human health risk from exposure to chromium determined to exist in offsite soil.

Total chromium refers to all forms of chromium, including trivalent chromium and hexavalent chromium. In the absence of hexavalent chromium data, total chromium is conservatively evaluated as hexavalent chromium because hexavalent chromium is considered more toxic than trivalent chromium. Samples were analyzed for total chromium and hexavalent chromium. Because of this, the total chromium concentration was assumed to consist of trivalent chromium

and the maximum total chromium concentration was compared to the trivalent chromium criteria.

Potential primary receptors evaluated in the HHRA include:

- *Maintenance workers mowing the grass along Bartram's Garden Mile Trail.* These individuals are assumed to be adults who are potentially exposed to soil through incidental ingestion, dermal contact, and inhalation of dust.
- *Recreators fishing along the riverbank.* These individuals are assumed to be young children (3 to less than 6 years old), youth, and adults. Exposure to chromium (both hexavalent chromium and total chromium) in soil could occur through incidental ingestion, dermal contact, and inhalation of dust.
- *Recreators walking or running on the trail.* These individuals are assumed to be youth and adults. Exposure to chromium (both hexavalent chromium and total chromium) in soil could occur through incidental ingestion, dermal contact, and inhalation of dust.

Exposure parameters used to characterize potential exposures of these receptors, including assumptions related to how long and how often people are present in this area, how much people weigh, how much soil they may ingest, what they may wear to estimate how much skin may contact the soil, and soil to skin adherence factors, were chosen following United States Environmental Protection Agency (USEPA) and PADEP guidance, and based on PADEP feedback that was provided during the evaluation.

The results of the risk calculations indicated that people accessing this area would not be harmed by contact with the chromium-containing soil. All of the calculated risks were less than the PADEP and USEPA cumulative risk benchmark of 1×10^{-4} and a noncancer hazard of 1.

In summary, concentrations of total chromium and hexavalent chromium in samples collected from the offsite soils area are less than acceptable limits and do not present a risk to receptors.