FINAL REMOVAL ACTION WORKPLAN

SANTA FE TRACKBED TO PARK

Berkeley, California

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This Final Removal Action Workplan was prepared by the staff of GSI Environmental Inc., under the supervision of the Engineer(s) and/or Geologist(s) whose signatures appear hereon.

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FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

EXECUTIVE SUMMARY

This Removal Action Work Plan (RAW) is being submitted on behalf of the City of Berkeley Department of Parks, Recreation, and Waterfront (the City) for the Santa Fe Trackbed to Park Conversion project site located in Berkeley, California (Figure 1). The RAW has been prepared to comply with Task 5 of the Voluntary Cleanup Agreement between the City and the California Department of Toxic Substances Control (DTSC). The Site consists of four vacant noncontiguous parcels identified by Alameda County Assessor's Office Assessor Parcel Numbers 54-1790-28, 54-1794-28, 54-1793-27, and 54-1735-20. The 1.32-acre Site is shown on Figure 2.

The Site is currently vacant land that was historically the Santa Fe Railroad right-of-way (ROW). The Site is located within a residential area, there are no buildings associated with the Site, and the Site surfaces consist of mostly uncovered soils. The City plans to develop the Site into a community asset, which will include a community garden, dog park, children's play area, and teaching garden.

Beginning in 2022, several environmental investigations have been conducted at the Site. Based on a comparison with screening levels, a large portion of the Site contains soil that is chemically impacted with arsenic, lead, polycyclic aromatic hydrocarbons (PAHs), and mercury (collectively the constituents of potential concern [COPCs]); these impacts are attributed to the historical use of the Site by the Sante Fe Railroad. Impacts to soil are limited primarily to shallow soil (upper 2 feet) but extend to 5.5 feet in some areas. The total volume of impacted soil is estimated to be approximately 4,640 cubic yards. No impacts to groundwater or soil vapor have been detected at the Site.

The overarching removal action objective for the Site is to remove arsenic-, mercury- and PAH-impacted soil such that there are no future restrictions on development and Site use. As such, the following cleanup goals have been selected:

- Arsenic – background concentration of 11 milligrams per kilogram (mg/kg)
- Lead – default residential screening level of 80 mg/kg developed by the DTSC
- Mercury – default residential screening level of 0.67 mg/kg developed by the DTSC
- PAHs – regional ambient level of 0.9 mg/kg benzo(a)pyrene equivalency (BaPe; DTSC, 2009)

To meet the removal action objectives (RAOs), four potential response actions are identified and evaluated herein based on their effectiveness, implementability, and cost; these alternatives are:

- Alternative 1 – No Further Action
- Alternative 2 – Soil Excavation and Off-Site Disposal
- Alternative 3 – Soil Excavation, Off-Site Disposal, and On-Site Containment
- Alternative 4 – Capping in Place

Based on the comparative analysis of these response actions described in Section 4.4, Alternative 2 (Excavation and Off-Site Disposal) is the preferred and recommended response action to meet the RAOs. This alternative was selected because:

- Alternative 1 (No Further Action) does not address the RAOs for the Site and it is unlikely to receive regulatory and community acceptance.
- Alternative 3 (Soil Excavation, Off-Site Disposal, and On-Site Containment) requires a land use restriction and long-term operation and maintenance plan. Given the long-term stewardship requirement, implementation of Alternative 3 will not achieve the RAO of unrestricted Site use. Additionally, Alternative 3 will not satisfy the RAO of removing the COPCs from the Site and is, therefore, not anticipated to be accepted by both the State and the community.
- Alternative 4 (Capping in Place) requires a land use restriction, long-term operation and maintenance plan. Given the long-term stewardship requirement, implementation of Alternative 4 will not achieve the RAO of unrestricted Site use. Additionally, Alternative 4 will not satisfy the RAO of removing the COPCs from the Site and is, therefore, not anticipated to be accepted by both the State and the community.

Only Alternative 2 satisfies the evaluation criteria and meets the RAOs for the Site. It is easily implementable with conventional grading equipment and likely to obtain regulatory and community approval.

The excavation footprint and depths required to satisfy the RAOs are shown on Figures 3a, 4a, 5a, and 6a. The removal action will be implemented in accordance with all applicable federal, state and local regulations.

After the response action is completed, the Site will be backfilled to the existing grade. The final disposition of all soil removed from the Site will be reported in a Removal Action Completion Report (Task 9 of the VCA; DTSC, 2023) that will include waste manifests and disposal tickets.

DTSC issued a conditional approval letter for the Draft Final RAW on August 13, 2025. A public comment period was subsequently conducted from August 18, 2025 to September 16, 2025. Upon completion of the public comment period, DTSC issued an October 30, 2025 Responsiveness Summary for Public Comments Received on the Draft Removal Action Workplan (RAW). The RAW was revised to address comments received as directed by DTSC. DTSC subsequently issued an October 31, 2025 letter approving the modified RAW for implementation.

FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

1.0 INTRODUCTION

GSI Environmental Inc. (GSI) has prepared this Removal Action Workplan (RAW) on behalf of the City of Berkeley Department of Parks, Recreation, and Waterfront (the City) to provide an evaluation and selection of remediation alternatives at the Santa Fe Trackbed to Park Conversion project site (the Site; Figures 1 and 2) in Berkeley, California. The Site consists of four vacant noncontiguous parcels identified by Alameda County Assessor's Office Assessor Parcel Numbers 54-1790-28, 54-1794-28, 54-1793-27, and 54-1735-20.

The City has entered into a voluntary cleanup agreement with the California Department of Toxic Substances Control (DTSC) to oversee environmental characterization and remediation of the Site. This RAW has been prepared to comply with Task 5 of the Voluntary Cleanup Agreement (VCA) between the City and the DTSC (2023).

A RAW is one of two remedy selection documents that may be prepared for a hazardous substance release site pursuant to California Health and Safety Code (HSC) Sections 78130, 79020-79035, 79260-79275, and 79195-79240; and is appropriate for removal actions that are projected to cost less than $2,000,000. This RAW has been prepared in compliance with the Site VCA Docket No. HSA-FY22/23-069, California Health and Safety Code sections 78130, 79020-79035, 79260-79275, and 79195-79240 and the California Environmental Protection Agency (CalEPA), DTSC September 23, 1998 guidance memorandum entitled *Removal Action Workplans – Senate Bill 1706.*

The purpose of this RAW is to assess and select an appropriate response action to mitigate potential risks to visitors from areas of elevated arsenic, lead, mercury, and polycyclic aromatic hydrocarbons (PAHs) (collectively the constituents of potential concern [COPCs]) identified in soil in support of the City's plans to redevelop the Site into a community asset, which will include a community garden, dog park, children's play area, and teaching garden. Conceptual site redevelopment plans are included in Appendix A.

This RAW describes the Site background and characterization, removal action goals and objectives, alternative evaluation, removal action implementation plan, sampling and analysis plan, transportation plan, health and safety plan, public participation opportunities, and CEQA determination.

1.1 Regulatory Basis for the RAW

The RAW process, including the regulatory background and the RAW objectives, is described in the following sections.

1.1.1 Regulatory Basis for the RAW

In California HSC 78130, a RAW is defined as "a workplan prepared or approved by the Department (DTSC) or a California Regional Water Quality Control Board (RWQCB) which is developed to carry out a removal action, in an effective manner, that is protective of the public health and safety and the environment." As mentioned previously, a RAW is appropriate when the estimated cost of the removal action is less than $2,000,000. If the estimated capital cost of implementing the chosen action will exceed $2,000,000, a Removal Action Plan should be prepared.

The estimated cost of the selected removal alternative recommended in this RAW is estimated to be less than $2,000,000.

1.1.2 Objectives of the RAW

The objectives of this RAW are to:

- present and evaluate existing site conditions;
- establish appropriate removal action objectives (RAOs) for protection of human health and the environment; and
- evaluate alternatives and identify a final recommendation for a removal action at the site that is protective of human health and the environment.

1.1.3 Elements of the RAW

To accomplish the objectives stated in the preceding section, and satisfy regulatory requirements, this RAW includes the following elements:

- a description of the nature and extent of the COPCs at the Site;
- the goals to be achieved by the removal action;
- an analysis of the alternatives considered and rejected, and the basis for the rejection, including a discussion of effectiveness, implementability, and cost of each alternative; and
- a description of the recommended alternative and an implementation plan.

1.2 Site Description

The Site extends north-to-south between Blake Street and Ward Street and east-to-west between Sacramento Street and Mabel Street and includes four parcels, shown on Figure 2:

- Parcel 1 – located between Blake and Parker Streets (APN: 54-1790-28)
- Parcel 2 – located between Parker and Carleton Streets (APN: 54-1794-28)
- Parcel 3 – located between Carleton and Derby Streets (APN: 54-1793-27)
- Parcel 4 – located between Derby and Ward Streets (APN: 54-1735-20)

Collectively, the area of these parcels is approximately 1.32 acres. The Site is currently vacant land that was historically the Santa Fe Railroad Right-of-Way (ROW). The Site is located within a residential neighborhood and adjacent to residential properties. The nearest school site is Longfellow Middle School, located at 1500 Derby Street in Berkeley, California, approximately 0.2 miles east of the Site. This Longfellow Middle School site is currently closed for construction and school sessions are being held at 1701 San Pablo Street, approximately 1.3 miles northwest of the Site. The Longfellow Middle School site at 1500 Derby Street will be closed for at least the 2024-25 and 2025-26 school years Therefore, the nearest active school is currently Malcom X Elementary School, located at 1731 Prince Street in Berkeley, California, approximately 0.5 miles southeast of the Site. The following day care facilities were identified within 1000 feet of the Site: Kidsland Channing, Rosemarie's Motivational Preschool, Dwight Way Wonderschool, Kidsland Berkeley, and Lucesitas (Maria Gonzales) Daycare. One martial arts school, Pitt's Martial Arts Academy, and the San Pablo Park are located within 0.5 mile southwest of the Site. There are no buildings associated with the Site, however, two residential structures, a detached garage, and a small shed partially encroach on the Site. The Site surfaces consist of mostly uncovered soils.

There are two adjacent properties where the main dwelling structure encroaches onto City-owned property at Parcels 2 and 4. To resolve these encroachments, the City and the adjacent property

owners plan to execute a lot line adjustment whereby certain square footage currently owned by the City will be deeded to the property owner, and an equal amount of square footage owned by the private entity will be deeded to the City. The boundaries of these lot line adjustments are shown on Figures 4a and Figure 6a.

1.3 Site Owner

The Site is currently owned by the City of Berkeley. The Atchison, Topeka and Santa Fe Railway Company previously owned the Site and transferred ownership to the City of Berkeley in 1980.

1.4 Purpose

Based on the information developed during the site characterization activities (Section 2.0), the DTSC has determined that further action is required at the site due to elevated concentrations of arsenic, lead, mercury, and PAHs detected in soil samples collected from the site. A previous version of this RAW was submitted to DTSC on June 17, 2025. A public comment period was conducted from August 18, 2025 to September 16, 2025 (Section 9.0). Following completion of the public comment period, DTSC reviewed and responded to the comments received in a letter dated October 28, 2025 (Responsiveness Summary; Appendix H). The RAW has been revised, as necessary, in response to the comments received. Since significant changes were not required, DTSC approved the RAW for implementation in an October 31, 2025 letter which included a Notice of Exemption (NOE) to comply with the California Environmental Quality Act (Appendix I). When the remedy has been implemented, a removal action completion report will be submitted to DTSC for review and certification.

2.0 SITE CHARACTERIZATION

Characterization of the site was conducted between 2022 and 2024. A summary of the activities and results is provided in the sections below.

2.1 Summary of Previous Investigations

A Phase II Environmental Site Assessment was conducted by GSI in July 2022 to evaluate whether historical activities within the former Santa Fe Railroad ROW impacted shallow soil with metals, PAHs, organochlorine pesticides (OCPs), and/or total petroleum hydrocarbons (TPH). Results of the initial soil investigation are available in the Santa Fe Right-of-Way Phase II Environmental Site Assessment – Report of Findings (GSI, 2022) and are summarized below.

Soil samples were collected from 15 soil borings. TPH and OCPs were not detected at concentrations exceeding human health screening criteria in any samples. Arsenic was detected in samples collected from 1.0 foot and 2.5 feet below ground surface (bgs) at concentrations exceeding background at various locations across the site with no discernable source area. Arsenic was also detected in samples collected at 4.0 feet bgs at two locations (P2-1 at Parcel 2 and P3-4 at Parcel 3). Lead, mercury, and PAHs were detected at concentrations exceeding the human health screening criteria in samples collected at 1.0 foot bgs at a limited number of boring locations. Based on the results of the initial soil investigation the City entered into a voluntary cleanup agreement with the DTSC to oversee environmental characterization and cleanup of the Site.

The DTSC requested additional delineation of the Site COPCs and GSI conducted an additional investigation between January 8 and 11, 2024 in accordance with the DTSC-approved Additional Soil Sampling Work Plan (GSI, 2023). To assess the extent of soil removal that would be required to remediate Parcels 1 through 4 for unrestricted use a gridded soil sampling strategy was

implemented. A 30-foot by 30-foot grid was overlain on Parcel 1 through 4 (Figures 3a, 4a, 5a, and 6a) and soil samples were collected from each grid cell. The data collected in January 2024 indicated the vertical extent of arsenic was not delineated in some grid cells on Parcels 1, 2, and 3.

GSI submitted the Addendum to the Additional Soil Sampling Work Plan (GSI, 2024b) to DTSC which proposed additional soil sampling to delineate the vertical extent of arsenic in grid cells where it was not yet delineated. The investigation activities described in the Addendum to the Additional Soil Sampling Work Plan were completed in April 2024. Results of the January 2024 and April 2024 investigations are described in the Final Additional Soil Investigation Report (GSI, 2024b). The investigation confirmed the vertical and horizontal extents of the Site COPCs at Parcels 1 through 4 (Figures 3a, 4a, 5a, and 6a). A soil sampling and analysis summary is presented in Table 1. A visual summary of the results of the soil investigations is shown on Figures 3a through 6d and the analytical results from these investigations are presented in Tables 2 through 5.

Impacts to soil at the Site are limited primarily to shallow soil but extend to 5.5 feet in some areas. The total volume of impacted soil is estimated to be about 4,640 cubic yards. No impacts to groundwater or soil vapor were detected at the Site.

2.1.1 Site Geology and Hydrogeology

The soil at the Site generally consists of dark grayish brown poorly graded sand with silt or silty sand underlain by very dark brown lean clay. Coarse gravel was observed in most grid cells on the eastern side of Parcel 2. Water was encountered between 2.0 and 4.0 feet bgs in seven grid cells on the eastern side of Parcel 2 during the January 2024 investigation. Water was not encountered on the western side of Parcel 2 or on any other parcels, therefore, the water that was encountered on the eastern side of Parcel 2 was likely perched water from recent rain events and not groundwater.

Fill materials including small amounts of glass fragments and brick fragments were noted on the eastern side of Parcels 2, 3 and 4. Pieces of asphalt-like material were noted in grid cells P1-B4 and P4-A8. No staining or odors were observed at any of the soil boring locations during sampling activities.

2.1.2 Background Concentrations

Metals occur naturally in soil. EPA and DTSC guidance indicate that risk evaluations for metals are only necessary when the laboratory analytical results exceed naturally occurring background concentrations (DTSC, 2008). Each of the COPCs was compared to published regional background concentrations. The background concentrations for arsenic and PAHs in soils at the Site are above the conservative risk-based screening criterion. The background concentrations for arsenic and PAHs are provided below.

- The background concentration of 11 milligrams per kilogram (mg/kg) was established for arsenic in urbanized flatland soils within the San Francisco Bay Area in an evaluation completed at San Francisco State University in coordination with staff of the San Francisco Bay Regional Water Quality Control Board (Duverge, 2011).
- Carcinogenic benzo(a)pyrene-like PAHs are evaluated by calculating the benzo(a)pyrene equivalency (BaPe) using equivalency factors recommended by DTSC (2015), with non-detect values represented as the detection limit. The regional ambient level of 0.9 mg/kg was established for BaPe in soil by the DTSC (2009).

2.2 Nature and Extent of Contamination by Parcel

All data collected during the 2022 and 2024 soil investigations were compared to residential screening levels (Section 3.0) to determine the extent of affected soil that may require remediation to allow for unrestricted use of the Site. A description of screening level exceedances and a summary of the vertical extent of impacts by grid cell for each parcel is provided below. Analytical results are presented in Tables 2 through 5. A visual summary of the screening levels exceedances on each parcel is included in Figures 3a through 6d.

A Conceptual Site Model (CSM) was previously developed and presented in the Final Additional Soil Investigation Report (GSI, 2024c). An updated CSM is included below.

2.2.1 Parcel 1

Arsenic was the only metal detected at concentrations exceeding its screening level at Parcel 1. The vertical extent of affected soil at Parcel 1 is shown on Figure 3a and a visual summary of the sampling results is presented on Figures 3b through 3d. Arsenic was detected above the background concentration in the samples collected from 1.0 and 2.5 feet bgs at boring P1-2 and P1-3 and in several samples collected between 2.0 and 5.0 feet bgs at grid cells P1-B2, P1-B3, P1-B4, P1-B5, P1-B6, and P1-B7.

One individual PAH, benzo(a)pyrene, was detected above its screening criterion in the sample collected at P1-3 at 1.0 foot bgs. The calculated BaPe for this sample was below the screening threshold of 0.9 mg/kg.

2.2.2 Parcel 2

At Parcel 2 arsenic, lead, and mercury were detected above screening levels. The vertical extent of affected soil at Parcel 2 is shown on Figure 4a and a visual summary of the sampling results is presented on Figures 4b through 4d. Arsenic was detected above its screening criterion in the sample collected at 1.0 foot bgs from borings P2-1 through P2-4. Arsenic was also detected above screening criterion in the samples collected from 2.5 and 4.0 feet bgs at boring P2-1, the sample collected at 2.5 feet bgs at boring P2-2, and the sample collected at 5.0 feet in P2-1D. In the grid cell samples, arsenic was detected above its screening criterion in samples collected between 2.0 and 5.0 in grid cells and P2-B1 through P2-B10.

Lead was detected above its screening criterion in the samples collected at 1.0 foot at borings P2-1, P2-2, and P2-3. Lead was detected above its screening criterion in the samples collected at 2.0 feet in grid cell samples P2-A8, P2-A9, P2-B1, P2-B10 and the sample collected from 3.0 feet in grid cell P2-B10. Mercury was detected above its screening criterion in the sample collected at 1.0 foot in boring P2-4 and in the sample collected from 2.0 feet in grid cell sampleP2-B7.

One individual PAH, benzo(a)pyrene, was detected above its screening criterion in the sample collected at 1.0 foot bgs in grid cell P2-2. The calculated BaPe for this sample was below the screening threshold of 0.9 mg/kg.

2.2.3 Parcel 3

At Parcel 3 arsenic, lead, and mercury were detected above screening levels. The vertical extent of affected soil at Parcel 3 is shown on Figure 5a and a visual summary of the sampling results is presented on Figures 5b through 5d. Arsenic, lead and/or mercury were detected above screening criteria in the sample collected at 1.0 foot bgs from borings P3-1 through P3-4, P3-T1-1.0, and P3-T4-1.0. Arsenic was also detected above its screening criteria in the samples collected

from 2.5 feet bgs at boring P3-2 and at 2.5 and 4.0 feet bgs at boring P3-4. In the grid cell samples, arsenic was detected above its screening criteria in samples collected between 2.0 and 5.0 feet at locations P3-A1, P3-A2, P3-A4, P3-A5, P3-A7, P3-A9, and P3-B1 through P3-B10.

Lead was also detected above its screening criteria in the samples collected at 1.0 foot bgs in the sample collected from boring P3-3 and at 1.0, 1.5, and 2.0 feet bgs from boring P3-T4. In the Lead was also detected above its screening criteria in the samples collected at 1.0 foot bgs in the sample collected from boring P3-3 and at 1.0, 1.5, and 2.0 feet bgs from boring P3-T4. In the grid cell samples, lead was detected above its screening criteria in samples collected between 2.0 and 3.0 feet in grid cells P3-A1, P3-A4, P3-A7, P3-A9, P3-B1, P3-B4, P3-B6, P3-B7, P3-B8, and P3-B9.

Mercury was detected above its screening criterion in the samples collected from 1.0 and 2.5 feet bgs in boring P3-2, and from 2.0 and 3.0 feet bgs in grid cell sample P3-A1, from 2.0 feet bgs in grid cell P3-B4, and from 3.0 feet bgs in grid cell P3-B7 and P3-B8. Note that the residential screening level for mercury was revised from 1.0 mg/kg to 0.67 mg/kg in April 2025. Based on the revised screening level, the vertical extent of mercury was not defined in boring P3-2. However, boring P3-2 is located within grid cell P3-B4 and the sample collected at 3.0 feet bgs from grid cell P3-B4 did not contain mercury greater than the screening criterion. Therefore, the vertical extent of mercury is defined in grid cell P3-B4. Based on the revised screening level, the vertical extent of mercury-affected soil has not been defined in grid cells P3-B7 and P3-B8.

One individual PAH, benzo(a)pyrene, was detected above its screening criterion in the sample collected at 1.0 foot bgs from boring P3-2. The calculated BaPe for this sample was below the screening criterion of 0.9 mg/kg.

2.2.4 Parcel 4

At Parcel 4, arsenic, lead, mercury, and PAHs were detected above screening criteria. The vertical extent of affected soil at Parcel 4 is shown on Figure 6a and a visual summary of the sampling results is presented on Figures 6b through 6d. Arsenic was detected above screening criteria in the sample collected at 1.0 foot bgs from boring P4-1 through P4-4 and in the samples collected from 2.5 feet bgs in borings P4-1 and P4-4. Lead and mercury were also detected above screening criteria in the sample collected at 1.0 foot bgs from boring P4-1. Mercury also was detected above the screening criteria in the sample collected at 1.0 foot bgs from boring P4-4. Based on the revised screening level, the vertical extent of mercury was not defined in boring P4-4. However, boring P4-4 is located within grid cell P4-B9 and mercury was not detected in the samples collected at 2.0 and 3.0 feet bgs from grid cell P4-B9. Therefore, the vertical extent of mercury is defined in grid cell P4-B9.

In the grid cell samples, arsenic was detected above screening criteria in the samples collected from between 2.0 and 3.0 feet in grid cells P4-A1, P4-A2, P-4-A7, P4-A8, and P4-B2 through P4-B10. Lead and mercury were detected in the sample collected at 2.0 feet bgs at grid cell P4-B10.

Individual PAHs were detected above their screening criteria at the sample collected from 1.0 foot bgs at boring P4-1 (benzo(a)pyrene), the samples collected from 1.0 and 2.5 feet bgs at boring P4-4 and the sample collected at 2.0 feet bgs from grid cell P4-B10. The calculated value of BaPe for carcinogenic PAHs exceeded its screening threshold of 0.9 mg/kg in the sample collected at 1.0 foot bgs at boring P4-4.

2.2.5 Conceptual Site Model

Based on a comparison with screening levels, analytical data collected by GSI indicate that only Site soil is impacted. The source of the impacted soil appears to be the former railroad. The CSM regarding the source, nature and extent of COPCs in soil, and the potential for human receptors to contact COPCs in soil follows:

- Historical Operations and Source of COPCs
  - The Site is a former railroad corridor within a residential neighborhood. No buildings are associated with the Site, however, two residential structures, one detached garage, and one small shed partially encroach on the Site. The Site surfaces consist of mostly uncovered soils.
  - Typical environmental impacts on railroad corridors include deposition of petroleum-related constituents, metals, and weed control chemicals to shallow soil. Soil sampling has identified arsenic, lead, mercury, and PAHs as COPCs.
  - There is no record of industrial activities at the Site based on available Site history documentation.
- Nature and Extent of COPCs
  - The COPCs are not mobile in soil, and the impacts are typically limited to surficial soils.
  - Soil assessments have demonstrated that COPC impacts are primarily limited to depths less than 5 feet bgs.
  - Groundwater has not been encountered during investigation activities, which have extended to a maximum depth of 10 feet bgs. Site COPCs are only present in the vadose zone, are not mobile in soil, and have low solubility. As such, mobilization of COPCs to groundwater does not represent a complete exposure pathway.
  - Chlorinated volatile organic chemicals (VOCs) petroleum-based solvents, and gasoline are not associated with historical Site use. Heavy-end petroleum hydrocarbons (TPH-d and TPH-mo) may be associated with historical Site use and these constituents have a limited volatile component. Previous soil sampling results indicate TPH-d and TPH-mo are only present in Site soils at low concentrations. Therefore, VOCs are not considered Site COPCs and vapor intrusion is not identified as a complete exposure pathway.
- Conceptual Site Exposure Model
  - Under current conditions, access to the Site is restricted with chain link fencing and limited to workers involved in environmental characterization of the Site or construction work. Soil removal actions will be completed as described in this RAW, under regulatory oversight of DTSC.
  - The planned future use of the Site is a community garden, dog park, children's play area, and teaching garden. The community garden is currently planned to have edible produce for human consumption in both in-ground and raised planters. The receptors and associated exposure pathways are discussed in Section 2.3.1.

2.3 Human Health Risk Assessment

The screening level human health risk evaluation (SLRE) assessed the potential for human health impacts from chemicals released due to past activities at the Site. Potential human health risks associated with current and future receptor exposures to contaminated environmental media (i.e., surface and subsurface soil) were considered. Specifically, concentrations of Site COPCs reported in soil samples collected during two sampling events in July 2022 and January 2024 were evaluated by estimating theoretical cancer risks and non-cancer hazard indices using both default and Site-specific risk-based screening levels (RBSLs), where applicable.

The methodology used in this SLRE follows guidelines for the evaluation of risk provided by DTSC and USEPA in the following documents:

- Preliminary Endangerment Assessment Guidance Manual (DTSC, 2015)
- Human Health Risk Assessment (HHRA) Note 1, Default Human Health Exposure Factors (DTSC, 2019a)
- HHRA Note 3, DTSC-modified Screening Levels (DTSC-SLs; DTSC, 2025)
- HHRA Note 4, Screening Level Human Health Risk Assessments (DTSC, 2022)
- HHRA Note 10, Toxicity Criteria (DTSC, 2019b)
- USEPA Regional Screening Levels (RSLs), Generic Tables, November 2024 (USEPA, 2024a)
- USEPA RSL Calculator (USEPA, 2024b)

The results of this SLRE, along with an assessment of the potential for contaminated environmental media to impact environmental receptors, if applicable, were used to provide the basis for the planned soil removal at the Site. For risk management planning purposes, a post-remediation SLRE was also conducted assuming implementation of Alternative 2 (Soil Excavation and Off-Site Disposal) described in Section 4.1.2. The following sections describe the exposure assessment and how the SLRE was conducted.

2.3.1 Conceptual Site Exposure Model

The SLRE includes a conceptual site exposure model (CSEM), shown in Figure 7. The CSEM considers the source of contamination and fate and transport properties of the COPCs within the surrounding environment to identify possible exposure pathways that are appropriate and potentially complete for each hypothetical human receptor and corresponding exposure scenarios. Exposure was evaluated for both potential current and future receptors where applicable to allow for an evaluation of long-term risk management options. An exposure pathway typically includes the following elements:

1. A source of chemical (contaminant) and mechanism of chemical release;
2. An environmental retention or transport medium (e.g., air, groundwater);
3. A point of contact by the receptor with the environmental medium (in this case, soil); and,
4. A route of human intake (e.g., absorption, inhalation, ingestion).

Each of these elements must generally be present for an exposure pathway to be complete, although it is not necessary that environmental transport occurs when assessing exposure from direct contact (such as incidental ingestion and dermal contact with surface soil). This subsection presents a description of the CSEM for potentially exposed populations (also called receptors)

and potentially complete exposure pathways for this Site. The potentially complete exposure pathways and receptors determine the environmental media (e.g., soil) and associated screening levels (e.g., residential) used in the SLRE. Potentially exposed populations were based on current and planned future Site use, as it is currently understood. Receptors were assessed based on anticipated activity patterns that may put them at a higher potential for exposure to Site COPCs.

Based on the environmental investigations conducted at the Site to-date, COPCs are not mobile in Site soils, and impacts from historical Site operations are limited to surface and shallow subsurface soil 0-6 feet below ground surface. Historical Site use is described in Section 2.1, and current Site soil conditions are summarized in Section 2.2.

At present, no buildings are associated with the Site and each of the Site parcels consist of uncovered soils. Access to the Site is currently restricted with chain link fencing and limited to workers involved in environmental characterization of the Site or construction work. The planned future use of the four Site parcels following the planned soil removal action includes a community garden, dog park, children's play area, and teaching garden. The community garden is currently planned to have edible produce for human consumption in both in-ground and raised planters. Five potential exposure scenarios were identified in the SLRE and are outlined in the CSEM shown in Figure 7:

1. Hypothetical future child and adult recreational user – this scenario evaluates potential exposures by a future child and adult receptor that may utilize the Site for recreational activities following the planned soil removal.
2. Hypothetical future maintenance worker – this scenario evaluates potential exposures by a future maintenance worker that may perform cleaning, landscaping, or other general Site maintenance following the planned soil removal.
3. Hypothetical future docent – this scenario evaluates potential exposures by a future docent that may be present at the Site for instructional activities associated with the teaching garden following the planned soil removal.
4. Hypothetical current and future resident –
    a. The hypothetical current resident scenario assumes no remediation/mitigation of Site parcel soils and is not informed by the planned soil removal. This scenario is considered a baseline scenario for the SLRE.
    b. The hypothetical future resident scenario assumes completion of the planned soil removal. This scenario evaluates potential exposures to a hypothetical Site resident following the planned soil removal to support an evaluation of the need for future land use restrictions.
5. Hypothetical current and future construction worker – construction workers may be present at the Site for intrusive activities in surface and subsurface soil.
    a. The hypothetical current construction worker scenario assumes no remediation/mitigation of Site parcel soils and is not informed by the planned soil removal. This scenario is considered a baseline scenario for the SLRE.
    b. The hypothetical future construction worker scenario assumes completion of the planned soil removal and evaluates potential exposures by a construction worker following Site remediation and redevelopment.

The Site receptors identified in the CSEM may be exposed to COPCs in soil via direct contact pathways (i.e., incidental ingestion, inhalation of particulates and volatile compounds, and dermal

absorption) following the completion of the planned soil removal and Site redevelopment activities. The hypothetical current/future resident and hypothetical current/future construction worker exposure scenarios are considered protective of hypothetical future recreational users, hypothetical future maintenance workers, and hypothetical future docents based on anticipated activity patterns, conservative exposure factors (e.g., exposure duration), and USEPA and DTSC guidance regarding sensitive receptor exposure assumptions. Therefore, the hypothetical current/future resident and hypothetical current/future construction worker receptors were selected for quantitative assessment in the SLRE.

2.3.2 Soil Exposure Point Concentrations

Exposure scenarios are evaluated quantitatively by calculating the magnitude, frequency, and duration of exposure. A key component of estimating exposure is the calculation of medium-specific exposure point concentrations (EPCs). USEPA defines the Reasonable Maximum Exposure (RME) as the highest exposure that is reasonably expected to occur at a Site (USEPA, 1989). At the request of DTSC, the maximum reported concentrations of COPCs in soil samples collected at depths of 0 to 6 feet bgs were selected as soil EPCs for the baseline scenario. If all samples for a given COPC were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value. Thus, an RME approach was not applied to select EPCs in this SLRE, and a more conservative approach was applied.

An exposure unit (EU) is an area throughout which a particular receptor may encounter an environmental medium (USEPA, 2002). EUs are the spatial constructs over which risk to receptors are estimated. For this SLRE, EUs for Site receptors were defined as individual Site parcels, given that each parcel will be developed for a separate use and potential receptors are unlikely to visit all four parcels. For current receptors, the maximum reported concentrations of COPCs in soil samples were selected as the EPCs within each EU (i.e., parcel).

To estimate potential exposures by hypothetical future receptors following the completion of the planned soil removal, EPCs were selected based on soil samples that are representative of “left in place” concentrations following the planned soil removal. That is, only “left in place” soil samples were considered for the selection of EPCs for the hypothetical future resident and hypothetical future construction worker receptors in the SLRE. For COPCs that were not detected in “left in place” soil samples within an individual EU, the maximum laboratory reporting limit was selected as the surrogate EPC, if available.

For some grid cells within EUs, the soil samples that define the depth of the planned excavation (i.e., the extent of Site characterization) were not analyzed for every metal COPC because the deepest soil sample was only analyzed for arsenic, lead, and mercury, consistent with the Additional Soil Sampling Work Plan (GSI, 2023). Due to this Site assessment approach, an EPC cannot be selected for certain metal COPCs from “left in place” soil samples to estimate exposures by hypothetical future receptors; only EPCs for metals COPCs arsenic, lead, and mercury were available for the hypothetical future receptor evaluation, based on the deepest soil sample that was analyzed as a COPC.

BaPe concentrations were calculated to present the analytical results for the following carcinogenic PAHs as a single concentration: benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. BaPe concentrations are presented to provide context to the analytical results for carcinogenic PAHs. The “benzo(a)pyrene-like” carcinogenic PAHs were individually evaluated in the quantitative assessment. Therefore, BaPe was not quantitatively evaluated as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs. BaPe concentrations

are presented for soil collected at each Site parcel in Table 3. EPCs were selected for the individual PAHs for the evaluation of carcinogenic risks and non-carcinogenic hazards, and BaPe background levels were used to compare BaPe and arsenic concentrations with naturally occurring ambient conditions.

The EPCs selected for hypothetical current receptors are summarized in Appendix B Tables B-1 through B-4, and EPCs selected for hypothetical future receptors are summarized in Appendix B Tables B-5 through B-8.

2.3.3 Soil Risk-Based Screening Levels

Soil screening levels recommended by DTSC were used to evaluate potential exposures by a hypothetical current/future resident. In accordance with the DTSC Toxicity Criteria Rule for Human Health Risk Assessments, analytical results for soil samples were evaluated by comparison to residential screening levels published by DTSC in HHRA Note 3, which are referred to as "DTSC-SLs" (DTSC, 2025). For constituents that are not listed in HHRA Note 3, the analytical results were compared to the Regional Screening Levels (RSLs) published by the USEPA. The applicable DTSC-SLs and USEPA RSLs are collectively referred to hereinafter as "screening levels" or "SLs". The SLs are derived by USEPA and DTSC using standard default exposure assumptions that represent RME conditions and USEPA or DTSC-recommended toxicity values.

DTSC-SLs and USEPA RSLs are not published for a construction worker. Therefore, construction worker risk-based screening levels (RBSLs) were calculated using the USEPA RSL Calculator (USEPA, 2024b), DTSC-recommended exposure parameters for a construction worker (DTSC, 2019a), and toxicity criteria recommended by DTSC (DTSC, 2019b). The DTSC-required toxicity criteria for a subset of Site COPCs are presented in Appendix B Table B-9. The USEPA RSL calculator input values incorporating DTSC-required toxicity criteria used to calculate construction worker RBSLs for this subset of Site COPCs are presented in Appendix B Table B-10, and output summary spreadsheets are presented in Appendix B Table B-11. For COPCs that did not have DTSC-required toxicity criteria, the USEPA RSL calculator input values used to calculate construction worker RBSLs are presented in Appendix B Table B-12, and the RSL calculator output summary spreadsheets are presented in Appendix B Table B-13.

Construction worker RBSLs are not available with the USEPA RSL calculator for lead. Therefore, potential exposures to lead by a construction worker were evaluated using a construction worker DTSC-SL for lead in soil, which was estimated using DTSC's LeadSpread-9 blood-lead model (DTSC, 2022c) with a soil adherence rate consistent with DTSC's recommendation for a construction worker (DTSC, 2014). The LeadSpread-9 spreadsheet is included in Appendix B Table B-14.

DTSC-SLs and USEPA RSLs are not available for total petroleum hydrocarbon (TPH) mixtures. Therefore, analytical results for TPH as diesel (TPH-d) and TPH as motor oil (TPH-mo) are evaluated by comparison to Environmental Screening Levels (ESLs) published by the San Francisco Bay Regional Water Quality Control Board (Water Board, 2019). The USEPA RSLs, DTSC-SLs, and Water Board ESLs are collectively referred to as risk-based screening levels (RBSLs) in this SLRE.

The residential RBSLs are considered protective of potential exposures by a recreational user and docent, since a resident is expected to come into contact with soil more frequently than a recreational user or docent. Specifically, the resident RBSLs incorporate an exposure frequency of 350 days per year for 26 years (20 adult years and 6 child years). Similarly, the construction worker RBSLs are considered protective of potential exposures by a maintenance worker, since

a construction worker is expected to come into contact with soil 250 days per year for 1 year with an intensity that is consistent with intensive, soil disturbing activities.

The soil RBSLs selected to evaluate carcinogenic risks and noncarcinogenic hazards within each Site parcel are presented in Appendix C Tables C-1 through C-4 for the hypothetical current resident and Tables C-5 through C-8 for the hypothetical current construction worker.

Potential Exposures to Lead in Soil

The potential for human health effects caused by lead is uniquely measured based on estimated blood-lead concentrations. In this SLRE, the potential human health effects caused by lead were evaluated by comparison to the DTSC soil SL of 80 mg/kg for hypothetical current/future residents, and the Site-specific LeadSpread-9 calculated soil RBSL of 136 mg/kg (see Appendix B Table B-14) for hypothetical current/future construction workers:

- *Hypothetical Current/Future Resident:* The maximum detected concentration for lead in soil is 280 mg/kg, which exceeds the residential DTSC-SL of 80 mg/kg.
- *Hypothetical Current/Future Construction Worker:* The maximum detected concentration for lead in soil is 280 mg/kg, which exceeds the construction worker RBSL of 136 mg/kg.

Background Evaluation

As described above, arsenic and PAHs are naturally occurring in soil at concentrations exceeding risk-based screening criteria. Therefore, as part of this SLRE and consistent with DTSC guidance (DTSC2022), concentrations of arsenic and benzo(a)pyrene-like carcinogenic PAHs also were evaluated by comparison to background conditions:

- Arsenic concentrations are evaluated by comparison to an evaluation of background concentrations in urbanized flatland soils within the San Francisco Bay Area, completed at San Francisco State University in coordination with California Regional Water Quality Control Board, San Francisco Bay Region (Water Board) staff, that established an upper-limit background concentration of 11 mg/kg (Duvergé, 2011). The value of 11 mg/kg is selected as the estimated background level.
- PAHs are typically found at higher ambient concentrations in urban areas, near heavily traveled roadways, in areas that have experienced longer human occupation, and areas downwind of urban areas (Wang et al., 2008 and Nam et al., 2008 in DTSC, 2009). For BaPe, an estimate of 0.9 mg/kg for the “ambient” concentration for BaPe was established for northern California by DTSC (2009); this value was selected as the representative BaPe background level. DTSC guidance states that “the 0.9 mg/kg BaP equivalent value does not represent the final remedial goal. Rather, completion of the remedy is based on demonstration that the residual soil concentrations are ‘ambient-like’.”

For this SLRE, the quantitative risk calculation was performed with and without naturally occurring concentrations of arsenic and BaPe to provide Site-related and total risk estimates.

2.3.4 Risk Characterization

Potential human health risks associated with estimated exposures to COPCs in soil are quantified using the comparison of exposure point concentrations to RBSLs. Theoretical excess lifetime cancer risks (ELCRs) and noncancer hazard quotients (HQs) for each COPC were quantified by multiplying each ratio of chemical concentration to carcinogenic or noncarcinogenic screening level by the target risk level or HQ used in the development of the RBSL (i.e., cancer risk target level of one-in-one million or 1×10^{-6}; HQ of 1).

Potential exposures to COPCs in soil were evaluated with current exposure scenarios that assume no remediation is performed to provide a baseline evaluation in support of remediation decision-making. In addition, a background evaluation of current exposure scenarios was performed to provide total risk estimates excluding background (i.e., non-Site related) COPC contributions. Finally, potential exposures to COPCs in soil were evaluated under hypothetical future exposure scenarios to evaluate the planned soil excavation.

2.3.4.1 Carcinogenic Health Risks

Theoretical carcinogenic health risks are defined in terms of the increased probability of an individual developing cancer as the result of exposure to a given chemical at a given concentration. Theoretical ELCRs were estimated for the COPCs in soil using the following general relationship (the calculation presented below is specific for exposure to soil):

$$\text{ELCR} = \frac{C_{soil}}{RBSL_{soil-cancer}} \times TR$$

Where:

ELCR	=	Theoretical excess lifetime cancer risk
C_{soil}	=	Soil concentration (mg/kg); represented as the EPC
RBSL	=	Soil RBSL, carcinogenic risk (mg/kg)
TR	=	Target Risk (1×10^{-6})

The cumulative ELCR associated with COPCs detected in a specific media is estimated by summing the ELCRs for each chemical.

USEPA and DTSC have defined an acceptable level of risk in slightly different ways. USEPA considers one-in-one million (1×10^{-6}) to one-in-ten thousand (1×10^{-4}) to be the target range for acceptable risks at sites where remediation is considered (USEPA, 1990a, 1990b). Estimates of ELCR of less than 1×10^{-6} are considered so low as to warrant no further investigation or analysis (USEPA, 1990a). DTSC has established 1×10^{-6} as the "point of departure" for risk management decisions. In general, further action is not warranted if cumulative ELCRs are below the 1×10^{-6} cancer risk target level.

Hypothetical Current Receptors - Baseline Scenario (Carcinogenic Health Risk)

The ELCR for each COPC was estimated using the maximum detected COPC concentrations selected as the EPC. ELCRs estimated for potential exposures to COPCs in soil under the baseline scenario (hypothetical current resident, hypothetical current construction worker) for each Site parcel are presented in Appendix C Tables C-1 through C-8 and summarized below:

- *Hypothetical Current Resident, Baseline Scenario*: The cumulative ELCRs for a hypothetical current resident associated with potential exposures to COPCs detected in soil samples were $4\text{x}10^{-3}$ to 1×10^{-2}. The cumulative ELCRs at all four parcels exceed DTSC's "point of departure" (i.e., 1×10^{-6}). The primary COPC contributor to cumulative ELCR exceedances at each parcel is arsenic. These results suggest that current Site conditions may present unacceptable ELCRs to hypothetical current residents under the baseline scenario.
    - Arsenic is associated with an ELCR that individually exceeds the DTSC's "point of departure" at each parcel, and the arsenic EPCs exceed the background level of 11 mg/kg.

- Benzo(a)pyrene is associated with an ELCR that individually exceeds the DTSC's "point of departure" at each parcel. At Parcels 1, 2, and 3, the maximum BaPe concentrations are below the background level of 0.9 mg/kg, indicating BaPe concentrations are consistent with background conditions at these Site parcels. At Parcel 4, the maximum BaPe concentration exceeds the background level of 0.9 mg/kg, indicating that BaPe concentrations at Parcel 4 exceed the background level.

- Hypothetical Current Construction Worker, Baseline Scenario: The cumulative ELCRs for construction workers associated with potential exposures to COPCs detected in soil samples were 5×10^{-5} to 1×10^{-4}. The ELCRs at all four parcels exceed DTSC's "point of departure" (i.e., 1×10^{-6}). The primary contributor to ELCRs at each parcel is arsenic. These results indicate that current Site conditions may present unacceptable ELCRs to hypothetical current construction workers under the baseline scenario. For each parcel, arsenic is the only COPC associated with an ELCR that individually exceeds the DTSC's "point of departure."
  - Arsenic is associated with an ELCR that individually exceeds the DTSC's "point of departure" at each parcel, and the arsenic EPCs exceed the background level of 11 mg/kg.

The cumulative ELCRs for a hypothetical current resident and hypothetical current construction worker are summarized below:

Exposure Unit	ELCR	
	Hypothetical Current Resident	Hypothetical Current Construction Worker
Parcel 1	$5x10^{-3}$	$6x10^{-5}$
Parcel 2	$1x10^{-2}$	$1x10^{-4}$
Parcel 3	$4x10^{-3}$	$5x10^{-5}$
Parcel 4	$4x10^{-3}$	$6x10^{-5}$

Individually, the only COPCs associated with ELCRs for a hypothetical current resident or hypothetical current construction worker are arsenic and BaPe.

Hypothetical Future Receptors – Planned Soil Removal Scenario (Carcinogenic Health Risk)

To support remediation planning, ELCRs were estimated using EPCs selected to estimate potential receptor exposures following the planned soil removal (Section 2.3.2). ELCRs estimated for potential exposures to COPCs in soil following the planned soil removal for a hypothetical future resident and a hypothetical future construction worker are presented in Appendix C Tables C-9 through C-16 and summarized below. Given that a hypothetical future resident is expected to come into direct contact with soil more frequently than a hypothetical future recreational user, the evaluation of a hypothetical future resident is considered protective of a hypothetical future recreational user. Similarly, since a hypothetical future construction worker is expected to come into direct contact with soil more frequently than a hypothetical future maintenance worker and a hypothetical future docent, the evaluation of a hypothetical future construction worker is considered protective of a hypothetical future maintenance worker and a hypothetical future docent.

The results of the ELCR evaluation under the planned soil removal scenario for hypothetical future residents and hypothetical future construction workers are presented in Appendix C Tables C-9 through C-16 and summarized below.

- *Hypothetical Future Resident, Planned Soil Removal Scenario:* The cumulative ELCRs in all parcels for a hypothetical future resident associated with potential exposures to COPCs in soil samples following the planned soil removal range from 3×10^{-4} to 4×10^{-4}. The ELCRs in all four parcels exceed DTSC's "point of departure" (i.e., 1×10^{-6}). The only detected COPC to individually contribute an ELCR exceeding 1×10^{-6} for a hypothetical future resident is arsenic.
    - Arsenic concentrations in soil following the planned soil removal are expected to be consistent with background conditions. That is, the EPCs for arsenic are less than or equal to the background level of 11 mg/kg. Excluding arsenic concentrations that are consistent with background conditions, the cumulative ELCRs for a hypothetical future resident associated with potential exposures to COPCs in soil samples following the planned soil removal are 1×10^{-6}.
    - The maximum BaPe concentrations are below the background level of 0.9 mg/kg, indicating BaPe concentrations are consistent with background conditions at these Site parcels.
    - These results indicate that future Site conditions under the planned soil removal scenario do not present unacceptable ELCRs to hypothetical future residents or less-sensitive Site receptors, including hypothetical future recreators.

Exposure Unit	Hypothetical Future Resident ELCR	
	Planned Soil Removal Scenario, Including COPCs Consistent with Background	Planned Soil Removal Scenario, Excluding COPCs Consistent with Background and Non-detect Pesticide Results
Parcel 1	$3x10^{-4}$	$3x10^{-7}$
Parcel 2	$3x10^{-4}$	$3x10^{-7}$
Parcel 3	$4x10^{-4}$	$1x10^{-6}$
Parcel 4	$3x10^{-4}$	$3x10^{-7}$

- *Hypothetical Future Construction Worker, Planned Soil Removal Scenario:* The cumulative ELCRs for a hypothetical future construction worker associated with potential exposures to COPCs in soil samples following the planned soil removal are 4×10^{-6} to 5×10^{-6}. The ELCR in all four parcels exceeds DTSC's "point of departure" (i.e., 1×10^{-6}). The only COPC to individually contribute an ELCR exceeding 1×10^{-6} for a hypothetical future construction worker is arsenic.
    - Arsenic concentrations in soil following the planned soil removal are expected to be consistent with background conditions. That is, the EPCs for arsenic are less than or equal to the background level of 11 mg/kg. Excluding arsenic concentrations that are consistent with background conditions, the ELCRs for a hypothetical future construction worker associated with potential exposures to COPCs in soil samples following the planned soil removal are 8×10^{-7} to 3×10^{-8}.

- These results indicate that future Site conditions under the planned soil removal scenario do not present unacceptable ELCRs to hypothetical future construction workers or less-sensitive Site receptors, including hypothetical future maintenance workers and hypothetical future docents.

Exposure Unit	Hypothetical Future Construction Worker ELCR	
	Planned Soil Removal Scenario, Including COPCs Consistent with Background	Planned Soil Removal Scenario, Excluding COPCs Consistent with Background
Parcel 1	$5x10^{-6}$	$8x10^{-7}$
Parcel 2	$4x10^{-6}$	$3x10^{-8}$
Parcel 3	$5x10^{-6}$	$2x10^{-7}$
Parcel 4	$5x10^{-6}$	$3x10^{-8}$

The cumulative ELCRs for a hypothetical future resident and hypothetical future construction worker under the planned soil removal scenario are summarized below, with and without the contribution of arsenic and BaPe at naturally occurring concentrations and/or concentrations consistent with the urban environment:

Exposure Unit	ELCR			
	Hypothetical Future Resident, Planned Soil Removal Scenario		Hypothetical Future Construction Worker, Planned Soil Removal Scenario	
	Including COPCs Consistent with Background	Excluding COPCs Consistent with Background	Including COPCs Consistent with Background	Excluding COPCs Consistent with Background
Parcel 1	$3x10^{-4}$	$3x10^{-7}$	$5x10^{-6}$	$8x10^{-7}$
Parcel 2	$3x10^{-4}$	$3x10^{-7}$	$4x10^{-6}$	$3x10^{-8}$
Parcel 3	$4x10^{-4}$	$1x10^{-6}$	$5x10^{-6}$	$2x10^{-7}$
Parcel 4	$3x10^{-4}$	$3x10^{-7}$	$5x10^{-6}$	$3x10^{-8}$

2.3.4.2 Non-Carcinogenic Health Risks

Potential adverse noncarcinogenic health effects were evaluated using the hazard index approach (HI) and soil EPCs of COPCs using the following general relationship:

$$\text{Hazard Quotient} = \frac{C_{soil}}{RBSL_{soil-noncancer}} \times THQ$$

Where:

C_{soil} = Soil concentration (mg/kg); represented as the EPC
RBSLs = Soil RBSL, noncarcinogenic hazard (mg/kg)
THQ = Target Hazard Quotient (1)

The HI associated with COPCs detected in soil is estimated by summing the hazard quotient (HQ) for each chemical. DTSC has established a HI of 1 as the "point of departure" for risk management decisions. HIs below 1 will be interpreted to mean that adverse non-cancer effects are unlikely, and generally do not warrant further action (DTSC, 2011). HIs less than 1.5 are rounded down to 1, and HIs greater than or equal to 1.5 are rounded up to 2, consistent with USEPA guidance and standard risk assessment practice. HQ or HI values greater than 1 (i.e., rounded HQs or HIs ≥ 2) are interpreted to mean that there may be a concern for potential adverse non-cancer effects due to an exceedance of the risk target level, and closer evaluation of conservatism in the risk characterization may be necessary to better derive a predictive hazard estimate.

Hypothetical Current Receptors - Baseline Scenario (Non-Carcinogenic Health Risk)

The HQ for each COPC was estimated using the maximum detected COPC concentrations selected as the EPC. Cumulative HIs estimated for potential exposures to COPCs in soil under the baseline scenario (hypothetical current resident, hypothetical current construction worker) for each Site parcel are presented in Appendix C Tables C-1 through C-8 and summarized below:

- *Hypothetical Current Resident, Baseline Scenario:* The HIs for a hypothetical current resident associated with potential exposures to COPCs in soil samples were 332 to 777. The cumulative HIs at all four Site parcels exceed DTSC's "point of departure" (i.e., 1). The primary COPC contributor to cumulative HI exceedances at each parcel is arsenic. These results indicate that current Site conditions may present unacceptable non-cancer risks to hypothetical current residents.
    - Arsenic is associated with an HQ that individually exceeds DTSC's "point of departure" at each parcel, and the arsenic EPCs exceed the background level of 11 mg/kg.
    - Thallium is associated with an HQ that individually exceeds DTSC's "point of departure" at Site Parcels 1, 3 and 4. However, these exceedances are a result of maximum laboratory reporting limit concentrations used as surrogate EPC values for non-detections of thallium in soil samples and likely overestimate potential non-cancer hazards.
    - Mercury is associated with an HQ that individually exceeds DTSC's "point of departure" in Parcels 2, 3, and 4.
    - Delta-BHC is associated with an HQ that individually exceeds DTSC's "point of departure" in Parcels 1, 2, 3, and 4. However, delta-BHC was not detected in any soil samples collected at the Site. These HQ exceedances are a result of maximum laboratory reporting limit concentrations used as surrogate EPC values for non-detections of delta-BHC in soil samples and likely overestimate potential non-cancer hazards.
    - 1-Methylnaphthalene is associated with an HQ that individually exceeds DTSC's "point of departure" in Parcel 3. This HQ exceedance is a result of using the maximum laboratory reporting limit concentration as a surrogate EPC value for non-detections of 1-methylnaphthalene in all Parcel 3 soil samples, and likely overestimates potential non-cancer hazards. 1-Methylnaphthalene was not detected in any soil samples in Parcels 2, 3, or 4, and the only detection of 1-methylnapthalene at Parcel 1 was below the DTSC-SL.
- *Hypothetical Current Construction Worker, Baseline Scenario:* The HIs for a hypothetical current construction worker associated with potential exposures to COPCs in soil samples were 107 to 273. The cumulative HIs at all four Site parcels exceed DTSC's "point of

departure" (i.e., 1). The only COPC contributor to cumulative HI exceedances at each parcel is arsenic. These results indicate that current Site conditions may present unacceptable non-cancer risks to hypothetical current construction workers.

- Arsenic is associated with an HQ that individually exceeds DTSC's "point of departure" at each parcel, and the arsenic EPCs exceed the background level of 11 mg/kg.

The cumulative HIs for a hypothetical current resident and hypothetical current construction worker are summarized below:

Exposure Unit	Hypothetical Current Resident Non-Cancer HI	Hypothetical Current Construction Worker Non-Cancer HI
Parcel 1	374	132
Parcel 2	777	273
Parcel 3	332	107
Parcel 4	363	124

Individually, the only COPC associated with HI exceedances for a hypothetical current resident or hypothetical current construction worker is arsenic.

Hypothetical Future Receptors – Planned Soil Removal Scenario (Non-Carcinogenic Health Risk)

To support remediation planning, HIs were estimated using EPCs selected to estimate potential receptor exposures following the planned soil removal (Section 2.3.2). HIs estimated for potential exposures to COPCs in soil following the planned soil removal for a hypothetical future resident and a hypothetical future construction worker are presented in Appendix C Tables C-9 through C-16 and summarized below. Given that a hypothetical future resident is expected to come into direct contact with soil more frequently than a hypothetical future recreational user, the evaluation of a hypothetical future resident is considered protective of a hypothetical future recreational user. Similarly, since a hypothetical future construction worker is expected to come into direct contact with soil more frequently than a hypothetical future maintenance worker and a hypothetical future docent, the evaluation of a hypothetical future construction worker is considered protective of a hypothetical future maintenance worker and a hypothetical future docent.

The results of the non-cancer hazard evaluation for a hypothetical future resident and a hypothetical future construction worker under the planned soil removal scenario is presented in Appendix C Tables C-9 through C-16 and summarized below:

- *Hypothetical Future Resident, Planned Soil Removal Scenario:* The cumulative HIs for a hypothetical future resident associated with potential exposures to COPCs in soil samples following the planned soil removal range from 26 to 36, which includes the summed HQs for non-detected COPCs where the maximum laboratory reporting limit was selected as the surrogate EPC. The HIs in all parcels exceed DTSC's "point of departure" (i.e., 1). The primary COPCs contributing to the HI exceedances of 1 for a hypothetical future resident are arsenic, delta-BHC, cobalt, thallium, and 1-methylnaphthalene.
  - Arsenic concentrations in soil following the planned soil removal are expected to be consistent with background conditions. That is, the EPCs for arsenic are less than or equal to the background level of 11 mg/kg.

- The inclusion of pesticides that were not reported in at least one soil sample collected at the Site likely overestimates the estimates of potential non-cancer hazards. For example, delta-BHC is an industrial grade organochlorine pesticide that is typically part of a mixture of several isomers, including alpha-BHC, beta-BHC, and gamma-BHC (ATSDR, 2021). Neither delta-BHC nor any of its associated isomers were detected in any of the 27 soil samples collected at the Site during the 2022 and 2024 soil sampling events. These lines of evidence suggest delta-BHC is likely not present at the Site at concentrations that would present unacceptable risk to human health. The inclusion of the HQ for non-detect pesticide results represents an overestimate of potential non-cancer hazards.
- At Parcel 1, cobalt concentrations in soil following the planned soil removal are expected to be consistent with background conditions. Based on Diamond et al. (2009), the upper estimate for regional background levels of cobalt is 23 mg/kg in the Berkeley/Oakland Hills of Alameda County, California, which suggests the cobalt concentration measured at the Site is consistent with regional background levels. Additionally, this cobalt concentration was not replicated in the duplicate soil sample collected at the same depth and Parcel 1 location [sample ID P1-A8-1.0]). These lines of evidence suggest cobalt is likely not present at the Site at concentrations that would present unacceptable risk to human health. The inclusion of the HQ for cobalt likely represents an overestimate of potential non-cancer hazards.
- At Parcel 1, the maximum laboratory reporting limit for thallium was selected as the surrogate EPC, and associated HI is 4. However, thallium was not detected in soil samples at the Site, and the inclusion of the HQ for thallium likely represents an overestimate of potential non-cancer hazards.
- At Parcel 3, 1-methylnaphthalene was not detected in any soil samples collected at Parcel 3, and the maximum laboratory reporting limit was selected as the EPC. The inclusion of the HQ based on the maximum reporting limit for 1-methylnaphthalene likely represents an overestimate of potential non-cancer hazards.
- Excluding arsenic, cobalt, thallium, pesticides that were not detected in any soil samples, and 1-methylnaphthalene (at Parcel 3 only), the HIs estimated for Site are below DTSC's "point of departure". These results indicate that future Site conditions under the planned soil removal scenario do not present unacceptable non-cancer hazards to hypothetical future residents, or less-sensitive Site receptors, including hypothetical future recreators.

Exposure Unit	Hypothetical Future Resident HIs	
	Planned Soil Removal Scenario, Including COPCs Consistent with Background	Planned Soil Removal Scenario, Excluding pesticides that were not detected in any soil samples and metals consistent with background
Parcel 1	26	0.9
Parcel 2	27	0.8
Parcel 3	36	0.8 #
Parcel 4	29	0.7

Note: # Parcel 3 HI also excludes non-detect results for 1-methylnaphthalene, which was not detected in soil samples at Parcel 3.

- *Hypothetical Future Construction Worker, Planned Soil Removal Scenario:* The cumulative HIs for a hypothetical future construction worker associated with potential exposures to COPCs in soil samples following the planned soil removal range from 9 to 10. The HIs in all four parcels exceed DTSC's "point of departure" (i.e., 1). The primary COPC to individually contribute an HI exceeding 1 for a hypothetical future construction worker is arsenic.
    - Arsenic concentrations in soil following the planned soil removal are expected to be consistent with background conditions. That is, the EPCs for arsenic are less than or equal to the background level of 11 mg/kg. Excluding arsenic concentrations that are consistent with background conditions, the cumulative HIs for a hypothetical future construction worker associated with potential exposures to COPCs in soil samples following the planned soil removal range from 0.8 to 0.06.
    - These results indicate that future Site conditions under the planned soil removal scenario do not present unacceptable non-cancer hazards to hypothetical future construction workers, or less-sensitive Site receptors, including hypothetical future maintenance workers and hypothetical future docents.

Exposure Unit	Hypothetical Future Construction Worker HIs	
	Planned Soil Removal Scenario, Including COPCs Consistent with Background	Planned Soil Removal Scenario, Excluding COPCs Consistent with Background
Parcel 1	10	0.8
Parcel 2	9	0.06
Parcel 3	10	0.4
Parcel 4	10	0.06

The cumulative HIs for a hypothetical future resident and hypothetical future construction worker under the planned soil removal scenario are summarized below, with and without the contribution of arsenic at naturally occurring concentrations and/or concentrations consistent with the urban environment:

Exposure Unit	Hazard Index			
	Hypothetical Future Resident, Planned Soil Removal Scenario		Hypothetical Future Construction Worker, Planned Soil Removal Scenario	
	Including COPCs Consistent with Background	Excluding pesticides that were ND in any soil samples, and COPCs consistent with background	Including COPCs Consistent with Background	Excluding COPCs Consistent with Background
Parcel 1	26	0.9	10	0.8
Parcel 2	27	0.8	9	0.06
Parcel 3	36	0.8[#]	10	0.4
Parcel 4	29	0.7	10	0.06

Note: [#] Parcel 3 HI also excludes non-detect results for 1-methylnaphthalene, which was not detected in soil samples at Parcel 3.

Potential Lead Exposure

The potential for human health effects caused by lead is uniquely measured based on estimated blood-lead concentrations. In this SLRE, the potential human health effects caused by lead were evaluated by comparison to the DTSC-modified screening level of 80 mg/kg for residential soil, and the construction worker soil RBSL of 136 mg/kg calculated using the DTSC LeadSpread-9 worksheet (see Appendix B Table B-14). The maximum detected concentration for lead in soil samples under the baseline scenario is 490 mg/kg, which indicates current Site conditions may present unacceptable risks to a hypothetical current resident and hypothetical current construction worker. However, under the planned soil removal scenario, the maximum detected concentration for lead in soil samples is 71 mg/kg. These results indicate that future Site conditions under the planned soil removal scenario do not present unacceptable increase in blood lead levels to a hypothetical future resident and hypothetical future construction worker. These results also are protective of a hypothetical future recreator, hypothetical future docent, and hypothetical future maintenance worker.

2.3.5 SLRE Summary and Conclusions

Potential human health risks related to exposures to COPCs detected in soil were evaluated with respect to the maximum concentrations detected in soil. Cumulative ELCRs and HIs were calculated under the baseline scenario to estimate potential cancer risks and non-cancer hazards to hypothetical current residents and hypothetical current construction workers prior to the planned soil removal. The results of the SLRE indicate arsenic and BaPe are the only contaminants of concern (COCs) driving unacceptable cancer risks and non-cancer hazards to hypothetical current residents and hypothetical current construction workers under the baseline scenario.

To support remediation planning, cumulative ELCRs and HIs were estimated using EPCs selected to estimate hypothetical future resident and hypothetical future construction worker exposures following the planned soil removal, with and without the contribution of arsenic, cobalt, BaPe at background levels, and COPCs that were non-detect (e.g., delta-BHC, 1-methylnaphthalene, thallium). Following remediation under the planned soil removal scenario, arsenic is less than or equal to the background level of 11 mg/kg. The planned soil removal also addresses BaPe concentrations that exceed the background level (and contributed to an estimated ELCR exceeding the risk target level). Following the planned soil removal scenario, future Site conditions do not present an unacceptable cancer risk or non-cancer hazard to a hypothetical future resident and hypothetical future construction worker. The results of this evaluation also are protective of a hypothetical future recreator, hypothetical future maintenance worker, and hypothetical future docent, since the hypothetical future resident and hypothetical future construction worker are expected to contact soil more frequently than a hypothetical future recreational user, docent, or maintenance worker.

2.4 Ecological Risks to Threatened and Endangered Species

The potential for Threatened and Endangered (T&E) species to be adversely impacted by Site activities related to remedial actions under the planned soil removal was evaluated using the U.S. Fish and Wildlife Service online IPaC tool. The tool allows users to search the USFWS database for potential Threatened and Endangered species residing in a geographic area, which may be affected by anthropogenic activities, as well as identify known critical habitats (e.g., wetlands) that may be present.

Given the upland urban location and lack of permanent and ephemeral waterbodies at the Site, the following T&E species were identified using the IPaC tool as species which may be affected by future Site remediation and redevelopment activities (see Appendix D):

- Salt marsh harvest mouse (*Reithrodontomys raviventris*) – Endangered
- California least tern (*Sternula antillarum browni*) – Endangered
- California ridgway's rail (*Rallus obsoletus obsoletus*) – Endangered
- Western snowy plover (*Charadrius nivosus nivosus*) – Threatened
- Alameda whipsnake (*Masticophis lateralis euryxanthus*) – Threatened
- Monarch butterfly (*Danaus plexippus*) – Candidate
- Santa Cruz tarplant (*Holocarpha macradenia*) – Threatened

GSI staff will monitor for these T&E species during future Site remediation and redevelopment activities to ensure no adverse effects to sensitive ecological receptors result from the planned soil removal. Appendix D includes pictures and descriptions of the T&E species listed above and will serve as a field guide for GSI staff during on-Site activities. If a T&E species is observed on-Site during remediation and redevelopment activities, GSI staff will promptly notify DTSC.

3.0 REMOVAL ACTION GOALS AND OBJECTIVES

The results of the Site characterization activities have indicated the presence of arsenic and, to a lesser extent lead, mercury, and PAHs, in shallow soil at concentrations greater than residential screening levels. This section presents removal action objectives that are established to be protective of human health and the environment. Additionally, this section includes the findings of a review of pertinent laws, regulations and other criteria that was performed to identify applicable or relevant and appropriate requirements (ARARs) and other criteria to be considered for remediating the Site.

3.1 Removal Action Objectives

RAOs have been established that are protective of human health and the environment and reduce the potential for exposure to the COPCs in soil encountered at the Site. The RAOs are presented below.

- Provide for a Site that can be redeveloped with no future restrictions on development or Site use.
- Remove COPC impacted soil that exceeds the Regional Screening Levels (RSLs) published by the U.S. Environmental Protection Agency (USEPA) for residential soil (USEPA, 2024), as endorsed or modified by DTSC (2022), or the background concentration, where the RSLs are lower than background.

The selected response action and removal goals developed and adopted for impacted soil at the Site will be responsive to these RAOs.

3.2 Applicable and Appropriate Requirements

Applicable or relevant and appropriate requirements or ARARs are federal and state environmental statutes, regulations, and standards. Applicable requirements are federal or state laws or regulations that specifically address a hazardous substance, pollutant, contaminant, removal action, or location. Relevant and appropriate requirements are requirements that, while not "applicable," address problems or situations sufficiently similar to those encountered that their use is well suited to the particular site. State requirements are ARARs only if they are more stringent than federal requirements.

In addition to ARARs, this analysis includes an evaluation of To-Be-Considered criteria ("TBCs"). TBCs are advisories, criteria, or guidance that may be considered for a particular action or specific issue, as appropriate. TBCs are not ARARs because they are neither promulgated nor enforceable.

The ARARs or TBCs may be: 1) chemical; 2) location; or 3) activity specific. Chemical-specific ARARs or TBCs are usually health- or risk-based numerical values or methodologies used to determine acceptable concentrations of chemicals that may be found in the environment. Location-specific ARARs or TBCs restrict actions or contaminant concentrations in certain environmentally sensitive areas. Examples of areas regulated under various federal laws include locations where endangered species or historically significant resources are present. Action-specific ARARs or TBCs are usually technology- or activity-based requirements or limitations on actions or conditions involving specific chemicals of concern. See Table 6 for a listing of ARARs and TBCs for the Site.

3.3 Removal Goals

Risk-based cleanup levels were selected for the Site based upon the RSLs published by the USEPA for residential soil (USEPA, 2024), as endorsed or modified by DTSC (2022), and background concentrations. The RSL, or the background concentration when it exceeds the RSL, is the removal goal for the Site. The cleanup goals for Site COPCs are as follows.

- The cleanup goal for arsenic is a maximum concentration of 11 mg/kg (regional background; Section 2.2.2).
- The cleanup goal for lead is a maximum concentration of 80 mg/kg (the default residential screening level developed by DTSC).

- The cleanup goal for mercury is a maximum concentration of 0.67 mg/kg (the default residential screening level developed by DTSC).
- The cleanup goal for PAHs is a maximum BaPe of 0.9 mg/kg (regional ambient level; Section 2.2.2).

4.0 ALTERNATIVES EVALUATION

The purpose of this Section of the RAW is to identify and screen possible removal action alternatives which may best achieve the RAOs discussed in Section 3.0. Removal action alternatives are screened and evaluated on the basis of their effectiveness, implementability, and cost.

4.1 Response Actions and Technologies

Typical remedies for sites where heavy metals and/or PAHs have been identified in soil include excavation and offsite disposal, excavation and onsite containment, capping in-place, and institutional controls. A No Further Action alternative and each of these four response actions have been assembled into candidate removal alternatives for the Site and are developed with respect to the above criteria and RAOs in the following sections. The candidate removal alternatives are:

- Alternative 1 – No Further Action
- Alternative 2 – Soil Excavation and Off-Site Disposal
- Alternative 3 – Soil Excavation, Off-Site Disposal, and On-Site Containment
- Alternative 4 – Capping in Place

4.1.1 Alternative 1 - No Further Action

As required by the DTSC, the No Further Action alternative has been included to provide a baseline for comparisons among other removal alternatives. The No Further Action alternative would not require implementing any remedial actions at the Site and no costs would be incurred. Site access would continue to be limited by the permanent chain link fencing. The restricted access would continue to prevent Site soil from being disturbed and no short-term risks to on-Site workers or the community would result from this alternative.

4.1.2 Alternative 2 - Soil Excavation and Off-Site Disposal

The Soil Excavation and Off-Site Disposal alternative would consist of removing and transporting impacted soil to an appropriate, permitted off-site facility for disposal. This alternative involves excavating chemically impacted soil with conventional grading equipment, such as loaders, backhoes, and/or other appropriate equipment. Excavation operations will generate dust emissions. Suppressants, water spray, and other forms of dust control may be required during excavation, and workers may be required to use personal protective equipment to reduce exposure to COPCs. It is anticipated that soil will be pre-characterized for waste disposal purposes and excavated soil will be directly loaded into trucks for transportation to an off-Site disposal facility.

To achieve the RAOs, soil at 19 grid cells within Parcels 1, 2 and 3 requires removal to depths of 5 feet bgs or greater (see Figure 3a, 4a, and 5a). These grid cells will require sloping of the sidewalls or an excavation support system to prevent impacting adjoining properties. Sloping may limit the volume of soil that can be removed along the edges of the property at these locations. Therefore, excavations at these areas may be accomplished using limited excavation support

systems, such as soldier-piles and lagging. Excavated soil will be hauled off-site to a disposal facility that is permitted to accept the characterized waste stream.

The depth of excavation in each grid cell will be determined based on the sampling conducted to date. Soil would be excavated to the depth corresponding to the deepest sample that did not contain concentrations of COPCs above cleanup goals. Previous site results will remain representative at the end of excavation activities because no earthmoving that would change the depth or re-distribute contamination will be performed and this will be verified by field personnel prior to backfilling. Therefore, with the exception of grid cells P3-B7 and P3-B8, confirmation soil sampling will not be necessary. Based on the April 2025 DTSC-SL for mercury, the vertical extent of mercury has not been delineated in grid cells P3-B7 and P3-B8. Therefore, one confirmation bottom sample would be collected from each of these grid cells for mercury analysis. Mercury concentrations in the additional soil samples would be evaluated by comparison to the residential DTSC-SL (0.67 mg/kg). If mercury is reported at concentrations exceeding the residential DTSC-SL, additional soil excavation and confirmation sampling would be performed in coordination with DTSC. If unanticipated subsurface conditions such as visible petroleum products or odorous soils are encountered during excavation activities lateral and vertical contingency confirmation samples will be collected for laboratory analysis.

The excavation area would include the area currently owned by the City and the area that will be deeded to the City after the lot line adjustments. The total volume of soil removed from the Site would be approximately 4,640 cubic yards and a similar volume of clean backfill would need to be imported.

4.1.3 Alternative 3 – Soil Excavation, Off-Site Disposal, and On-Site Containment

This alternative involves a combination of capping chemically impacted soils in place and removing chemically impacted soils. Under this alternative, soil in areas beneath hardscape (asphalt or concrete) in the planned Site redevelopment would be capped in place. Chemically impacted soil at areas which will not be hardscaped (e.g., landscaped areas, planting beds) will be excavated and transported to a permitted off-Site disposal facility. It is anticipated that less than 25 percent of the Site will be hardscaped (Appendix A).

Capping in place involves placing a barrier over chemically impacted soil such that direct human exposure is mitigated; the ongoing integrity of the barrier would be managed via a long-term risk management plan. A cap could consist of a combination of asphalt, and/or concrete paving.

In areas that are not planned to be hardscaped, chemically impacted soils would be excavated with conventional grading equipment, such as loaders, backhoes, and/or other appropriate equipment. Excavation operations will generate dust emissions. Suppressants, water spray, and other forms of dust control may be required during excavation, and workers may be required to use personal protective equipment to reduce exposure to COPCs. It is anticipated that soil will be pre-characterized for waste disposal purposes and excavated soil will be directly loaded into trucks for transportation to an off-Site disposal facility.

Excavation depths in non-hardscaped areas will be determined by the results of the previous grid cell sampling as described in Section 4.1.2. Soil in non-hardscaped areas would be excavated to the depth corresponding to the deepest sample in the corresponding grid cell that did not contain concentrations of COPCs above cleanup goals. Therefore, with the exception of grid cells P3-B7 and P3-B8, confirmation soil sampling will not be necessary. Based on the April 2025 DTSC-SL for mercury, the vertical extent of mercury has not been delineated in grid cells P3-B7 and P3-B8. If grid cells P3-B7 and P3-B8 are non-hardscaped areas, one confirmation bottom sample would be collected from each of these grid cells for mercury analysis. Mercury concentrations in the

additional soil samples would be evaluated by comparison to the residential DTSC-SL (0.67 mg/kg). If mercury is reported at concentrations exceeding the residential DTSC-SL, additional soil excavation and confirmation sampling would be performed in coordination with DTSC. The excavation area would include non-hardscaped portions of the area currently owned by the City and the area that will be deeded to the City after the lot line adjustments.

Backfilling would be required at areas where soils are excavated. The total volume of soil removed from the Site would be approximately 25 percent less than Alternative 2, or 3,480 cubic yards. Approximately 3,480 cubic yards of clean backfill would need to be imported.

A land use restriction would be required between DTSC and the property owner to ensure that the cap is operated and maintained and that future uses of the property are consistent with operation and maintenance of the cap. An operation and maintenance agreement signed with DTSC specifying the operation and maintenance requirements and providing financial assurance for future operation and maintenance of the cap, would also be required.

4.1.4 Alternative 4 - Capping in Place

This alternative involves placing a barrier over chemically impacted soil such that direct human exposure is mitigated; the ongoing integrity of the barrier would be managed via a long-term risk management plan. Under this alternative, no soil would be excavated and the entire Site would be capped. A cap could consist of a combination of 2-foot engineered soil cover, asphalt, and/or concrete paving. To achieve the RAOs, the entire 1.32-acre Site requires capping (see Figures 3a, 4a, 5a, and 6a).

A land use restriction would be required and executed between DTSC and the property owner to ensure that the cap is operated and maintained and that future uses of the property are consistent with operation and maintenance of the cap. An operation and maintenance agreement signed with DTSC specifying the operation and maintenance requirements and providing financial assurance for future operation and maintenance of the cap would also be required.

4.2 Evaluation Criteria

Each removal action alternative selected in Section 4.1 is evaluated based on its effectiveness, implementability, and cost according to the definitions in Sections 4.2.1 through 4.2.3 (evaluation criteria).

The evaluation criteria are first applied to each alternative independently, without consideration to the other alternatives (Section 4.3); and then applied relative to each other alternative (Section 4.4).

4.2.1 Effectiveness

In the effectiveness evaluation, the following factors are considered:

- Overall Protection of Human Health and the Environment - This criterion evaluates whether the removal alternative provides adequate protection to human health and the environment and is able to meet the Site's RAOs.
- Compliance with ARARs/TBCs - This criterion evaluates the ability of the removal alternative to comply with ARARs and TBCs.
- Short-Term Effectiveness - This criterion evaluates the effects of the removal alternative during the construction and implementation phase until removal objectives are met. It

accounts for the protection of workers and the community during removal activities and environmental impacts from implementing the removal action.

- Long-Term Effectiveness and Permanence - This criterion addresses issues related to the management of residual risk remaining on site after a removal action has been performed and has met its objectives. The primary focus is on the controls that may be required to manage risk posed by treatment residuals and/or untreated wastes.
- Reduction of Toxicity, Mobility, or Volume - This criterion evaluates whether the removal alternative results in significant reduction in toxicity, mobility, or volume of the hazardous substances.

4.2.2 Implementability

This criterion evaluates the technical and administrative feasibility of implementing the alternative, as well as the availability of the necessary equipment and services. This includes the ability to design and perform a removal alternative, ability to obtain services and equipment, ability to monitor the performance and effectiveness of technologies, and the ability to obtain necessary permits and approvals from agencies, and acceptance by the State and the community.

4.2.3 Cost

This criterion assesses the relative cost of each alternative based on estimated fixed capital for construction or initial implementation and ongoing operational and maintenance costs. The actual costs will depend on true labor and material cost, competitive market conditions, final project scope, and the implementation schedule.

4.3 Analysis of Removal Action Alternatives

Each of the four alternatives are independently evaluated for effectiveness, implementability, and cost in the following sections.

4.3.1 Alternative 1 – No Further Action

The No Further Action alternative has been included to provide a baseline for comparisons among other removal alternatives. The No Further Action alternative would not require implementing any measures at the Site and no costs would be incurred. This alternative includes no institutional controls, removal, consolidation, or treatment of soil, and no long-term monitoring. Under the No Further Action alternative, soil impacted by the COPCs would not be addressed and there would be no reduction in the potential risks at the Site.

The No Further Action alternative would prevent the proposed development of the Site into a community asset, with a community garden, dog park, children's play area, and teaching garden and the RAOs would not be achieved. This alternative, therefore, does not meet the effectiveness criterion and acceptance by the State and the community would be unobtainable.

4.3.2 Alternative 2 – Soil Excavation and Off-Site Disposal

The second alternative consists of remediating the Site to unrestricted use by removing chemically impacted soil and transporting it to an appropriate, permitted off-Site landfill for disposal.

Effectiveness

Potential short-term risks to on-site workers, public health, and the environment could result from dust or particulates that may be generated during excavation and soil handling activities. These risks could be mitigated using personal protective equipment for on-site workers. Engineering controls, such as dust suppression and traffic and equipment operating procedures which limit dust generation could also be used to mitigate these risks, protect the surrounding community, and meet all ARARs. Over the long-term, excavation and disposal of impacted Site soil would remove the COPCs from the Site and satisfy the RAOs by eliminating the long-term human health and environmental risks.

Off-site land disposal does not result in the reduction of toxicity or volume of the COPC. However, the mobility of the COPCs will be reduced and managed by placing impacted soil in an engineered landfill suitable for receiving the characterized waste stream.

Implementability

Excavation and off-Site disposal is a readily implementable technology that is a common method for remediating impacted soil. Implementation is a relatively simple, uncomplicated process, with proven results. The equipment and labor required to implement this alternative are readily available and the shallow depths of the identified contamination make excavation routine.

It is anticipated that regulatory approval for this alternative would be granted since it is a proven and permanent technology which will remove impacted soil and allow for future unrestricted Site use. Acceptance by the State and the community for this alternative is considered high.

Cost

The estimated cost for excavation, transportation, and disposal of the impacted soil; and import, backfill, and compaction of quarry-sourced fill material is approximately $264 per cubic yard. The total cost for implementation of Alternative 2 is an estimated $1,226,000. This estimate includes permitting, health and safety measures including dust control, excavation, transport, sampling/reporting for disposal profiling, and other associated costs.

4.3.3 Alternative 3 – Soil Excavation, Off-Site Disposal, and On-Site Containment

The third alternative consists of a combination of capping chemically impacted soils in place in areas covered by hardscape and excavation and off-Site disposal of chemically impacted soils in areas not covered by hardscape.

Effectiveness

Potential short-term risks to on-Site workers, public health, and the environment could result from dust or particulates that may be generated during excavation and soil handling activities. These risks could be mitigated using personal protective equipment for on-site workers. Engineering controls, such as dust suppression and traffic and equipment operating procedures which limit dust generation could also be used to mitigate these risks, protect the surrounding community, and meet ARARs. Over the long-term, when paired with a land use restriction and operation and maintenance requirements, Alternative 3 would effectively eliminate the human health and environmental risks from the COPCs at the Site.

Excavation, off-Site disposal, and on-Site containment eliminates some impacted soil at the Site, and the mobility of the remaining COPCs are reduced and may be managed.

Implementability

Soil excavation, off-Site disposal, and on-Site containment is a readily implementable technology that is a common method for cleaning up contaminated sites. Implementation is a relatively simple, uncomplicated process, with proven results. The equipment and labor required to implement this alternative are readily available and the shallow depths of the identified contamination make excavation routine. This alternative would likely result in a similar level of noise and dust generation as Alternative 2.

As COPCs would remain on Site, obtaining permits and regulatory approval may be difficult. Community acceptance is also anticipated to be more difficult to achieve since the COPCs would remain on Site. Land use would need to be restricted to manage the encapsulation areas and long-term (30-year) maintenance of the hardscaped areas would be required. Inspections and reporting would be conducted yearly, and a Five-Year Review report would be prepared.

Cost

The estimated cost for soil excavation, off-Site disposal, and on-Site containment of the impacted soil is approximately $270 per cubic yard. This estimate includes permitting, excavation/stockpiling, reporting, backfill, encapsulation, and other associated costs. The present value of operational and maintenance costs are estimated to be $7,500 annually for the life cycle of the project (30 years). The estimated cost of Alternative 3 is $1,256,000 (Table 7).

4.3.4 Alternative 4 – Capping in Place

The fourth alternative consists of capping chemically impacted soil in place with clean soil, asphalt, or concrete.

Effectiveness

The containment/capping-in-place alternative would involve little disturbance of the impacted soil. Therefore, there would be very little exposure to the COPC and the short-term risks would be low. The installation of a surface cap would require long-term inspection and maintenance to meet ARARs and provide long-term effectiveness.

Periodic inspections would be required for settlement, cracking, ponding of liquids, erosion, and naturally occurring invasion by deep-rooted vegetation. Additionally, precautions would have to be taken to ensure that the integrity of the cap is not compromised by land use activities.

Containment through surface capping would not lessen toxicity/volume of the COPC or meet the RAOs but would limit mobility of the COPC by preventing contact.

Implementability

Containment is a relatively simple technology that is easily implemented and can be quickly installed. As COPCs would remain on site, obtaining permits and regulatory approval can be difficult. In addition, community acceptance for this alternative may be more difficult since the COPC would remain on site. Land use would need to be restricted to manage the cap and long-term (30-year) maintenance of the cap would be required. Inspections and reporting would be conducted yearly, and a Five-Year Review report would be prepared.

Cost

Containment technologies typically involve low to moderate costs. Industry costs are approximately $177,000 per acre for asphalt, and approximately $350,000 per acre for concrete. This cost estimate assumes the cap would be constructed from asphalt. The present value of

operational and maintenance costs are estimated to be $11,000 annually for the life cycle of the project (30 years). The estimated cost of Alternative 3 is $822,000 (Table 7).

4.4 Comparative Analysis of Removal Action Alternatives

A comparative analysis was conducted to identify the advantages and disadvantages of each removal alternative. The comparative analysis of the removal alternatives was conducted based on the evaluation criteria listed in Section 4.2.

4.4.1 Effectiveness

Under the No Action alternative, the impacts associated with the site-specific COPCs would not be addressed. Consequently, there would be no reduction in the potential risks and the RAOs would not be achieved.

The Capping in Place alternative (Alternative 4) would only disturb impacted surface soils at the Site. Therefore, there would be little to no short-term risks to on-site workers or the community as a result of implementing the alternative.

The Excavation and Off-Site Disposal alternative and the Excavation, Off-Site Disposal, And On-Site Containment alternative (Alternative 2 and 3, respectively) require removing, handling, and transporting the impacted soil, resulting in higher short-term exposure risks. However, it is expected that these risks can be sufficiently mitigated through Site control measures.

Excavation and Off-Site Disposal (Alternative 2), Excavation, Off-Site Disposal, and On-Site Containment (Alternative 3) and Capping in Place (Alternative 4) reduce or eliminate potential exposure to COPCs. However, Alternatives 3 and 4 would not completely remove the COPCs from the Site and would therefore not satisfy the RAOs.

Additionally, once implemented both Alternatives 3 and 4 would require land use restrictions and long-term monitoring to ensure their effectiveness. Therefore, neither alternative would satisfy the unrestricted Site use RAO.

Excavation and Off-Site Disposal (Alternative 2) would remove all COPCs from the Site and would not require any further management or Site controls, thereby satisfying both RAOs. Based upon this evaluation, Alternative 2 is favored under this criterion.

4.4.2 Implementability

No measures would be implemented for the No Further Action alternative. The Soil Excavation and Off-Site Disposal (Alternative 2); Excavation, Off-Site Disposal, and On-Site Containment (Alternative 3); and Capping in Place (Alternative 4) alternatives are each well-proven, readily implementable technologies. However, only Alternative 2 would remove the COPCs from the Site and is, therefore, anticipated to be accepted by both the State and the community. Accordingly, Alternative 2 is favored by this criterion.

4.4.3 Cost Effectiveness

A summary of estimated costs to implement the proposed alternatives is presented in the following table and additional cost estimating information is included in Table 7. Costs are based on:

- Alternative 2: excavation and off-Site disposal of 4,640 cubic yards of soil,
- Alternative 3: excavation and off-site disposal of 3,480 cubic yards of soil and capping in-place of approximately one-quarter of the Site,

- Alternative 4: capping in place of 1.32 acres of soil.

Removal Action Alternative		Estimated Total Cost
1	No Further Action	$ 0
2	Soil Excavation and Off-Site Disposal	$ 1,226,000
3	Soil Excavation, Off-Site Disposal, and On-Site Containment	$ 1,256,000
4	Capping in Place	$ 822,000

No costs would be incurred for the No Further Action alternative. Alternatives 2, 3, and 4 would cost $1,226,000, $1,256,000, and $822,000, respectively. Alternative 2 is cost competitive with the other identified alternatives and is the only removal action alternative that would remove the COPCs from the Site to meet the RAO for unrestricted Site usage. Accordingly, Alternative 2 is favored by this criterion.

4.5 Recommended Removal Action Alternative

Based on the comparative analysis described in Section 4.4, Alternative 2 (Excavation and Off-Site Disposal) is the preferred and recommended removal action alternative for addressing the Site. This alternative was selected because:

- Alternative 1 (No Further Action) does not address the RAOs for the Site and it is unlikely to receive regulatory and community acceptance.
- Alternative 3 (Soil Excavation, Off-Site Disposal, and On-Site Containment) requires a land use restriction and long-term operation and maintenance plan. Given the long-term stewardship requirement, implementation of Alternative 3 will not achieve the RAO of unrestricted Site use, as certain development restrictions (e.g., cap maintenance and limitations regarding subsurface intrusion) would be in place. Additionally, Alternative 3 will not satisfy the RAO of removing the COPCs from the Site and is, therefore, not anticipated to be accepted by both the State and the community.
- Alternative 4 (Capping in Place) requires a land use restriction, long-term operation and maintenance plan. Given the long-term stewardship requirement, implementation of Alternative 4 will not achieve the RAO of unrestricted Site use, as certain development restrictions (e.g., cap maintenance and limitations regarding subsurface intrusion) would be in place. Additionally, Alternative 4 will not satisfy the RAO of removing the COPCs from the Site and is, therefore, not anticipated to be accepted by both the State and the community.

Only Alternative 2 satisfies the evaluation criteria and meets the RAOs for the Site. It is easily implementable with conventional grading equipment and likely to obtain regulatory and community approval.

5.0 REMOVAL ACTION IMPLEMENTATION PLAN

Implementation of the removal action consists of a series of separate tasks. The following sections discuss each task, including selecting excavation locations (Section 5.1); permits and site preparation (Section 5.2); and excavation and backfilling methodology (Section 5.3).

5.1 Selecting Excavation Locations

Based on the analytical laboratory results for soil samples collected during Site characterization activities in 2022 and 2024 (Section 2.0), impacts to soil at the Site extend to depths of up to 5.5 feet bgs. To remediate the Site to unrestricted use soil will be excavated in each cell to a depth corresponding to the deepest sample within the cell exhibiting COPC concentrations below cleanup goals. Therefore, soil confirmation sampling will not be necessary, with the exception of mercury confirmation sampling in grid cells P3-B7 and P3-B8 at Parcel 3. For example, in cell B2 on Parcel 1 (P1-B2), concentrations of one or more COPC exceeded cleanup goals in the sample collected at 2.0 feet bgs, but the sample collected at 3.0 feet bgs did not contain COPC concentrations exceeding cleanup goals. Therefore, soil within cell B2 on Parcel 1 will be excavated to a depth of 3 feet bgs. The COPC driving the excavation at each grid cell is presented on Figures 3b through 3c for Parcel 1, Figures 4b through 4c for Parcel 2, Figures 5b through 5d for Parcel 3, and Figures 6b through 6c for Parcel 4. The depth each grid cell will be excavated to remove detected COPCs in exceedance of the cleanup goal is presented in Figures 3a, 4a, 5a, and 6a. The excavation area would include the area currently owned by the City and the area that will be deeded to the City after the lot line adjustments. The areas to be deeded to the City will be excavated to the same depth as the adjacent on-Site cell as shown on Figures 4a and 6a.

Based on the April 2025 revised DTSC-SL for mercury, the vertical extent of mercury has not been delineated in grid cells P3-B7 and P3-B8, however, the excavation depth in these cells will extend beyond the mercury exceedance based on concentrations of other COPCs. To confirm removal of mercury exceeding cleanup goals, one confirmation bottom confirmation soil sample will be collected from each of these grid cells for mercury analysis. Mercury concentrations in the additional soil samples will be evaluated by comparison to the residential DTSC-SL (0.67 mg/kg). If mercury is reported at concentrations exceeding the residential DTSC-SL, additional soil excavation and confirmation sampling will be performed in coordination with DTSC.

The total estimated volume of soil requiring removal to achieve the RAOs is approximately 4,640 cubic yards or 6,495 tons. Excavated soil is likely to primarily be classified as non-hazardous for disposal purposes.

5.2 Permitting and Site Preparation

Prior to beginning excavation activities, the following preparation activities will be undertaken:

5.2.1 Engineering Permit

An engineering permit (or exemption) is required for work in the right-of-way in the City of Berkeley. Contractor will be responsible for obtaining an Engineering Permit, if necessary.

5.2.2 Construction General Permit (CGP) for Stormwater Runoff

The soil removal activities will disturb more than 1 acre of land. Accordingly, these activities are subject to the State Water Resources Control Board Water Quality Order 2022-0057-DWQ for the National Pollutant Discharge Elimination System (NPDES) Discharges of Storm Water Associated with Construction Activity (Construction General Permit). The contractor will make the appropriate notifications for the remediation work and prepare a storm water pollution prevention plan (SWPPP) that outlines best management practices (BMPs) related to Site grading and soil removal activities.

5.2.3 Shoring Plan and Building Permit

Soil at 19 grid cells within Parcels 1, 2 and 3 requires removal to depths of 5 feet bgs or greater (see Figure 3a, 4a, and 5a). These grid cells will require an excavation support system, such as soldier-piles and lagging, to prevent impacting adjoining properties. The selected contractor will be required to submit a shoring plan to the City prior to commencing work. The shoring plan will be submitted to the DTSC for review. Upon approval of the shoring plan submittal, the contractor shall be responsible for obtaining the necessary City Building Permit.

5.2.4 Pre-excavation Site Preparation

Prior to excavation activities, all existing trees will be removed from the Site, including two coast live oak trees located along Parcel 3. While coast live oak trees are protected tree species in the City of Berkeley, the City Arborist reviewed the excavation extents required for remediation and concluded the excavation would cause extreme stress to the trees and would be a public safety hazard. As such, the City will be moving forward with the City Arborist's recommendation to remove all trees prior to excavation. Additionally, one detached garage and a small shed that encroach on the Site will be demolished. Proposed excavation activity on Site is expected to extend to a depth of up to 6 feet bgs in some areas. In order to avoid encountering utilities during excavation activities, Underground Service Alert (USA) North will be notified a minimum of 72 hours prior to any subsurface disturbance activity on the Site. Overhead utility lines, if any, will be identified and avoided during the investigation.

The excavation areal extents will be staked and surveyed by a licensed surveyor. Areas where deeper excavation is planned will be identified with color-coded flagging tape and with x and y coordinates; these coordinates will be correlated with GPS equipment so that the deeper excavation areas can be readily identified during the soil removal activities.

Prior to commencing shoring installation or excavation activities, the City will conduct inspections of neighboring structures near the excavation limits to document pre-construction conditions. The City will notify DTSC at least 5 days in advance of the pre-construction inspection so that DTSC staff may be present at their discretion.

5.3 Excavation and Backfilling Methodology

5.3.1 Soil Excavation

Excavation work will be conducted by a licensed grading contractor with current hazardous material certifications. Sitework will be conducted on weekdays between 7:00AM and 5:00PM, unless otherwise required by a permit. It is anticipated that excavations at most grid cells can be accomplished using open-cut methods, however open cut methods are locally infeasible at 19 grid cells (including partial cells) (Section 4.1.2). Excavations at these locations can be accomplished using limited excavation support systems, such as soldier-piles and lagging.

Soil will be excavated in each cell to a depth corresponding to the deepest sample within the cell exhibiting COPC concentrations below cleanup goals based on the investigation conducted to date. Therefore, soil confirmation sampling will not be conducted. Previous site results will remain representative at the end of excavation activities because no earthmoving that would change the depth or re-distribute contamination will be performed and this will be verified by field personnel prior to backfilling.

Soil will only be excavated beyond the planned limits if unanticipated conditions, such as identification of stained soil, soil with strong or noticeably pungent odor, or buried railroad or other metallic debris are encountered. If unanticipated soil conditions are encountered, DTSC will be notified. Based on the nature of the unanticipated condition observed, additional soil removal may be conducted and confirmation samples will be collected. If unanticipated conditions are encountered, field staff will use an X-Ray Fluorescence (XRF) analyzer to measure estimated metals concentrations via in-situ soil measurements to inform the extent of over excavation with respect to metal-impacted soil. The number and confirmatory soil grab samples and specific laboratory analyses required will be based on the nature of the observed conditions with concurrence from DTSC. Finally, bottom soil samples will be collected at cells P3-B7 and P3-B8, and analyzed for mercury. The residential DTSC-SL for mercury was lowered from 1 to 0.67 mg/kg in April 2025 (DTSC, 2025), and additional soil data is needed to delineate mercury concentrations vertically in soil at these cells. Previously, mercury was reported in the deepest soil sample analyzed for mercury at these cells at concentrations between 0.67 and 1 mg/kg.

The excavations will not extend below the groundwater table. Therefore, temporary dewatering and associated groundwater disposal will not be required as part of the work. Surface water runoff, if any, will be handled in accordance with the Construction General Permit.

The COPC-impacted soils will be managed in accordance with all applicable provisions of the State of California and/or federal law (Table 6). For example, excavation of soil will require dust control measures in accordance with California Division of Occupational Safety and Health (Cal OSHA) and the Bay Area Air Quality Management District (BAAQMD) requirements.

Due to space limitations, it is anticipated that soil will be pre-characterized for waste disposal purposes and directly loaded into trucks for off-Site transport and disposal during excavation activities. Once a contractor and potential landfill have been selected, the City will work with them to determine waste profiling requirements. If the existing data is not sufficient for profiling purposes, a soil boring program will be conducted to collect additional soil samples at the Site. The City will work with the contractor and selected landfill to determine the required analyses and sample frequency required for waste profiling. At a minimum, soil samples will be analyzed for Title 22 metals and PAHs for waste characterization purposes.

If it is necessary to temporarily stockpile soil during excavation activities, all stockpiled soil will be placed on plastic sheeting and appropriately bermed in accordance with BMPs described in the Construction General Permit. Stockpiled soil will be covered at the end of each workday or in the event of rain. However, the method of covering will be determined based on the anticipated time that the stockpiles will be left in place, weather conditions, regulatory requirements (i.e., BMPs and SWPPP provisions), and other practical factors such as the size of the stockpiles. The stockpiled soil will be fenced or otherwise secured.

5.3.2 Backfilling

It is anticipated that quarry-sourced fill material will be imported to the Site to backfill excavations. Soil import will meet the minimum requirements for soil sampling and analysis as designated by the DTSC in its advisory for import of clean fill material (DTSC, 2001) to avoid the placement of

chemically impacted soil on Site. The analytical list for clean import fill will be based on the fill source site history.

Potential import soil analytical results will be evaluated by comparison to DTSC-SLs as presented in HHRA Note 3. For constituents that are not listed in HHRA Note 3, the analytical results were compared to the RSLs published by the USEPA, Region 9, for residential soil. Arsenic concentrations in import soil will be evaluated by comparison to the Site-specific background concentrations of 11 mg/kg. Import soil analytical results will be provided to DTSC for approval prior to placing soil on Site. Information such as the source(s) of import fill and any laboratory analytical reports for import fill will be included in a Removal Action Completion Report.

5.3.3 Dust Control

When earthwork activities occur, dust control measures will be implemented to minimize dust generation. General dust control measures recommended by the Bay Area Air Quality Management District include, but are not limited to:

- Application of water as needed to maintain soil moisture and minimize dust generation daily;
- For trucks hauling impacted soil within the Site, cover the soil or maintain at least 2 feet of freeboard;
- Limit vehicle speeds to 15 miles per hour on unpaved portions of the Site;
- Minimize drop heights while loading transportation vehicles; and
- Cover exposed soil or stockpiles and secure with temporary fencing or other means.

Air monitoring will be conducted according to the Community Air Monitoring Plan (CAMP) described in Section 5.3.5.

5.3.4 Decontamination of Off-Haul Vehicles and Equipment Cleaning

Track out of soil from the Site will be prohibited. Soil or other materials adhered to the vehicles will be removed via brushing or washing before exiting the Site. Water generated from the cleaning processes will be collected and contained on the Site. Sampling may be needed prior to disposal in compliance with any receiving facility requirements or sewer discharge permit(s). Sampling and compliance will be performed by the contractor.

5.3.5 Community Air Monitoring Plan (CAMP)

A CAMP is required at response sites under DTSC's oversight whenever remediation or removal activities may release compounds of concern (COCs) into the air (DTSC, 2020). A CAMP describes air monitoring protocols that must be performed during soil activities when fugitive emissions could be released. These protocols are designed to protect the community and ensure that Site workers react quickly to make appropriate changes to emission control measures, as needed. The CAMP for the Site is presented below and generally follows the DTSC CAMP Guidance (DTSC, 2020).

5.3.5.1 Monitoring Objective and Scope

Fugitive emissions may contain COPCs. The objective of the CAMP is to protect community health and ensure compliance with regulatory standards by minimizing the amount of fugitive emissions (i.e. dust) released during the removal action.

5.3.5.2 Monitoring Program, Location, and Equipment

Continuous real-time perimeter air monitoring data for dust using direct-reading instruments will be conducted during removal of impacted soil. The direct-reading instruments will be battery-powered so there are no added emissions from the monitoring program. The dust monitoring locations will be established each day that soil activities are to be performed, and monitors will be placed at or near the property line in the daily work area. At least one upwind and two downwind sampling stations will be set up at the Site for continuous perimeter dust monitoring at the daily work area. A meteorological station will also be set up at the Site to document wind direction and speed during the duration of excavation activities.

The site operator will utilize National Weather Service forecasts and review current conditions and recent trends from the on-site meteorological station to position the air monitoring equipment each morning prior to the start of any demolition or excavation activities. The upwind and downwind monitoring locations may be moved during the workday when wind direction or the work location changes. The downwind measurements will be compared to the upwind measurements to determine if on-Site soil activities are contributing to community exposure.

The Site is in a residential area and sensitive receptors in the vicinity of the Site include adjoining and nearby residences. Additional sensitive receptors identified within 0.25 miles of the Site include five daycares, a martial arts school, and a park. The anticipated placement of the upwind and downwind sampling stations relative to these sensitive receptors and the prevailing wind direction is provided on Figure 8.

At each air monitoring station, dust monitoring devices will be set with the air intake set to approximately 4 to 5 feet off the ground to monitor air representative of the breathing zone. Monitoring locations will be recorded in field notes and on-Site plans. Air monitoring will be conducted using direct-reading instruments (e.g., a TSI DustTrak or similar) for measurement of total dust. Electronic data logs of real-time measurements will be used to determine the maximum and average dust concentrations at upwind and downwind perimeter monitoring locations.

5.3.5.3 Action Levels and Response Protocols

Action levels for dust in perimeter air will be used to determine when to employ additional dust control methods or stop work based on the real-time perimeter monitoring data. DTSC-SLs for residential air for non-cancer health effects were selected to develop chemical-specific dust action levels. If a DTSC-SL was not available, the USEPA RSLs for non-cancer health effects (USEPA, 2024) were used. Resident air cancer endpoint DTSC-SLs and USEPA RSLs are only applicable to long-term (i.e., chronic) potential exposures and are not appropriate for short-term (i.e., acute and sub-acute) potential exposure. The chemical-specific dust action levels were derived using the maximum detected concentration in soil and RSL as follows:

$$Dust\ Action\ Level\ \left(\frac{mg}{m^3}\right) = \frac{Chemical\ Specific\ Action\ Level\ \left(\frac{mg}{m^3}\right) \times 10^6 \left(\frac{mg}{kg}\right) \times Exposure\ Adjustment\ Factor}{Maximum\ Soil\ Concentration\ \left(\frac{mg}{kg}\right)}$$

The resulting chemical-specific dust action levels are presented in Table 8. The chemical-specific dust action levels conservatively represent the concentration of dust that is equivalent to the chemical-specific screening level, if the dust contained the highest concentration of that chemical previously detected in soil samples collected at the Site. Thus, the chemical-specific dust action levels are protective of potential exposures to dust associated with the planned soil remediation. In addition, the California Air Resources Board (CARB) specifies an ambient air quality standard of 0.05 milligrams per cubic meter (mg/m^3) for a 24-hour period for particulate matter with a

diameter of less than 10 micrometers (PM_{10}; CARB, 2023). As presented in Table 8, the CARB ambient air quality standard of 0.05 mg/m^3 is at least an order of magnitude more conservative (i.e., lower) than each chemical-specific dust action level. Therefore, the CARB ambient air quality standard is protective of human health and is selected as the action level for perimeter dust monitoring.

If this action level is exceeded, additional engineering controls will be implemented according to the following response protocol to further reduce dust concentrations:

- Increased dust control measures will commence, including the application of additional water to maintain soil moisture and minimize dust generation. Water will be applied to excavator buckets and excavation surfaces during excavation and dumping.
- Stop specific dust-generating activities until wind directions and/or wind speeds are more conducive to reduced dust levels. This may include stopping vehicle traffic on Site, stopping loading, or stopping excavation activities, as needed.
- Temporary Site-wide work stoppage to identify and rectify the source of the dust generation or wait for wind speeds to reduce.

Work will be stopped if engineering controls cannot limit dust emissions to acceptable levels. Finally, no visible dust should be observed leaving the Site. If visible dust is observed leaving the Site, the response protocol described above will be employed immediately to reduce dust emissions. If, after monitoring for 2 weeks, no dust action levels are exceeded, the Consultant in consultation with the Owner and the DTSC may elect to discontinue the air monitoring program.

Chemical-specific action levels for dust in work zone air also were developed using Permissible Exposure Limits (PEL) published by the California Division of Occupational Safety and Health (Cal-OSHA; 2019). The resulting chemical-specific, work zone action levels are presented in Table 9. As presented in Table 9, the PEL for the respirable fraction of particulates (5 mg/m^3) is more conservative (i.e., lower) than every chemical-specific action levels for work zone air.

5.3.5.4 Data Management and Documentation

Electronic data logs of real-time measurements will be used to determine the maximum and average dust concentrations at upwind and downwind perimeter monitoring locations.

Periodic reports which summarize the daily air monitoring results and include meteorological data summaries (wind speed and direction, ext.) will be submitted to the DTSC project manager for review. These reports will include a summary of the 15-minute running average air monitoring results for each air monitoring location and instrument and the 15-minute block average meteorological data.

If the action level is exceeded the DTSC project manager for the Site will be notified via email immediately. Information provided via email will include the monitoring threshold and 15-minute and hourly data collected during the period of elevated dust concentrations. The email report will also describe on-Site activities and unusual off-Site activities which occurred during the time the action level was exceeded. The email report will note any corrective actions taken to mitigate the release and any proposed changes to operating procedures to prevent future releases.

A project summary report of the data provided in all periodic reports will be submitted to DTSC approximately 30 days after the end of project activities. The project summary report will contain the following information in electronic format:

- A report narrative

- All air monitoring data, in electronic format, for the full project
- Calculated percentage data recovery for all parameters monitored
- A summary of exceedances over the action level and of the maximum and average daily values for PM10 at each air monitoring location
- All meteorological data, in electronic format, for both 15-minute and one-hour intervals, for the full project
- A wind rose chart of wind speed and direction, by stability class, for the entire project

5.3.5.5 Quality Assurance/Quality Control Requirements

Quality assurance and quality control measures will be implemented to ensure the data collected under the CAMP is reliable and will include the following critical features:

- Periodic instrument calibration and daily instrument performance checks: Instrument calibration will be performed in accordance with the manufacturer's instructions at the beginning of each workday. All instrument calibration and maintenance activities, as well as calibration results, will be documented in the field logs.
- Operator training: All persons responsible for calibrating, handling, or interpreting the air monitoring meters or meter/sampling output data will have sufficient prior experience with such work.

5.3.6 Field Variances

Variances from the RAW will be discussed with DTSC prior to any action being taken except for emergencies (when an immediate response is required). The DTSC will be notified if an emergency response is implemented. The field variances will be documented in the Removal Action Completion Report prepared for the project.

6.0 TRANSPORTATION PLAN

The purpose of the transportation plan is to minimize potential health safety, and environmental risks resulting from the movement of material and/or equipment during Site remediation. The Transportation Plan for the Site is presented below and follows the DTSC Transportation Plan Guidance (DTSC, 1994).

6.1 Waste Characterization and Hazardous Waste Management

Waste characterization and hazardous waste management are discussed in Section 5.3.1.

6.2 Characteristic and Destination of Soil to be Transported

Elevated levels of arsenic, lead, mercury, and PAHs have been detected in Site soil. Based on the available data, the excavated soil is anticipated to be categorized as RCRA hazardous waste, non-RCRA California hazardous waste, and/or non-hazardous waste.

If waste characterization sampling indicates that waste soil is RCRA hazardous waste or non-RCRA California hazardous waste, the City of Berkeley will secure an EPA Identification Number from DTSC for proper management of the hazardous waste. The DTSC requirements regarding hazardous waste generation, temporary on-Site storage, transportation, and disposal will be followed. Any shipment of hazardous waste in California will be transported by a registered hazardous waste hauler under a uniform hazardous waste manifest. Land ban requirements

will also be followed, as necessary. Any shipment of non-hazardous waste in California will be transported under a non-hazardous waste manifest or bill-of-lading.

Soil classified as non-hazardous waste can be transported to a licensed Class II landfill. Soil classified as non-hazardous waste will be transported to a Class II landfill facility. Vasco Road Landfill or Altamont Landfill, located at the following addresses, are examples of nearby Class II landfills:

Vasco Road Sanitary Landfill Republic Services of California I, LLC
4001 Vasco Road
Livermore, CA 94550
EPA ID#: FRS 110009544671
Telephone: (925) 447-0491

Altamont Landfill & Resource Recovery
10840 Altamont Pass Road
Livermore CA, 94550
EPA ID #: FRS 110000831404
Telephone: (925) 449-6349

Soil classified as non-RCRA California hazardous waste or RCRA hazardous waste will likely be transported to one of the following Class I facilities:

Waste Management Inc. - Kettleman 35251 Old Skyline Road
Kettleman City, California 93239
EPA ID #CAT00064611
Telephone: (866) 909-4458

Clean Harbors Buttonwillow, LLC
2500 W Lokern Road
Buttonwillow, California 93206
EPA ID # FRC 110000500912
Telephone: (661)-762-6200

The disposal facility will be selected by the City based on the waste characterization results. Soil will be disposed of under waste manifest at the selected facility to ensure the safe and legal transportation and disposal of hazardous materials from the point of generation to the final disposal facility. The final disposition of the soil will be reported in a Removal Action Completion Report (Task 9 of the VCA; DTSC, 2023) which will include waste manifests and disposal tickets.

6.3 Transportation Mode

It is anticipated that work will require approximately 3 to 5 weeks for completion. Up to 4,640 cubic yards (6,495 tons) of soil will be removed from the Site. Assuming each truck carries 18 tons, up to 357 truckloads will be required to transport the impacted soil. All permitted disposal facilities operate a certified weight station at their facility. As such, each truck will be weighed before offloading its payload. Weight tickets or bills of lading will be provided by the removal action subcontractor after all the soil has been shipped off Site. Truck routes will be approved by the City of Berkeley prior to work activities, as necessary.

Before leaving the site, each truck driver will be instructed to notify the Site manager. Each truck driver will be provided with a Uniform Hazardous Waste Manifest, Non-Hazardous Waste Manifest, or bill-of-lading, and the cellular phone number for the Site manager. It will be the responsibility of the Site manager to notify DTSC and the City of Berkeley of any unforeseen incidents. Each truck driver will be instructed to use a cellular telephone, and/or their radio dispatch system to call for roadside assistance, if needed, and report roadside emergencies.

6.4 Truck Route

A primary and alternate truck route plan from the Site to Ashby Avenue (Highway 13) are included in Figures 9a and 9b. The direction travelled once trucks reach Highway 13 will be dependent on the selected disposal facility. The truck route was selected in coordination with the City to minimize

impacts on local traffic and sensitive receptors (e.g., schools, residential areas). Note that Longfellow Middle School located at 1500 Derby Street is currently closed for construction and will not reopen until at least July 2026. The City anticipates remediation to occur before Longfellow Middle School plans to reopen at their 1500 Derby Street site. The removal action subcontractor will coordinate with local authorities to ensure compliance with traffic regulations.

6.5 Site Traffic Control

During soil transport activities, trucks will enter the Site via the road designated by the Site manager. The roads used for soil transport activities will vary based on which parcel soil is being excavated from and which road is nearest to the active work area. A flag person will be located at the site to assist the truck drivers to safely enter the Site. A Site trucking coordinator will be designated to maintain communication with on-Site trucks and coordinate transportation. In addition, all vehicles will be required to maintain slow speeds (i.e., less than 5 mph) for safety and for dust control purposes.

Prior to exiting the Site, vehicles will be swept to remove any extra soil from areas not covered or protected. Prior to the off-Site transport, the Site manager will be responsible for inspecting each truck to ensure that the payloads are adequately covered, the trucks are cleaned of excess soil and properly placarded, and that the truck's manifest has been completed and signed by the generator (or its agent) and the transporter. As the trucks leave the Site, the flag person will assist the truck drivers so that they can safely merge with traffic.

6.6 Spill Prevention and Emergency Response

As required by the DTSC Transportation Plan Guidance, the removal action contractor will provide training for drivers and site personnel on spill response procedures. The removal action contractor will ensure that all trucks carrying hazardous waste are equipped with spill kits and that drivers are trained in spill containment and cleanup. A Spill Prevention and Emergency Response Plan will be developed by the removal action contractor prior to conducting soil remediation activities at the Site.

6.7 Record Keeping

The removal action contractor will be responsible for maintaining a field logbook, which will serve to document observations, personnel on site, equipment arrival and departure times, and other important project information. Logbook entries will be complete and accurate enough to allow reconstruction of field activities. Logbooks will be bound, with consecutively numbered pages and each page will indicate the date and time of the entry. All entries will be legible, written in black or blue ink, and signed by the author. Language will be factual and objective. If an error is made, corrections will be made by crossing a line through the error and entering the correct information. Corrections will be dated and initialed.

Because some portion of the excavated soil may be profiled as hazardous waste under California or EPA regulations, the Uniform Hazardous Waste Manifest (hazardous waste manifest) form will be used to track the movement of soil from the point of generation to the point of ultimate disposition. The hazardous waste manifests, if any, will include the following information:

- Name and address of the generator, transporter, and the destination facility
- United States Department of Transportation description of the waste being transported and any associated hazards
- Waste quantity

- Name and phone number of a contact in case of an emergency
- EPA Hazardous Waste Generator Number
- Other information required either by the EPA and/or the DTSC

Any soil that is profiled as non-hazardous and sent off site for disposal will be documented using a Non-Hazardous Waste Manifest or Bill-of-Lading form. At a minimum, this form will include the following information:

- Generator name and address
- Transportation company
- Accepting facility name and address
- Waste shipping name and description
- Quantity shipped

Prior to transporting the excavated soil off-Site, an authorized representative of the City of Berkeley will sign each hazardous and/or non-hazardous waste manifest. The removal action site manager will maintain one copy of all hazardous and/or non-hazardous waste manifests on site. All waste manifests, weight tickets, and analytical reports will be maintained and available for inspection by DTSC.

7.0 CULTURAL AND TRIBAL CULTURAL RESOURCES

Ground disturbing activities could potentially uncover previously unknown cultural resources or Tribal Cultural Resources (TCRs). The possibility of encountering human remains, though unlikely, cannot be entirely ruled out. DTSC staff from the Environmental Justice and Tribal Affairs office should be notified immediately in the event of any inadvertent discoveries of either potential cultural (archaeological) resources, Tribal Cultural Resources, or human remains.

During the environmental review process, DTSC completed a record search at Northwest Information Center (NWIC) of the California Historical Resources Information System. Results were completed on July 16, 2025 (NWIC File #: 24-1998). The review included the project area and a ¼-mile radius. Previous studies were accessed. The purpose of the record search was to determine whether known cultural resources have been previously recorded within the vicinity and assess the likelihood of unrecorded cultural resources to be present based on historical references and the distribution of nearby sites.

DTSC's Environmental Justice and Tribal Affairs Manager contacted the State of California's Native American Heritage Commission (NAHC) to conduct a search of the Sacred Land File (SLF) and to obtain a list of Native American Tribes (Tribes) who may have knowledge of cultural resources within the project area. The results of the SLF were positive. Tribal outreach letters were emailed to several Tribal groups. Several respondents asked for more information about the project. Consultations are ongoing. If a Tribal Cultural Monitor is needed to monitor ground disturbing activities, one will be retained by the contractor prior to ground disturbing activities. DTSC will provide the Tribe with contact information of the party that will set up a payment contract with the Tribe. DTSC will provide fieldwork dates for ground disturbing activities at least 14 days in advance to allow for logistical planning.

7.1 Inadvertent Discovery of Archeaological Resources and Tribal Cultural Resources

If suspected archaeological resources or Tribal Cultural Resources are encountered, all ground disturbing activities within 100 feet shall halt and the City of Berkeley, DTSC, and representatives from California Native American Tribes consulting on this project shall be notified.

An archaeologist who meets the Secretary of the Interior (SOI) Professional Qualification Standards for Archaeology or is a Registered Professional Archaeology (RPA) shall inspect the findings within 24 hours of discovery. The archaeologist will stake the area of discovery, placing stakes no more than 10 feet apart, forming a circle having a radius of no less than 100 feet from the point of discovery. If it is determined that the project could damage a Tribal Cultural Resource, a historical resource, a unique archaeological resource (as defined pursuant to the CEQA Guidelines), mitigation shall be implemented in accordance with California Public Resources Code (PRC) Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. Consistent with Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance is not feasible, a qualified archaeologist shall reference the detailed treatment plan that was created prior to ground-disturbing activities, in consultation with the City of Berkeley and representatives from California Native American Tribes consulting on this project.

Treatment of unique archaeological resources shall follow the applicable requirements of PRC Section 21083.2. Treatment for most resources would consist of (but would not be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the project.

Treatment of Tribal Cultural Resources should include input from representatives of California Native American Tribes consulting on this project. Treatment of TCRs may include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resources, protecting the confidentiality of the resources or heritage recovery.

The treatment plan shall include provisions for Tribal consultation, analysis of data in a regional context, and reporting of results within a timely manner. Any documentation and recordation of archaeological resources shall be submitted to the Northwest Information Center (NWIC).

7.2 Inadvertent Discovery of Human Remains

If human remains are encountered, all ground disturbing activities within 100 feet of the find shall halt, and the Alameda County Coroner and DTSC shall be notified immediately. Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined whether or not the remains are subject to the coroner's authority. A qualified archaeologist shall also be contacted to evaluate the situation. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. Pursuant to Section 5097.98 of the Public Resources Code, the Native American Heritage Commission will identify a Native American Most Likely Descendent (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated funerary objects.

There shall be no pictures taken or testing done on the Native American human remains. All bone, if not identifiable as human or animal, shall be treated as human remains and the appropriate protocols followed.

The archaeologist may recover scientifically valuable information, as appropriate and in accordance with the recommendations of the MLD and/or Tribal representatives. Upon completion of the archaeologist's assessment, a report should be prepared documenting methods and results, as well as recommendations regarding the treatment of the human remains and any associated archaeological material. The reports should be submitted to the City of Berkeley, DTSC, the NWIC, and representatives from the consulting Tribes. Tribal representatives will rebury the Native American human remains and associated funerary objects with the appropriate dignity either in accordance with the recommendations of the MLD, if available, or in the project vicinity at a location agreed upon between the Tribes and the consultant, where the reburial would be accessible to Tribal members in perpetuity and would not be subject to further disturbance. The discovery and reburial is to be kept confidential and secure to prevent any further disturbance.

8.0 HEALTH AND SAFETY PLAN

All contractors will be responsible for operating in accordance with the most current requirements of State and Federal Standards for Hazardous Waste Operations and Emergency Response (Cal. Code Regs., tit. 8, section 5192; 29 CFR 1910.120). Onsite personnel are responsible for operating in accordance with all applicable regulations of the Occupational Safety and Health Administration (OSHA) outlined in the State General Industry and Construction Safety Orders (Cal. Code Regs., tit. 8) and Federal Construction Industry Standards (29 CFR 1910 and 29 CFR 1926), as well as other applicable federal, state and local laws and regulations. All personnel shall operate in compliance with all Cal OSHA requirements. In addition, Cal OSHA's Construction Safety Orders (especially Cal. Code Regs., tit. 8, sections 1539 and 1541) will be followed.

A Site-Specific Health and Safety Plan (HASP) is included in Appendix E. The HASP specifies minimum health and safety protocol to be followed during implementation of project work by all site personnel under the direction of the City, including employees, contractors, and subcontractors. All personnel are required to comply with this HASP

The provisions of the HASP are mandatory for all personnel at the Site. The contractor and its subcontractors doing fieldwork in association with this RAW will either adopt and abide by the HASP or shall develop their own safety plans which, at a minimum, meet the requirements of the HASP. All onsite personnel shall read the HASP and sign the "Plan Acceptance Form" before starting Site activities.

9.0 PUBLIC PARTICIPATION

The public participation requirements for the RAW process include: (1) the development of a community profile, (2) publishing a notice of the availability of the Removal Action Workplan for public review and comment, (3) making the RAW and other supporting documents available at DTSC's office and in the local information repository, and (4) responding to public comments received on the Removal Action Workplan and CEQA documents. In accordance with the community profile prepared for this site, the following additional activities were conducted:

- A community update was sent out to the site mailing list describing the site and the proposed removal action on August 13, 2025.

- A notice of the availability of the Removal Action Work Plan for public review and comment was published in the Berkeley Voice section of the East Bay Times and the Mercury News and Vision Hispana newspapers on August 15, 2025.
- Site documents were made available in electronic format on DTSC's publicly accessible EnviroStor database.
- Site documents were made available in hard copy format at the DTSC Sacramento Regional Office and Berkeley Public Library – Tarea Hall Pittman South Branch.

The length of the public review and comment period was 30 days (August 18, 2025 to September 16, 2025). An administrative record is included in Appendix F. All of the documents listed in the administrative record were made available for public review.

Once the public comment period was completed, DTSC reviewed and responded to the comments received in a letter dated October 28, 2025 (Appendix H). The RAW was revised, as necessary, to address the comments received. Significant changes to the RAW were not required, therefore, additional public review and comment were not required and the DTSC approved the Final RAW on October 31, 2025 (Appendix I).

Contractor bid solicitation and selection is expected to be complete by February 2026 and initiation of remediation activities is anticipated in Spring 2026.

10.0 CEQA DOCUMENTATION

The California Environmental Quality Act (CEQA), modeled after the National Environmental Policy Act (NEPA) of 1969, was enacted in 1970 as a system of checks and balances for land-use development and management decisions in California. It is an administrative procedure to ensure comprehensive environmental review of cumulative impacts prior to project approval. It has no agency enforcement tool but allows challenge in courts.

A CEQA project is a project that has a potential for resulting in a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. CEQA applies to all discretionary projects proposed to be carried out or approved by California public agencies, unless an exemption applies.

As part of the grant application process for the park project, the City of Berkeley previously filed a CEQA Notice of Exemption encompassing development of the proposed park facilities. For the site remediation activities covered by the RAW, DTSC (acting as the CEQA lead agency) has prepared a Notice of Exemption pursuant to Section 15061(b)(3) (Appendix I). As part of this determination, GSI performed emissions modeling using the California Emissions Estimator Model (CalEEMod), the results of which are presented in Appendix G. The Notice of Exemption will be filed with the Office of Land Use and Climate Innovation's CEQA State Clearinghouse.

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11.0 REFERENCES

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GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

TABLES

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
1	P1-A2	Grid Cell A2	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	DUP-01-01112024
1	P1-A3	Grid Cell A3	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-A4	Grid Cell A4	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-A5	Grid Cell A5	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-A6	Grid Cell A6	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-A7	Grid Cell A7 & Encroachment Area Sampling	0.5-1.0	X	--	--	X	X	X	X	--
			2.0-2.5	X	--	--	X	X	X	X	--
			3.5-4.0	NA	--	--	NA	NA	NA	NA	--
	P1-A7d		5.0-5.5	--	--	--	NA	NA	NA	NA	--
1	P1-A8	Grid Cell A8 & Encroachment Area Sampling	0.5-1.0	--	--	--	X	X	X	X	DUP-02-01112024
			2.0-2.5	--	--	--	X	X	X	X	--
			3.5-4.0	--	--	--	NA	NA	NA	NA	--
	P1-A8d		5.0-5.5	--	--	--	NA	NA	NA	NA	--
1	P1-A9	Grid Cell A9	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-A10	Grid Cell A10	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-B2	Grid Cell B2	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-B3	Grid Cell B3	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-B4	Grid Cell B4	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	X	--	--	--	--	--	--	--

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
1	P1-B5	Grid Cell B5	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	X	--	--	--	--	--	--	--
	P1-B5d		4.5-5.0	X	--	--	--	--	--	--	DUP-2-240419
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
1	P1-B6	Grid Cell B6	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
1	P1-B6	Grid Cell B6	3.5-4.0	X	--	--	--	--	--	--	--
	P1-B6d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
1	P1-B7	Grid Cell B7	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	X	--	--	--	--	--	--	--
2	P2-A4	Grid Cell A4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A5	Grid Cell A5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A6	Grid Cell A6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A7	Grid Cell A7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A8	Grid Cell A8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A9	Grid Cell A9	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A10	Grid Cell A10	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
2	P2-B1	Grid Cell B1	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P2-B1d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
2	P2-1d	Vertical Delineation (deeper sample depth at P2-1)	4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
2	P2-B3	Grid Cell B3	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
2	P2-B4	Grid Cell B4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P2-B4d		4.5-5.0	X	--	--	--	--	--	--	--
2	P2-B4d	Grid Cell B4	5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
2	P2-B5	Grid Cell B5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
2	P2-B6	Grid Cell B6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	DUP-02-01082024
	P2-B6d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
2	P2-B7	Grid Cell B7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P2-B7d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
2	P2-B8	Grid Cell B8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--

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				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
2	P2-B9	Grid Cell B9	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P2-B9d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
2	P2-B10	Grid Cell B10	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P2-B10d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-A1	Grid Cell A1	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	X	--	--	--	--	--
3	P3-A2	Grid Cell A2	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
3	P3-A3	Grid Cell A3	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-A4	Grid Cell A4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-A5	Grid Cell A5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-A6	Grid Cell A6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-A7	Grid Cell A7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	DUP-02-01092024
3	P3-A8	Grid Cell A8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-A9	Grid Cell A9	1.5-2.0	X	X	X	--	--	--	--	DUP-03-01092024
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--

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				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
3	P3-A10	Grid Cell A10	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-B1	Grid Cell B1	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B1d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B2	Grid Cell B2	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	DUP-01-01092024
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B2d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B3	Grid Cell B3	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B3d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B4	Grid Cell B4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	X	NA	--	--	--	--	--
	P3-B4d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B5	Grid Cell B5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B5d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
3	P3-B6	Grid Cell B6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B6d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B7	Grid Cell B7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B7d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B8	Grid Cell B8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	X	NA	--	--	--	--	--
	P3-B8d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-4d	Vertical Delineation (deeper sample depth at P3-4)	4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
3	P3-B9	Grid Cell B9	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B9d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
3	P3-B9d	Grid Cell B9	6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B10	Grid Cell B10	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
3	P3-T1	Characterization Near Protected Tree	0.5-1.0	X	X	X	--	--	--	X	DUP-3-240418
			1.0-1.5	X	NA	NA	--	--	--	NA	--
			1.5-2.0	X	NA	NA	--	--	--	NA	--

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
3	P3-T2	Characterization Near Protected Tree	0.5-1.0	X	X	X	--	--	--	X	--
			1.0-1.5	NA	NA	NA	--	--	--	NA	--
			1.5-2.0	NA	NA	NA	--	--	--	NA	--
3	P3-T3	Characterization Near Protected Tree	0.5-1.0	X	X	X	--	--	--	X	--
			1.0-1.5	NA	NA	NA	--	--	--	NA	--
			1.5-2.0	NA	NA	NA	--	--	--	NA	--
3	P3-T4	Characterization Near Protected Tree	0.5-1.0	X	X	X	--	--	--	X	--
			1.0-1.5	NA	X	NA	--	--	--	NA	--
			1.5-2.0	NA	X	NA	--	--	--	NA	--
4	P4-A1	Grid Cell A1	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A2	Grid Cell A2	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A3	Grid Cell A3	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A4	Grid Cell A4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A5	Grid Cell A5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A6	Grid Cell A6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A7	Grid Cell A7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A8	Grid Cell A8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	DUP-01-01122024
			3.5-4.0	X	NA	NA	--	--	--	--	--
4	P4-A9	Grid Cell A9; PAH Step-out sampling	1.5-2.0	X	X	X	--	--	--	X	--
			2.5-3.0	X	X	X	--	--	--	X	--
			3.5-4.0	NA	NA	NA	--	--	--	NA	--
4	P4-B2	Grid Cell B2	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	DUP-01-01102024
4	P4-B3	Grid Cell B3	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-B4	Grid Cell B4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
4	P4-B5	Grid Cell B5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	DUP-02-01102024
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-B6	Grid Cell B6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
4	P4-B7	Grid Cell B7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-B8	Grid Cell B8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-B9	Grid Cell B9; PAH Step-out sampling	1.5-2.0	X	X	X	--	--	--	X	--
			2.5-3.0	X	X	X	--	--	--	X	--
			3.5-4.0	NA	NA	NA	--	--	--	NA	--
4	P4-B10	Grid Cell A10; PAH Step-out sampling	1.5-2.0	X	X	X	--	--	--	X	--
			2.5-3.0	X	X	X	--	--	--	X	--
			3.5-4.0	NA	NA	NA	--	--	--	NA	--

Notes:

1. Duplicate samples were analyzed for the same constituents as the primary sample.

Abbreviations:

bgs = Below ground surface
EPA = Environmental Protection Agency
ID = Identifier
NA = Sample was placed on hold and not analyzed
OCPs = Organochlorine pesticides
PAHs = Polycyclic aromatic hydrocarbons
SIM = Selective ion monitoring
TPHd = Total petroleum hydrocarbons quantified as diesel
TPHmo = Total petroleum hydrocarbons quantified as motor oil
X = Sample was analyzed
-- = Not applicable

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TABLE 2: METALS IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
	2022 Soil Investigation																				
	P1-1	P1-1-1.0	7/13/2022	1.0	**0.91**	**9.3**	**180**	**0.56**	<0.50	**62**	**15**	**37**	**34**	**0.30**	**0.78**	**57**	**1.2**	<0.50	<0.50	**72**	**100**
		P1-1-2.5	7/13/2022	2.5	<0.5	**8.4**	**200**	**0.65**	<0.5	**69**	**17**	**33**	**9**	<0.050	**0.9**	**67**	**1.3**	<0.5	<0.5	**74**	**72**
		P1-1-4.0	7/13/2022	4.0	<0.5	**6.1**	**180**	**0.63**	<0.5	**70**	**12**	**29**	**6.8**	<0.050	<0.5	**58**	**1.2**	<0.5	<0.5	**71**	**59**
	P1-2	P1-2-1.0	7/13/2022	1.0	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-2-2.5	7/13/2022	2.5	**1.3**	**12**	**300**	**0.73**	<0.5	**37**	**16**	**28**	**13**	**0.079**	**1.3**	**53**	**1.3**	<0.5	<0.5	**40**	**66**
		P1-2-4.0	7/13/2022	4.0	--	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-3	P1-3-1.0	7/13/2022	1.0	**2.7**	**83**	**190**	**0.5**	<0.5	**33**	**19**	**32**	**34**	**0.23**	**1.0**	**48**	**1.1**	<0.5	<0.5	**42**	**74**
		P1-3-2.5	7/13/2022	2.5	--	**35**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-3-4.0	7/13/2022	4.0	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																				
	P1-A2	P1-A2-2.0	1/11/2024	2.0	--	**8.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A2-3.0	1/11/2024	3.0	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A3	P1-A3-2.0	1/11/2024	2.0	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A3-3.0	1/11/2024	3.0	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A4	P1-A4-2.0	1/11/2024	2.0	--	**4.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A4-3.0	1/11/2024	3.0	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A5	P1-A5-2.0	1/11/2024	2.0	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A5-3.0	1/11/2024	3.0	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A6	P1-A6-2.0	1/11/2024	2.0	--	**5.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A6-3.0	1/11/2024	3.0	--	**5.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1	P1-A7	P1-A7-1.0	1/11/2024	1.0	<2.9 UJ	**8.0**	**160**	<0.48	<0.48	**50**	**12**	**31**	**34**	<0.16	<1.1	**45**	<2.9	<0.48	<2.9	**58**	**81**
		P1-A7-2.5	1/11/2024	2.5	<2.9 UJ	**4.1**	**130**	<0.49	<0.49	**46**	**11**	**20**	**6**	<0.16	<1.1	**41**	<2.9	<0.49	<2.9	**55**	**40**
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	<2.9 UJ	**6.1**	**170**	<0.48	<0.48	**48**	**14**	**33**	**47**	<0.16	<1	**46**	<2.9	<0.48	<2.9	**58**	**95**
		P1-A8-1.0	1/11/2024	1.0	<2.9 UJ	**7.5**	**200**	**0.49**	**0.71**	**47**	**23**	**35**	**54**	<0.16	<1	**52**	<2.9	<0.48	<2.9	**63**	**100**
		P1-A8-2.5	1/11/2024	2.5	<2.9 UJ	**5.5**	**140**	<0.49	<0.49	**40**	**11**	**21**	**9.5**	<0.16	**1.5**	**40**	<2.9	**0.51**	<2.9	**57**	**41**
	P1-A9	P1-A9-2.0	1/11/2024	2.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A9-3.0	1/11/2024	3.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A10	P1-A10-2.0	1/11/2024	2.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A10-3.0	1/11/2024	3.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B2	P1-B2-2.0	1/11/2024	2.0	--	**40**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B2-3.0	1/11/2024	3.0	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B3	P1-B3-2.0	1/11/2024	2.0	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B3-3.0	1/11/2024	3.0	--	**7.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B4	P1-B4-2.0	1/11/2024	2.0	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-3.0	1/11/2024	3.0	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-4.0	1/11/2024	4.0	--	**9.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B5	P1-B5-2.0	1/11/2024	2.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-3.0	1/11/2024	3.0	--	**150**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-4.0	1/11/2024	4.0	--	**130**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5D-5.0	4/19/2024	5.0	--	**5.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		DUP-2-240419	4/19/2024	5.0	--	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
1	P1-B6	P1-B6-2.0	1/11/2024	2.0	--	41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-3.0	1/11/2024	3.0	--	110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-4.0	1/11/2024	4.0	--	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-5.0	4/19/2024	5.0	--	23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-6.0	4/19/2024	6.0	--	6.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B7	P1-B7-2.0	1/11/2024	2.0	--	32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-3.0	1/11/2024	3.0	--	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-4.0	1/11/2024	4.0	--	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	***2022 Soil Investigation***																				
	P2-1	P2-1-1.0	7/13/2022	1.0	--	28	--	--	--	--	--	--	210	--	--	--	--	--	--	--	--
		P2-1-2.5	7/13/2022	2.5	1.4	26	150	<0.5	<0.5	46	12	29	63	0.65	<0.5	37	0.93	<0.5	<0.5	55	180
		P2-1-4.0	7/13/2022	4.0	--	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-2	P2-2-1.0	7/13/2022	1.0	1.8	37	170	<0.5	<0.5	34	12	42	200	0.43	<0.5	38	1.6	<0.5	<0.5	73	150
		P2-2-2.5	7/13/2022	1.0	--	41	--	--	--	--	--	--	10	--	--	--	--	--	--	--	--
		P2-2-4.0	7/13/2022	4.0	--	3.4	--	--	--	--	--	--	6.9	--	--	--	--	--	--	--	--
	P2-3	P2-3-1.0	7/13/2022	1.0	1.5	32	180	<0.5	<0.5	59	14	81	140	0.48	0.72	61	1.1	<0.5	<0.5	53	190
		P2-3-2.5	7/13/2022	2.5	<0.5	6.7	190	0.73	<0.5	73	13	32	7.6	<0.050	<0.5	55	1.2	<0.5	<0.5	71	61
	P2-4	P2-4-1.0	7/13/2022	1.0	3.6	220	280	0.57	<0.5	46	9.8	60	56	2.1	<0.5	83	0.91	<0.5	<0.5	34	62
		P2-4-2.5	7/13/2022	2.5	--	8.9	--	--	--	--	--	--	12	<0.16 R	--	--	--	--	--	--	--
		P2-4-4.0	7/13/2022	4.0	--	4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																				
	P2-A4	P2-A4-2.0	1/8/2024	2.0	--	4.7	--	--	--	--	--	--	6.6	<0.16	--	--	--	--	--	--	--
		P2-A4-3.0	1/8/2024	3.0	--	4.0	--	--	--	--	--	--	5.6	<0.15	--	--	--	--	--	--	--
	P2-A5	P2-A5-2.0	1/8/2024	2.0	--	4.4	--	--	--	--	--	--	6.0	<0.16	--	--	--	--	--	--	--
		P2-A5-3.0	1/8/2024	3.0	--	4.1	--	--	--	--	--	--	8.3	<0.16	--	--	--	--	--	--	--
	P2-A6	P2-A6-2.0	1/8/2024	2.0	--	6.1	--	--	--	--	--	--	71	<0.15	--	--	--	--	--	--	--
		P2-A6-3.0	1/8/2024	3.0	--	5.1	--	--	--	--	--	--	12	<0.14	--	--	--	--	--	--	--
	P2-A7	P2-A7-2.0	1/8/2024	2.0	--	5.9	--	--	--	--	--	--	12	<0.15	--	--	--	--	--	--	--
		P2-A7-3.0	1/8/2024	3.0	--	4.2	--	--	--	--	--	--	6.3	<0.15	--	--	--	--	--	--	--
	P2-A8	P2-A8-2.0	1/8/2024	2.0	--	9.6	--	--	--	--	--	--	110	<0.15	--	--	--	--	--	--	--
		P2-A8-3.0	1/8/2024	3.0	--	4.6	--	--	--	--	--	--	5.3	<0.15	--	--	--	--	--	--	--
	P2-A9	P2-A9-2.0	1/8/2024	2.0	--	9.9	--	--	--	--	--	--	44	<0.14	--	--	--	--	--	--	--
		P2-A9-2.0(DUP)	1/8/2024	2.0	--	11	--	--	--	--	--	--	94	<0.16	--	--	--	--	--	--	--
		P2-A9-3.0	1/8/2024	3.0	--	4.6	--	--	--	--	--	--	5.3	<0.16	--	--	--	--	--	--	--
	P2-A10	P2-A10-2.0	1/8/2024	2.0	--	6.2	--	--	--	--	--	--	35	0.46	--	--	--	--	--	--	--
		P2-A10-3.0	1/8/2024	3.0	--	4.4	--	--	--	--	--	--	5.3	<0.16	--	--	--	--	--	--	--
	P2-B1	P2-B1-2.0	1/8/2024	2.0	--	36	--	--	--	--	--	--	180	0.42	--	--	--	--	--	--	--
		P2-B1-3.0(DUP)	1/8/2024	3.0	--	20	--	--	--	--	--	--	7.3	<0.15	--	--	--	--	--	--	--
		P2-B1-3.0	1/8/2024	3.0	--	33	--	--	--	--	--	--	9.2	<0.15	--	--	--	--	--	--	--
		P2-B1-4.0	1/8/2024	4.0	--	18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B1D-5.0	4/19/2024	5.0	--	4.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-1D	P2-1D-5.0	1/8/2024	5.0	--	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-1D-6.0	1/8/2024	6.0	--	5.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B3	P2-B3-2.0	1/8/2024	2.0	--	21	--	--	--	--	--	--	6.2	<0.14	--	--	--	--	--	--	--
		P2-B3-3.0	1/8/2024	3.0	--	13	--	--	--	--	--	--	13	<0.14	--	--	--	--	--	--	--
		P2-B3-4.0	1/8/2024	4.0	--	5.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
2	P2-B4	P2-B4-2.0	1/8/2024	2.0	--	**24**	--	--	--	--	--	--	**51**	**0.27**	--	--	--	--	--	--	--
		P2-B4-3.0	1/8/2024	3.0	--	**53**	--	--	--	--	--	--	**7.3**	<0.14	--	--	--	--	--	--	--
		P2-B4-4.0	1/8/2024	4.0	--	**74**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B4D-5.0	4/19/2024	5.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B5	P2-B5-2.0	1/8/2024	2.0	--	**120**	--	--	--	--	--	--	**24**	**0.27**	--	--	--	--	--	--	--
		P2-B5-3.0	1/8/2024	3.0	--	**23**	--	--	--	--	--	--	**10**	<0.14	--	--	--	--	--	--	--
		P2-B5-4.0	1/8/2024	4.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B6	P2-B6-2.0	1/8/2024	2.0	--	**310**	--	--	--	--	--	--	**66**	**0.49**	--	--	--	--	--	--	--
		P2-B6-3.0	1/8/2024	3.0	--	**53**	--	--	--	--	--	--	**14**	<0.14	--	--	--	--	--	--	--
		P2-B6-4.0	1/8/2024	4.0	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6-4.0(DUP)	1/8/2024	4.0	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6D-5.0	4/19/2024	5.0	--	**3.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B7	P2-B7-2.0	1/8/2024	2.0	--	**210**	--	--	--	--	--	--	**78**	**11**	--	--	--	--	--	--	--
		P2-B7-3.0	1/8/2024	3.0	--	**72**	--	--	--	--	--	--	**14**	**0.32**	--	--	--	--	--	--	--
		P2-B7-4.0	1/8/2024	4.0	--	**38**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B7D-5.0	4/19/2024	5.0	--	**6.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B8	P2-B8-2.0	1/8/2024	2.0	--	**100**	--	--	--	--	--	--	**68**	**0.5**	--	--	--	--	--	--	--
		P2-B8-3.0	1/8/2024	3.0	--	**91**	--	--	--	--	--	--	**16**	<0.14	--	--	--	--	--	--	--
		P2-B8-4.0	1/8/2024	4.0	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B9	P2-B9-2.0	1/8/2024	2.0	--	**19**	--	--	--	--	--	--	**24**	**0.24**	--	--	--	--	--	--	--
		P2-B9-3.0	1/8/2024	3.0	--	**59**	--	--	--	--	--	--	**25**	**0.18**	--	--	--	--	--	--	--
		P2-B9-4.0	1/8/2024	4.0	--	**29**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-5.0	4/19/2024	5.0	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-6.0	4/19/2024	6.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B10	P2-B10-2.0	1/8/2024	2.0	--	**130**	--	--	--	--	--	--	**140**	**0.39**	--	--	--	--	--	--	--
		P2-B10-3.0	1/8/2024	3.0	--	**46**	--	--	--	--	--	--	**87**	**0.36**	--	--	--	--	--	--	--
		P2-B10-4.0	1/8/2024	4.0	--	**33**	--	--	--	--	--	--	**14**	--	--	--	--	--	--	--	--
		P2-B10D-5.0	4/19/2024	5.0	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B10D-6.0	4/19/2024	6.0	--	**2.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	***2022 Soil Investigation***																				
	P3-1	P3-1-1.0	7/14/2022	1.0	--	**63**	--	--	--	--	--	--	**15**	<0.15 R	--	--	--	--	--	--	--
		P3-1-2.5	7/14/2022	2.5	<2.7	**6.5**	**190**	**0.56**	**0.59**	**46**	**10**	**26**	**11**	<0.17	<0.91	**45**	<2.7	<0.45	<2.7	**43**	**56**
	P3-2	P3-2-1.0	7/14/2022	1.0	<2.8	**120**	**66**	<0.47	**0.65**	**35**	**7.3**	**42**	**66**	**1.7**	<0.94	**41**	<2.8	<0.47	<2.8	**35**	**96**
		P3-2-2.5	7/14/2022	2.5	<2.7 R	**67**	**130**	<0.45	**0.57**	**56**	**13**	**60**	**22**	**0.96**	<0.89	**65**	<2.7	<0.45	<2.7	**39**	**110**
		P3-2-4.0	7/14/2022	4.0	--	**6.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-3	P3-3-1.0	7/14/2022	1.0	<2.7	**12**	**180**	<0.44	**0.72**	**41**	**9.5**	**32**	**84**	**0.21**	<0.88	**39**	<2.7	<0.44	<2.7	**41**	**150**
		P3-3-2.5	7/14/2022	2.5	<3.0 UJ	**7.8**	**160**	<0.50	**0.69**	**37**	**12**	**30**	**68**	**0.20**	<0.99	**40**	<3.0	**0.56**	<3.0	**36**	**140**
	P3-4	P3-4-1.0	7/14/2022	1.0	<2.8	**13**	**130**	<0.47	**0.57**	**45**	**15**	**34**	**43**	<0.15	<0.94	**45**	<2.8	<0.47	<2.8	**50**	**73**
		P3-4-2.5	7/14/2022	2.5	--	**47**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4-4.0	7/14/2022	4.0	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																				
	P3-A1	P3-A1-2.0	1/9/2024	2.0	--	**12**	--	--	--	--	--	--	**94**	**16 J**	--	--	--	--	--	--	--
		P3-A1-3.0	1/9/2024	3.0	--	**6.8**	--	--	--	--	--	--	**22**	**4.5 J**	--	--	--	--	--	--	--
		P3-A1-4.0	1/9/2024	4.0	--	**4.5**	--	--	--	--	--	--	--	**0.52**	--	--	--	--	--	--	--
	P3-A2	P3-A2-2.0	1/9/2024	2.0	--	**6.7**	--	--	--	--	--	--	**17**	**0.21 J**	--	--	--	--	--	--	--
		P3-A2-3.0	1/9/2024	3.0	--	**13**	--	--	--	--	--	--	**46**	**0.47 J**	--	--	--	--	--	--	--
		P3-A2-4.0	1/9/2024	4.0	--	**5.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																
3	P3-A3	P3-A3-2.0	1/9/2024	2.0	--	**7.8**	--	--	--	--	--	--	**21**	<0.15 UJ	--	--	--	--	--	--	--
		P3-A3-3.0	1/9/2024	3.0	--	**6.6**	--	--	--	--	--	--	**18**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A4	P3-A4-2.0	1/9/2024	2.0	--	**21**	--	--	--	--	--	--	**92**	**0.32 J**	--	--	--	--	--	--	--
		P3-A4-3.0	1/9/2024	3.0	--	**3.1**	--	--	--	--	--	--	**6.4**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A5	P3-A5-2.0	1/9/2024	2.0	--	**15**	--	--	--	--	--	--	**32**	**0.17 J**	--	--	--	--	--	--	--
		P3-A5-3.0	1/9/2024	3.0	--	**8.6**	--	--	--	--	--	--	**60**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A6	P3-A6-2.0	1/9/2024	2.0	--	**6.1**	--	--	--	--	--	--	**22**	<0.14 UJ	--	--	--	--	--	--	--
		P3-A6-3.0	1/9/2024	3.0	--	**3.8**	--	--	--	--	--	--	**6.7**	<0.16 UJ	--	--	--	--	--	--	--
	P3-A7	P3-A7-2.0	1/9/2024	2.0	--	**33**	--	--	--	--	--	--	**99**	**0.65**	--	--	--	--	--	--	--
		P3-A7-3.0	1/9/2024	3.0	--	**35**	--	--	--	--	--	--	**78**	**0.36**	--	--	--	--	--	--	--
		P3-A7-4.0*	1/9/2024	4.0	--	**6.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-A7-4.0	1/9/2024	4.0	--	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-A8	P3-A8-2.0	1/9/2024	2.0	--	**5.6**	--	--	--	--	--	--	**9.0**	<0.14	--	--	--	--	--	--	--
		P3-A8-3.0	1/9/2024	3.0	--	**10**	--	--	--	--	--	--	**16**	<0.16	--	--	--	--	--	--	--
	P3-A9	P3-A9-2.0	1/9/2024	2.0	--	**15**	--	--	--	--	--	--	**88**	<0.16	--	--	--	--	--	--	--
		P3-A9-2.0(DUP)	1/9/2024	2.0	--	**6.1**	--	--	--	--	--	--	**44**	<0.15	--	--	--	--	--	--	--
		P3-A9-3.0	1/9/2024	3.0	--	**3.6**	--	--	--	--	--	--	**7.2**	<0.15	--	--	--	--	--	--	--
	P3-A10	P3-A10-2.0	1/9/2024	2.0	--	**10**	--	--	--	--	--	--	**25**	<0.16	--	--	--	--	--	--	--
		P3-A10-3.0	1/9/2024	3.0	--	**11**	--	--	--	--	--	--	**32**	<0.17	--	--	--	--	--	--	--
	P3-B1	P3-B1-2.0	1/9/2024	2.0	--	**69**	--	--	--	--	--	--	**98**	**0.5**	--	--	--	--	--	--	--
		P3-B1-3.0	1/9/2024	3.0	--	**39**	--	--	--	--	--	--	**75**	**0.32**	--	--	--	--	--	--	--
		P3-B1-4.0	1/9/2024	4.0	--	**16**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-5.0	4/18/2024	5.0	--	**90**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-6.0	4/18/2024	6.0	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B2	P3-B2-2.0	1/9/2024	2.0	--	**44**	--	--	--	--	--	--	**50**	**0.38**	--	--	--	--	--	--	--
		P3-B2-3.0	1/9/2024	3.0	--	**14**	--	--	--	--	--	--	**44**	**0.35**	--	--	--	--	--	--	--
		P3-B2-3.0(DUP)	1/9/2024	3.0	--	**12**	--	--	--	--	--	--	**56**	**0.29**	--	--	--	--	--	--	--
		P3-B2-4.0	1/9/2024	4.0	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B2D-5.0	4/18/2024	5.0	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B3	P3-B3-2.0	1/9/2024	2.0	--	**32**	--	--	--	--	--	--	**59**	**0.25**	--	--	--	--	--	--	--
		P3-B3-3.0	1/9/2024	3.0	--	**18**	--	--	--	--	--	--	**38**	**0.28**	--	--	--	--	--	--	--
		P3-B3-4.0	1/9/2024	4.0	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B3D-5.0	4/18/2024	5.0	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B4	P3-B4-2.0	1/9/2024	2.0	--	**35**	--	--	--	--	--	--	**72**	**0.85**	--	--	--	--	--	--	--
		P3-B4-3.0	1/9/2024	3.0	--	**88**	--	--	--	--	--	--	**140**	**0.32**	--	--	--	--	--	--	--
		P3-B4-4.0	1/9/2024	4.0	--	**38**	--	--	--	--	--	--	**45**	--	--	--	--	--	--	--	--
		P3-B4D-5.0	4/18/2024	5.0	--	**8.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B5	P3-B5-2.0	1/9/2024	2.0	--	**85**	--	--	--	--	--	--	**71**	**0.48**	--	--	--	--	--	--	--
		P3-B5-3.0	1/9/2024	3.0	--	**120**	--	--	--	--	--	--	**27**	**0.17**	--	--	--	--	--	--	--
		P3-B5-4.0	1/9/2024	4.0	--	**120**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B5D-5.0	4/18/2024	5.0	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B6	P3-B6-2.0	1/9/2024	2.0	--	**79**	--	--	--	--	--	--	**94**	**0.44**	--	--	--	--	--	--	--
		P3-B6-3.0	1/9/2024	3.0	--	**28**	--	--	--	--	--	--	**64**	**0.27 J**	--	--	--	--	--	--	--
		P3-B6-4.0	1/9/2024	4.0	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B6D-5.0	4/18/2024	5.0	--	**7.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																
3	P3-B7	P3-B7-2.0	1/9/2024	2.0	--	**73**	--	--	--	--	--	--	**98**	**0.40 J**	--	--	--	--	--	--	--
		P3-B7-3.0	1/9/2024	3.0	--	**38**	--	--	--	--	--	--	**52**	**0.68 J**	--	--	--	--	--	--	--
		P3-B7-4.0	1/9/2024	4.0	--	**21**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-5.0	4/18/2024	5.0	--	**51**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-6.0	4/18/2024	6.0	--	**4.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B8	P3-B8-2.0	1/9/2024	2.0	--	**23**	--	--	--	--	--	--	**94**	**0.38 J**	--	--	--	--	--	--	--
		P3-B8-3.0	1/9/2024	3.0	--	**57**	--	--	--	--	--	--	**120**	**0.80 J**	--	--	--	--	--	--	--
		P3-B8-4.0	1/9/2024	4.0	--	**120**	--	--	--	--	--	--	**19**	--	--	--	--	--	--	--	--
		P3-B8D-5.0	4/18/2024	5.0	--	**6.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-4D	P3-4D-5.0	1/9/2024	5.0	--	**6.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4D-6.0	1/9/2024	6.0	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B9	P3-B9-2.0	1/9/2024	2.0	--	**67**	--	--	--	--	--	--	**94**	**0.59 J**	--	--	--	--	--	--	--
		P3-B9-3.0	1/9/2024	3.0	--	**53**	--	--	--	--	--	--	**77**	**0.45 J**	--	--	--	--	--	--	--
		P3-B9-4.0	1/9/2024	4.0	--	**17**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B9D-5.0	4/18/2024	5.0	--	**9.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B10	P3-B10-2.0	1/9/2024	2.0	--	**13**	--	--	--	--	--	--	**33**	<0.15 UJ	--	--	--	--	--	--	--
		P3-B10-3.0	1/9/2024	3.0	--	**23**	--	--	--	--	--	--	**45**	<0.16	--	--	--	--	--	--	--
		P3-B10-4.0	1/9/2024	4.0	--	**3.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T1	P3-T1-1.0	4/18/2024	1.0	--	**46**	--	--	--	--	--	--	**50 J**	**0.28**	--	--	--	--	--	--	--
		DUP-3-240418	4/18/2024	1.0	--	**27**	--	--	--	--	--	--	**46**	**0.20**	--	--	--	--	--	--	--
		P3-T1-1.5	4/18/2024	1.5	--	**7.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-T1-2.0	4/18/2024	2.0	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T2	P3-T2-1.0	4/18/2024	1.0	--	**5.9**	--	--	--	--	--	--	**52**	**0.16**	--	--	--	--	--	--	--
	P3-T3	P3-T3-1.0	4/18/2024	1.0	--	**7.5**	--	--	--	--	--	--	**43**	<0.16	--	--	--	--	--	--	--
	P3-T4	P3-T4-1.0	4/18/2024	1.0	--	**11**	--	--	--	--	--	--	**490**	**0.17**	--	--	--	--	--	--	--
		P3-T4-1.5	4/18/2024	1.5	--	--	--	--	--	--	--	--	**88**	--	--	--	--	--	--	--	--
		P3-T4-2.0	4/18/2024	2.0	--	--	--	--	--	--	--	--	**170**	--	--	--	--	--	--	--	--
4	***2022 Soil Investigation***																				
	P4-1	P4-1-1.0	7/14/2022	1.0	<3.0	**140**	**190**	<0.50	**1.9**	**75**	**14**	**81**	**280**	**2.1**	<1.0	**120**	<3.0	<0.50	<3.0	**37**	**440**
		P4-1-2.5	7/14/2022	2.5	<2.8	**88**	**160**	<0.47	**0.47**	**26**	**17**	**28**	**21**	**0.25**	<0.93	**47**	<2.8	<0.47	<2.8	**24**	**60**
		P4-1-4.0	7/14/2022	4.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-2	P4-2-1.0	7/14/2022	1.0	<2.8	**23**	**100**	<0.46	<0.46	**19**	**9.6**	**23**	**13**	<0.16	<0.92	**31**	<2.8	<0.46	<2.8	**23**	**44**
		P4-2-2.5	7/14/2022	2.5	<3.1	**4.2**	**200**	<0.52	**0.55**	**44**	**14**	**27**	**11**	<0.16	<1.0	**21**	<3.1	<0.52	<3.1	**42**	**44**
	P4-3	P4-3-1.0	7/14/2022	1.0	--	**29**	--	--	--	--	--	--	**22**	<0.16 R	--	--	--	--	--	--	--	--
		P4-3-2.5	7/14/2022	2.5	<2.7	**8.2**	**180**	<0.45	<0.45	**25**	**9.8**	**21**	**12**	<0.14	<0.91	**34**	<2.7	<0.45	<2.7	**26**	**62**
	P4-4	P4-4-1.0	7/14/2022	1.0	<2.7	**51**	**85**	<0.45	<0.45	**16**	**5.3**	**36**	**42**	**0.81**	<0.89	**20**	<2.7	<0.45	<2.7	**24**	**190**
		P4-4-2.5	7/14/2022	2.5	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P4-4-4.0	7/14/2022	4.0	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
	2024 Soil Investigation																				
4	P4-A1	P4-A1-2.0	1/10/2024	2.0	--	**21**	--	--	--	--	--	--	**53**	**0.19**	--	--	--	--	--	--	--
		P4-A1-3.0	1/10/2024	3.0	--	**4.5**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A2	P4-A2-2.0	1/10/2024	2.0	--	**16**	--	--	--	--	--	--	**46**	<0.14	--	--	--	--	--	--	--
		P4-A2-3.0	1/10/2024	3.0	--	**3.3**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A3	P4-A3-2.0	1/10/2024	2.0	--	**5.1**	--	--	--	--	--	--	**5.7**	<0.16	--	--	--	--	--	--	--
		P4-A3-3.0	1/10/2024	3.0	--	**4.6**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-A4	P4-A4-2.0	1/10/2024	2.0	--	**5.0**	--	--	--	--	--	--	**7.5**	<0.16	--	--	--	--	--	--	--
		P4-A4-3.0	1/10/2024	3.0	--	**2.8**	--	--	--	--	--	--	**5.8**	<0.14	--	--	--	--	--	--	--
	P4-A5	P4-A5-2.0	1/10/2024	2.0	--	**6.9**	--	--	--	--	--	--	**9.1**	<0.15	--	--	--	--	--	--	--
		P4-A5-3.0	1/10/2024	3.0	--	**4.5**	--	--	--	--	--	--	**7.6**	<0.16	--	--	--	--	--	--	--
	P4-A6	P4-A6-2.0	1/12/2024	2.0	--	**8.3**	--	--	--	--	--	--	**23**	<0.14	--	--	--	--	--	--	--
		P4-A6-3.0	1/12/2024	3.0	--	**4.5**	--	--	--	--	--	--	**5.3**	<0.14	--	--	--	--	--	--	--
	P4-A7	P4-A7-2.0	1/12/2024	2.0	--	**78**	--	--	--	--	--	--	**31**	**0.37**	--	--	--	--	--	--	--
		P4-A7-3.0	1/12/2024	3.0	--	**8.1**	--	--	--	--	--	--	**5.3**	<0.17	--	--	--	--	--	--	--
	P4-A8	P4-A8-2.0	1/12/2024	2.0	--	**110**	--	--	--	--	--	--	**17**	<0.16	--	--	--	--	--	--	--
		P4-A8-3.0	1/12/2024	3.0	--	**85**	--	--	--	--	--	--	**23**	**0.22**	--	--	--	--	--	--	--
		P4-A8-3.0(DUP)	1/12/2024	3.0	--	**69**	--	--	--	--	--	--	**20**	**0.18**	--	--	--	--	--	--	--
		P4-A8-4.0	1/12/2024	4.0	--	**4.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-A9	P4-A9-2.0	1/12/2024	2.0	--	**7.0**	--	--	--	--	--	--	**6.1**	<0.16	--	--	--	--	--	--	--
		P4-A9-3.0	1/12/2024	3.0	--	**5.0**	--	--	--	--	--	--	**5.8**	<0.16	--	--	--	--	--	--	--
	P4-B2	P4-B2-2.0	1/10/2024	2.0	--	**63**	--	--	--	--	--	--	**15**	<0.16	--	--	--	--	--	--	--
		P4-B2-3.0	1/10/2024	3.0	--	**11**	--	--	--	--	--	--	**7.2**	<0.15	--	--	--	--	--	--	--
	P4-B3	P4-B3-2.0	1/10/2024	2.0	--	**68**	--	--	--	--	--	--	**10**	<0.15	--	--	--	--	--	--	--
		P4-B3-3.0	1/10/2024	3.0	--	**8.1**	--	--	--	--	--	--	**6.3**	<0.14	--	--	--	--	--	--	--
	P4-B4	P4-B4-2.0	1/10/2024	2.0	--	**120**	--	--	--	--	--	--	**14**	<0.16	--	--	--	--	--	--	--
		P4-B4-3.0	1/10/2024	3.0	--	**5.0**	--	--	--	--	--	--	**6.6**	**0.44**	--	--	--	--	--	--	--
	P4-B5	P4-B5-2.0	1/10/2024	2.0	--	**130**	--	--	--	--	--	--	**18**	**0.28**	--	--	--	--	--	--	--
		P4-B5-2.0(DUP)	1/10/2024	2.0	--	**89**	--	--	--	--	--	--	**12**	**0.29**	--	--	--	--	--	--	--
		P4-B5-3.0	1/10/2024	3.0	--	**2.2**	--	--	--	--	--	--	**5.4**	<0.14	--	--	--	--	--	--	--
	P4-B6	P4-B6-2.0	1/10/2024	2.0	--	**75**	--	--	--	--	--	--	**13**	<0.15	--	--	--	--	--	--	--
		P4-B6-3.0	1/10/2024	3.0	--	**30**	--	--	--	--	--	--	**9.4**	<0.16	--	--	--	--	--	--	--
		P4-B6-4.0	1/10/2024	4.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-B7	P4-B7-2.0	1/10/2024	2.0	--	**73**	--	--	--	--	--	--	**9.5**	<0.16	--	--	--	--	--	--	--
		P4-B7-3.0	1/10/2024	3.0	--	**6.1**	--	--	--	--	--	--	**6.0**	**0.18**	--	--	--	--	--	--	--
	P4-B8	P4-B8-2.0	1/10/2024	2.0	--	**38**	--	--	--	--	--	--	**12**	<0.15	--	--	--	--	--	--	--
		P4-B8-3.0	1/10/2024	3.0	--	**8.7**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-B9	P4-B9-2.0	1/10/2024	2.0	--	**16**	--	--	--	--	--	--	**13**	<0.16	--	--	--	--	--	--	--
		P4-B9-3.0	1/10/2024	3.0	--	**5.4**	--	--	--	--	--	--	**6.4**	<0.15	--	--	--	--	--	--	--
	P4-B10	P4-B10-2.0	1/10/2024	2.0	--	**21**	--	--	--	--	--	--	**180**	**4.8**	--	--	--	--	--	--	--
		P4-B10-3.0	1/10/2024	3.0	--	**6.1**	--	--	--	--	--	--	**7.2**	**0.41**	--	--	--	--	--	--	--

TABLE 2: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																
Screening Criteria																					
Residential DTSC-SLs[2]					31	11 [3]	15000	16	7.1	85000 [7]	23	3100	80	0.67	390	820	390	390	0.78	390	23000
Commercial/Industrial DTSC-SLs[2]					470	11 [3]	220000	230	79	360000 [7]	350	47000	500	2.9	5800	11000	5800	5800	12	5800	350000
Total Threshold Limit Concentration[4]					500	500	10000	75	100	2500	8000	2500	1000	20	3500	2000	100	500	700	2400	5000
10 x Soluble Threshold Leaching Criteria[5]					150	50	1000	7.5	10	50	800	250	50	2	3500	200	10	50	70	240	2500
20x Toxicity Criteria[6]					None	100	2000	None	20	100	None	None	100	4	None	None	20	100	None	None	None

Notes:

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical using United States Environmental Protection Agency (USEPA) Methods 6010B and 7471A (for mercury).

Select samples were analyzed by McCampbell Analytical for metals using USEPA Method 6020. Shaded concentrations exceed residential screening criteria.

2. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).

3. Analytical results for arsenic in soil are compared to the 99th percentile of background arsenic concentrations as presented by Duvergé (2011).

4. Total Threshold Limit Concentration, as presented in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

5. Ten times the Soluble Threshold Limit Concentration, as presented in CCR, Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

6. Twenty times the Toxicity Criteria, as presented in the Code of Federal Regulations (CFR), Title 40, Part 261, Subpart C, Section 261.24.

7. The USEPA residential and commercial/industrial RSLs for chromium(III) were selected as surrogate SLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations:

< = Analyte not detected above the reporting limit shown
-- = Not analyzed
bgs = Below ground surface
bold = Analyte detected above the reporting limit
DUP = Duplicate sample
DTSC = Department of Toxic Substances Control
J = The value is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications.
mg/kg = Milligrams per kilogram
R = The data are rejected because the MS/MSD results are outside specifications or the holding time was exceeded
SL = Screening Level
UJ = The non-detected data is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications

References:

DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.
Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

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TABLE 3: POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Polycyclic Aromatic Hydrocarbons[1]																	
					Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs	*mg/kg*																	
1	***2022 Soil Investigation***																					
	P1-1	P1-1-1.0	7/13/2022	1.0	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
		P1-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P1-1-4.0	7/13/2022	4.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	NA
	P1-2	P1-2-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P1-3	P1-3-1.0	7/13/2022	1.00	**0.015**	<0.0099	**0.029**	**0.14**	**0.19**	**0.15**	**0.11**	**0.15**	**0.17**	**0.027**	**0.15**	<0.0099	**0.15**	**0.022**	**0.032**	**0.05**	**0.071**	**0.19**	**0.26**
	2024 Soil Investigation																					
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A7	P1-A7-2.5	1/11/2024	2.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	NA
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-2.5	1/11/2024	2.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
2	***2022 Soil Investigation***																					
	P2-1	P2-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	**0.018**	**0.028**	**0.024**	**0.025**	**0.02**	**0.022**	<0.01	**0.036**	<0.01	**0.028**	<0.01	<0.01	<0.01	**0.024**	**0.041**	**0.045**
	P2-2	P2-2-1.0	7/13/2022	1.0	<0.04	<0.04	<0.04	**0.13**	**0.24**	**0.18**	**0.21**	**0.18**	**0.14**	<0.04	**0.12**	<0.04	**0.25**	<0.04	<0.04	<0.04	<0.04	**0.16**	**0.34**
	P2-3	P2-3-1.0	7/13/2022	1.0	<0.04	<0.04	<0.04	**0.047**	**0.064**	**0.063**	**0.059**	**0.044**	**0.059**	<0.04	**0.061**	<0.04	**0.058**	<0.04	<0.04	<0.04	**0.051**	**0.068**	**0.12**
		P2-3-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P2-4	P2-4-1.0	7/13/2022	1.0	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
3	***2022 Soil Investigation***																					
	P3-1	P3-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P3-2	P3-2-1.0	7/13/2022	1.0	<0.1	<0.1	<0.1	**0.16**	**0.28**	**0.28**	**0.22**	**0.24**	**0.22**	<0.1	**0.16**	<0.1	**0.27**	<0.1	<0.1	<0.1	<0.1	**0.19**	**0.45**
		P3-2-2.5	7/13/2022	2.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
	P3-3	P3-3-1.0	7/13/2022	1.0	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	NA
		P3-3-2.5	7/13/2022	2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	NA
	P3-4	P3-4-1.0	7/13/2022	1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA
	2024 Soil Investigation																					
	P3-T1	P3-T1-1.0	4/18/2024	1.0	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
		DUP-3-240418	4/18/2024	1.0	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T2	P3-T2-1.0	4/18/2024	1.0	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T3	P3-T3-1.0	4/18/2024	1.0	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	NA
	P3-T4	P3-T4-1.0	4/18/2024	1.0	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
4	***2022 Soil Investigation***																					
	P4-1	P4-1-1.0	7/13/2022	1.0	<0.25	<0.25	<0.25	<0.25	**0.31**	**0.29**	**0.25**	**0.27**	**0.26**	<0.25	<0.25	<0.25	**0.29**	<0.25	<0.25	<0.25	<0.25	**0.26**	0.65
		P4-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-2	P4-2-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P4-2-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-3	P4-3-1.0	7/13/2022	1.0	<0.01 R	<0.01 R	**0.014 J**	**0.036 J**	**0.066 J**	**0.042 J**	**0.036 J**	**0.047 J**	**0.045 J**	<0.01 R	**0.04 J**	<0.01 R	**0.039 J**	<0.01 R	<0.01 R	<0.01 R	**0.019 J**	**0.048 J**	**0.088**
		P4-3-2.5	7/13/2022	2.5	**0.012**	<0.01	**0.048**	**0.079**	**0.066**	**0.049**	**0.033**	**0.049**	**0.064**	<0.01	**0.17**	**0.021**	**0.042**	<0.01	<0.01	<0.01	**0.21**	**0.16**	**0.094**
	P4-4	P4-4-1.0	7/13/2022	1.0	<0.2	<0.2	<0.2	**1.7**	**3.5**	**2.4**	**2.3**	**2.4**	**1.8**	**0.54**	**1.1**	<0.2	**3.1**	<0.2	<0.2	<0.2	**0.26**	**1.5**	**4.79**
		P4-4-2.5	7/13/2022	2.5	<0.01 R	<0.01 R	**0.013 J**	**0.2 J**	**0.39 J**	**0.26 J**	**0.25 J**	**0.27 J**	**0.19 J**	**0.079 J**	**0.14 J**	<0.01 R	**0.35 J**	<0.01 R	<0.01 R	<0.01 R	**0.046 J**	**0.18 J**	**0.55**
		P4-4-4.0	7/13/2022	4.0	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	NA
	2024 Soil Investigation																					
	P4-B9	P4-B9-2.0	1/10/2024	2.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
		P4-B9-3.0	1/10/2024	3.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P4-B10	P4-B10-2.0	1/10/2024	2.0	<0.250	<0.250	<0.250	0.140 J	**0.270**	**0.260**	**0.220 J**	**0.093 J**	**0.180 J**	<0.250	**0.280**	<0.250	**0.220 J**	<0.250	<0.250	<0.250	**0.110 J**	**0.340**	**0.58**
		P4-B10-3.0	1/10/2024	3.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA

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TABLE 3: POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Polycyclic Aromatic Hydrocarbons[1]																	
					Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs	*mg/kg*																	
Screening Criteria [2]																						
Residential Risk-Based Screening Levels[3]					3600	None	18000	1.1	0.11	1.1	None	11	110	0.028	2400	2400	1.1	0.18	190	2	None	1800	0.9 [4]
Commercial/Industrial Risk-Based Screening Levels[3]					29000	None	170000	16	1.7	17	None	170	1700	0.41	24000	21000	17	0.77	1500	7.6	None	18000	0.9 [4]
Total Threshold Limit Concentration[5]					None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
10x Soluble Threshold Limit Concentration[6]					None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
20x Toxicity Criteria[7]					None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None

Notes:

1. Soil samples collected by GSI Environmental Inc.and analyzed by Enthalpy Analytical for polycyclic aromatic hydrocarbons (PAHs) using United States Environmental Protection Agency (USEPA) Method 8270C with selective ion monitoring (SIM). Shaded concentrations exceed residential screening criteria.

2. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs.

3. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).

4. BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).

5. Total Threshold Limit Concentration, as presented in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

6. Ten times the Soluble Threshold Limit Concentration, as presented in CCR, Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

7. Twenty times the Toxicity Criteria, as presented in the Code of Federal Regulations (CFR), Title 40, Part 261, Subpart C, Section 261.24.

Abbreviations:

< = Analyte not detected above the reporting limit shown
BaPe = Benzo(a)pyrene equivalent value
bgs = Below ground surface
bold = Analyte detected above the reporting limit
DUP = Duplicate sample
J = The detected result is estimated.
mg/kg = Milligrams per kilogram
NA = Not applicable; PAHs were not detected; therefore, a BaPe was not calculated
R = The non-detected result is rejected because the holding time was exceeded.

References:

California Department of Toxic Substances Control (DTSC), 2009, Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process, July 1.
DTSC, 2015, Preliminary Endangerment Assessment Guidance Manual, October.
DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.
United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

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TABLE 4: PESTICIDES IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Organochlorine Pesticides																		
					Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC	Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxy-chlor	Toxa-phene
				feet bgs	mg/kg																		
1	***2022 Soil Investigation***																						
	P1-1	P1-1-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P1-1-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P1-1-4.0	7/13/2022	4.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P1-2	P1-2-2.5	7/13/2022	2.5	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
	P1-3	P1-3-1.0	7/13/2022	1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	2024 Soil Investigation																						
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
		P1-A7-2.5	1/11/2024	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.100
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	**0.057**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
		P1-A8-1.0(DUP)	1/11/2024	1.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.010	<0.100
		P1-A8-2.5	1/11/2024	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
2	***2022 Soil Investigation***																						
	P2-1	P2-1-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-2	P2-2-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	**0.012 C J**	**0.015**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	P2-3	P2-3-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	**0.025**	**0.024**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P2-3-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-4	P2-4-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
3	***2022 Soil Investigation***																						
	P3-1	P3-1-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-2	P3-2-1.0	7/13/2022	1.0	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.098	<0.0098	**0.011 C**	**0.04**	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.02	<0.2
		P3-2-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-3	P3-3-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	**0.01**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P3-3-2.5	7/13/2022	2.5	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.049	<0.49
	P3-4	P3-4-1.0	7/13/2022	1.0	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
4	***2022 Soil Investigation***																						
	P4-1	P4-1-1.0	7/13/2022	1.0	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	**0.037**	**0.14**	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
		P4-1-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P4-2	P4-2-1.0	7/13/2022	1.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P4-2-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	P4-3	P4-3-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P4-4	P4-4-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
Screening Criteria																							
Residential Risk-Based Screening Levels[2]					0.039	0.086	0.3	0.0038	0.057	1.7	2.3	2.0	1.9	0.034	470	470 [6]	380	19	19 [7]	19 [7]	0.13	0.07	320	0.45
Commercial/Industrial Risk-Based Screening Levels[2]					0.18	0.3	1.1	0.049	0.8	7.7	7.9	9.3	8.5	0.12	6000	6000 [6]	4100	200	200 [7]	200 [7]	0.63	0.33	3400	1.6
Total Threshold Limit Concentration [3]					1.4	None	None	None	4.0	2.5	1.0	1.0	1.0	8.0	None	None	None	0.2	None	None	4.7	4.7	100	5.0
10x Soluble Threshold Limit Concentration [4]					1.4	None	None	None	4.0	2.5	1.0	1.0	1.0	8.0	None	None	None	0.2	None	None	4.7	4.7	100	5.0
20x Toxicity Criteria[5]					None	None	None	None	None	0.6	None	None	None	None	None	None	None	0.4	None	None	0.16	0.16	200	10

Notes:

1. Soil samples collected by GSI Environmental Inc.and analyzed by Enthalpy Analytical for organochlorine pesticides using United States Environmental Protection Agency (USEPA) Method 8081A.
2. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).
3. Total Threshold Limit Concentration, as presented in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.
4. Ten times the Soluble Threshold Limit Concentration, as presented in CCR, Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.
5. Twenty times the Toxicity Criteria, as presented in the Code of Federal Regulations (CFR), Title 40, Part 261, Subpart C, Section 261.24.
6. The residential and commercial/industrial soil DTSC screening levels for endosulfan were used as surrogate SLs for endosulfan II.
7. The residential and commercial/industrial soil DTSC screening levels for endrin were used as surrogate SLs for endrin aldehyde and endrin ketone.

Abbreviations:

< = Analyte not detected above the reporting limit shown
bold = Analyte detected above the reporting limit
bgs = Below ground surface
C = Presence confirmed, but the Relative Percent Difference (RPD) between columns exceeds 40%
DUP = Duplicate sample
J = The detected result is an estimate
mg/kg = Milligrams per kilogram

References:

DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.
United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

GSI ENVIRONMENTAL

TABLE 5: TOTAL PETROLEUM HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Total Petroleum Hydrocarbons	
					TPH-d	TPH-mo
				feet bgs	mg/kg	
1	***2022 Soil Investigation***					
	P1-1	P1-1-1.0	7/13/2022	1.0	<10	<20
		P1-1-2.5	7/13/2022	2.5	<10	<20
		P1-1-4.0	7/13/2022	4.0	<10	<20
	P1-2	P1-2-2.5	7/13/2022	2.5	<10	<20
	P1-3	P1-3-1.0	7/13/2022	1.0	**14**	**22**
	2024 Soil Investigation					
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<10	<20
		P1-A7-2.5	1/11/2024	2.5	<10	<20
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<10	<20
		P1-A8-1.0(DUP)	1/11/2024	1.0	**11**	<20
		P1-A8-2.5	1/11/2024	2.5	<9.9	<20
2	***2022 Soil Investigation***					
	P2-1	P2-1-2.5	7/13/2022	2.5	<10	<20
	P2-2	P2-2-1.0	7/13/2022	1.0	**20**	**51**
	P2-3	P2-3-1.0	7/13/2022	1.0	**25**	**61**
		P2-3-2.5	7/13/2022	2.5	<10	<20
	P2-4	P2-4-1.0	7/13/2022	1.0	**47**	**89**
3	***2022 Soil Investigation***					
	P3-1	P3-1-2.5	7/13/2022	2.5	<10	<20
	P3-2	P3-2-1.0	7/13/2022	1.0	<50	<100
		P3-2-2.5	7/13/2022	2.5	<10	<20
	P3-3	P3-3-1.0	7/13/2022	1.0	**120**	**87**
		P3-3-2.5	7/13/2022	2.5	**160**	**490**
	P3-4	P3-4-1.0	7/13/2022	1.0	**65**	**210**
4	***2022 Soil Investigation***					
	P4-1	P4-1-1.0	7/13/2022	1.0	<50	<100
		P4-1-2.5	7/13/2022	2.5	<10	<20
	P4-2	P4-2-1.0	7/13/2022	1.0	<10	<20
		P4-2-2.5	7/13/2022	2.5	<10	<20
	P4-3	P4-3-2.5	7/13/2022	2.5	<10	<20
	P4-4	P4-4-1.0	7/13/2022	1.0	**45**	**76**
Screening Criteria						
				Residential Risk-Based Screening Levels [2]	260	12,000
				Commercial/Industrial Risk-Based Screening Levels [2]	1,200	180,000
				Total Threshold Limit Concentration [3]	None	None
				10x Soluble Threshold Limit Concentration [4]	None	None
				20x Toxicity Criteria [5]	None	None

Notes:

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical for TPH using United States Environmental Protection Agency (USEPA) Method 8015M.

2. Direct exposure environmental screening levels for human health published by the San Francisco Bay Regional Water Quality Control Board (Water Board, 2019).

3. Total Threshold Limit Concentration, as presented in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

4. Ten times the Soluble Threshold Limit Concentration, as presented in CCR, Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

5. Twenty times the Toxicity Criteria, as presented in the Code of Federal Regulations (CFR), Title 40, Part 261, Subpart C, Section 261.24.

Abbreviations:

< = Analyte not detected above the reporting limit shown

bold = Analyte detected above the reporting limit

bgs = Below ground surface

DUP = Duplicate sample

mg/kg = Milligrams per kilogram

TPH = Total petroleum hydrocarbons

TPHd = TPH quantified as diesel (diesel range orgnics [DRO] C10-C28)

TPHmo = TPH quantified as motor oil (oil range organics [ORO] C28-C44)

References:

San Francisco Bay Regional Water Quality Control Board (Water Board), 2019, Environmental Screening Levels, Summary Tables, January (Rev. 2).

TABLE 6: SUMMARY OF ARARS AND TBCS

Santa Fe Trackbed to Park

Berkeley, California

Requirement	Description	Comment
Potentially Applicable / Relevant and Appropriate		
Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments (40 CFR 260 to 299, 42 USC 7401-7642)	Federal act that classifies and regulates hazardous waste and facilities that treat, store and dispose of hazardous waste.	Applicable for determining whether chemically impacted media is a hazardous waste.
40 CFR Part 261(Identification and Listing of Hazardous Wastes)	Establishes criteria for identifying hazardous wastes subject to Subtitle C treatment, storage, and disposal requirements.	Applicable for determining whether excavated soils are to be classified as a hazardous waste.
40 CFR Part 262	Standards for generators of hazardous waste when the removal action constitutes treatment, storage, or disposal of hazardous waste.	Applicable if the removal action involves generation and off-site transportation of hazardous waste.
40 CFR 263	Standards applicable to transporters of hazardous waste.	Applicable if the removal action involves generation and off-site transportation of hazardous waste.
40 CFR 263	Standards applicable to transporters of hazardous waste.	Applicable if the removal action involves generation and off-site transportation of hazardous waste.
Clean Water Act (CWA), §402; 40 CFR Part 122	Section 402(p) of the CWA establishes a framework for regulating industrial storm water discharges under the NPDES program. Discharges of stormwater from soil disturbance must be regulated and covered under a National Pollutant Discharge Elimination System (NPDES) permit.	Applicable for construction activities, including demolition, clearing, grading, excavation, soil stockpiling, material storing, onsite staging, offsite staging, and other land disturbance activities.
NPDES Permit	The State Water Resources Control Board (SWRCB), as part of the National Pollutant Discharge Elimination System (NPDES), has adopted a statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activity (General Permit) to address discharges of storm water runoff from construction projects that encompass one acre or more in total acreage of soil disturbances.	This would be applicable for construction activities, including demolition, clearing, grading, excavation, soil stockpiling, material storing, onsite staging, offsite staging, and other land disturbance activities.
Clean Air Act (42 USC 7401-7642, 40 CFR 50 – 69)	Identifies categories of industrial sources and treatment standards. Establishes primary and secondary ambient air standards. States develop implementation plans for attainment of the standards.	May be applicable or relevant and appropriate depending upon the response action being considered. Impacts to air quality, if any, under local air district jurisdiction may result from the implementation of some of the removal actions.
Occupational Safety and Health Act (29 CFR 1910.120 et seq.)	Identifies permissible exposure limits (PELs) for inhalation or dermal exposure of workers to chemicals. When PELs are exceeded, OSHA requires the use of personal protective equipment or other methods to block exposure.	Applicable for determining worker health and safety requirements during implementation of the removal action.
Endangered Species Act of 1973	Established to conserve endangered or threatened species.	Endangered and/or threatened species may be present at the Site.
Hazardous Waste Control Act (HSC, Chapter 6.5, section 25100 et seq., 22 CCR 66260.1 et seq.)	Establishes criteria for determining waste classification for the purposes of transportation and land disposal of wastes in California. Regulates treatment, storage, transportation and disposal of substances identified as hazardous.	Applicable for determining whether chemically-impacted media is a hazardouswaste.
Hazardous Waste Generator Requirements (22 CCR 66262.1 et seq.)	Establishes standards applicable to generators of hazardous waste.	Applicable for determining whether excavated soils are to be classified as ahazardous waste.
Land Disposal Restrictions (22 CCR 66268.7 et seq.)	Establishes standards for treatment and land disposal of hazardous waste.	Applicable for determining appropriate disposal facilities for soil to be removed from the Site.
Toxicity Criteria Rule (22 CCR §69021)	Establishes toxicity criteria for use in human health risk assessments, risk-based screening levels, and risk-based remediation goals for hazardous waste and hazardous substance cleanup sites in California.	Applicable for determining appropriate cancer and non-cancer toxicity criteria for each COPC.
Stockpiling Requirements for Contaminated Soil (HSC section 25123.3(a)(2)	Establishes standards for stockpiling of non-RCRA contaminated soil	Applicable for stockpiling chemicallyimpacted soil.
Hazardous Waste Haulers Act (22 CCR Chapter 30)	Governs transportation of hazardous materials in California.	Applicable for off-Site disposal of hazardous waste.
Safe Drinking Water and Toxic Enforcement Act (Proposition 65) (22 CCR section 12000 et seq.)	Requires public warnings of potential exposure to suspected carcinogens and reproductive toxins.	May be applicable or relevant and appropriate for notification of construction workers who may be engaged in a removal action at the Site or for future Site users should chemically-impacted soil remain in place.
California Occupational Health and Safety (8 CCR 5192)	Requires workers involved in hazardous substance operations associated with cleanup of sites perform the cleanup operations in accordance with Cal OSHA health and safety requirements.	Applicable requirement for all workers who can come into contact with contaminated media at the Site
Local noise ordinance	Limits the amount of noise generated during certain times of day.	Applicable for implementation of removal action for which heavy equipment or other noise-generating apparatus are in use.
To be Considered		

TABLE 6: SUMMARY OF ARARS AND TBCS

Santa Fe Trackbed to Park

Berkeley, California

Requirement	Description	Comment
Potentially Applicable / Relevant and Appropriate		
U.S. Environmental Protection Agency, Region 9 Regional Screening Levels (RSLs) (“Regional Screening Levels for Chemical Contaminants at Superfund Sites”)	Provides human health screening levels using toxicity values and standard default parameters to initially assess potential risk for residential and commercial/industrial exposures to chemically impacted soil, air, and tapwater (drinking water).	Applicable for initial assessment of chemical impacts at a site. Exceedance of an RSL does not indicate that an adverse human health risk exists, but indicates that initial evaluation of the potential risk is warranted.
DTSC Note 3	DTSC recommended methodology for use of U.S. EPA Regional Screening Levels (RSLs) in the Human Health Risk Assessment process at hazardous waste sites and permitted facilities.	Applicable for initial assessment of chemical impacts at a site. Based on an evaluation of RSLs relative to updated or more conservative toxicity values, screening levels established under this guidance may be less than, and would supersede RSLs.
DTSC Information Advisory: “Clean ImportedFill Material” (2001)	This advisory provides guidance for evaluating fill material for use at school sites, including initial source identification, sampling frequency, chemical testing, and data evaluation.	This advisory may be applicable in evaluating potential fill sources for the Site.

TABLE 7: COST COMPARISON OF REMOVAL ACTION ALTERNATIVES

Santa Fe Trackbed to Park

Berkeley, California

SUMMARY OF ESTIMATED COSTS[1,2]				
Costs	**Removal Action Alternative**			
	Alternative 1	**Alternative 2**	**Alternative 3**	**Alternative 4**
	No Further Action	**Excavation and Off-Site Disposal**	**Excavation and On-Site Containment**	**Capping in Place**
Direct Capital Costs				
Mobilization and Demobilization	$0	$33,900	$33,900	$33,900
Excavation	$0	$92,800	$69,600	$0
Loading, Disposal, & Transport Costs	$0	$454,700	$341,000	$0
Asphalt Mobilization and Installation	$0	$0	$0	$230,000
Backfill & Compaction Costs	$0	$301,600	$226,200	$0
Shoring	$0	$19,100	$19,100	$0
Filed Oversight and Reporting	$0	$47,000	$47,000	$42,000
Indirect Capital Costs				
Engineering and Design Expenses	$0	$25,000	$25,000	$10,000
License and Permit Costs	$0	$10,000	$10,000	$10,000
Construction Management	$0	$45,500	$36,700	$23,500
Bid and Scope Contigencies	$0	$196,800	$182,800	$102,200
Post Removal Action Site Control Costs				
Operation and Maintenance Plan	$0	$0	$10,000	$10,000
Risk Management Plan	$0	$0	$10,000	$10,000
Land Use Covenant	$0	$0	$20,000	$20,000
Annual Inspection and Reporting (30 years)	$0	$0	$75,000	$90,000
Annual Maintenance (30 years)	$0	$0	$150,000	$240,000
Total	**$0**	**$1,226,000**	**$1,256,000**	**$822,000**

Notes and Assumptions:

1. Costs shown are preliminary and are not based on actual contractor quotes.

2. No costs are included for general grading or hardscaping required for Site redevelopment. These items are considered design elements and are included in the redevelopment project costs.

TABLE 8: ACTION LEVELS FOR DUST IN AMBIENT AIR AT THE SITE PERIMETER

Santa Fe Trackbed to Park

Berkeley, California

Chemical [1]	Maximum Detected Concentration (mg/kg)	Resident Air Screening Level[2] (mg/m^3)	Reference	Exposure Adjustment Factor[3] (EAF)	Chemical-specific, Dust Action Level (mg/m^3)
Metals					
Antimony	3.6	0.00031	Noncancer RSL	6	517
Arsenic	310	0.000016	Noncancer RSL	6	0.31
Barium	300	0.00052	Noncancer RSL	6	10
Beryllium	0.73	0.000007	Noncancer RSL	6	60
Cadmium	1.9	0.000010	Noncancer DTSC-SL	6	32
Chromium (Total)	75	0.000063	Noncancer RSL[4]	6	5.0
Cobalt	23	0.000006	Noncancer RSL	6	1.6
Copper	81	NP	--	--	--
Lead	490	0.00015	Noncancer RSL	6	1.8
Mercury	11	0.00003	Noncancer DTSC-SL	6	17
Molybdenum	1.5	0.0021	Noncancer RSL	6	8,400
Nickel	120	0.000015	Noncancer DTSC-SL	6	0.8
Selenium	1.6	0.021	Noncancer RSL	6	78,750
Silver	0.56	NP	--	--	--
Vanadium	74	0.00010	Noncancer RSL	6	8.1
Zinc	440	NP	--	--	--
Polynuclear Aromatic Hydrocarbons [5]					
Benzo(a)anthracene	1.7	NP	--	--	--
Benzo(a)pyrene	3.5	0.0000021	Noncancer DTSC-SL	6	3.6
Benzo(b)fluoranthene	2.4	NP	--	--	--
Dibenz(a,h)anthracene	0.54	NP	--	--	--
Indeno(1,2,3-cd)pyrene	3.1	NP	--	--	--
California Air Resources Board Ambient Air Quality Standard [6]***:***					**0.05**

Equation:

$$Action\ Level\ \left(\frac{mg}{m^3}\right) = \frac{Chemical\ Specific\ Action\ Level\ \left(\frac{mg}{m^3}\right) \times 10^6 \left(\frac{mg}{kg}\right) \times Exposure\ Adjustment\ Factor}{Maximum\ Soil\ Concentration\ \left(\frac{mg}{kg}\right)}$$

Notes:

1. All chemicals detected in at least one soil sample above the laboratory analytical detection limit were evaluated for perimeter air monitoring.

2. If available, the DTSC-SLs (DTSC, 2025) for residential air for non-cancer health effects were selected for the chemical-specific action level. If a DTSC-SL was not available, the USEPA Regional Screening Levels (RSLs) for residential air for non-cancer health effects (U.S. EPA, 2024) were selected. Resident air cancer endpoint DTSC-SLs and USEPA RSLs are only applicable to long-term (i.e., chronic) potential exposures and are not appropriate for short-term (i.e., acute and sub-acute) potential exposure.

3. The noncancer RSLs are developed based on an exposure time of 12 months. Since subsurface work is conservatively anticipated to require approximately 2 months to complete, the noncancer RSLs were adjusted by a factor of 6.

4. The noncancer RSL for chromium(III) (soluble compounds) was used as a surrogate for chromium (total).

5. Individual PAHs that exceeded resident soil SLs in Table 3 are included. However, with the exception of benzo(a)pyrene, there are currently no published non-cancer resident air DTSC-SLs or USEPA RSLs for these PAHs.

6.California Air Resources Control Board (CARB), 2023. Particulate Matter and Health Fact Sheet, March.

Abbreviations:

-- = Not applicable
mg/m^3 = milligrams per cubic meter
mg/kg = milligrams per kilogram
ND = not detected
NP = Not published
RSL = Regional Screening Level

TABLE 9: SUMMARY OF SCREENING LEVELS FOR DUST IN WORK ZONE AIR

Santa Fe Trackbed to Park

Berkeley, California

Chemical [1]	Maximum Detected Concentration (mg/kg)	Permissible Exposure Limit (mg/m^3)	Dust Action Level (mg/m^3)
Metals [2]			
Antimony	3.6	0.5	138,900
Arsenic	310	0.01	32
Barium	300	0.5	1,670
Beryllium	0.73	0.0002	270
Cadmium	1.9	0.005	2,630
Chromium (Total)	75	0.005	67
Cobalt	23	0.02	870
Copper	81	1	12,350
Lead	490	0.05	102
Mercury	11	0.025	2,270
Molybdenum	1.5	0.5	333,330
Nickel	120	0.5	4,170
Selenium	1.6	0.2	125,000
Silver	0.56	0.01	17,860
Vanadium	74	0.05	680
Zinc	440	5	11,360
PAHs [3]			
Polynuclear Aromatic Hydrocarbons (PAHs)	4.79	0.2	41,750
Particulates [4]			
Respirable Fraction of Particulates	--	5	**5**

Equation:

$$Action\ Level\ \left(\frac{mg}{m^3}\right) = \frac{Permissible\ Exposure\ Limit\ \left(\frac{mg}{m^3}\right) \times 10^6 \left(\frac{mg}{kg}\right)}{Maximum\ Soil\ Concentration\ \left(\frac{mg}{kg}\right)}$$

Notes:

1. All chemicals detected in at least one soil sample above the laboratory analytical detection limit were evaluated for work zone air monitoring.

2. California Division of Occupational Safety and Health (Cal/OSHA) Table AC-1, Permissible Exposure Limits (PELs), in California Code of Regulations (CCR) Title 8 Section 5155, October 2, 2019. Viewable at: http://www.dir.ca.gov/title8/5155table_ac1.html.

3. Permissible Exposure Limits for PAH as coal tar pitch volatiles published by California Division of Occupational Safety and Health, https://www.osha.gov/dsg/annotated-pels/tablez-1.html

4. Permissible Exposure Limits for Particulates not Otherwise Regulated published by California Division of Occupational Safety and Health, https://www.osha.gov/chemicaldata/801

Abbreviations:

-- = not applicable

mg/kg = milligrams per kilogram

mg/m^3 = milligrams per cubic meter

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

FIGURES

GSI ENVIRONMENTAL

GSI job No.	6272	Drawn By:	AV
Issued:	5-Oct-2023	Chk'd By:	TRK
		Appv'd By:	JPD
Map ID:	SFROW_SiteLocMap		FIGURE 1

SITE LOCATION MAP

Santa Fe Trackbed to Park
Berkeley, California

GSI ENVIRONMENTAL

GSI job No.	6272	Drawn By:	AV
Issued:	5-Oct-2023	Chk'd By:	TRK
		Appv'd By:	JPD
Map ID:	SFROW_SiteOverview		FIGURE 2

SITE OVERVIEW

Santa Fe Trackbed to Park
Berkeley, California

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs). SLs and analytical results for each COPC are presented on Figures 5b-5d.

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

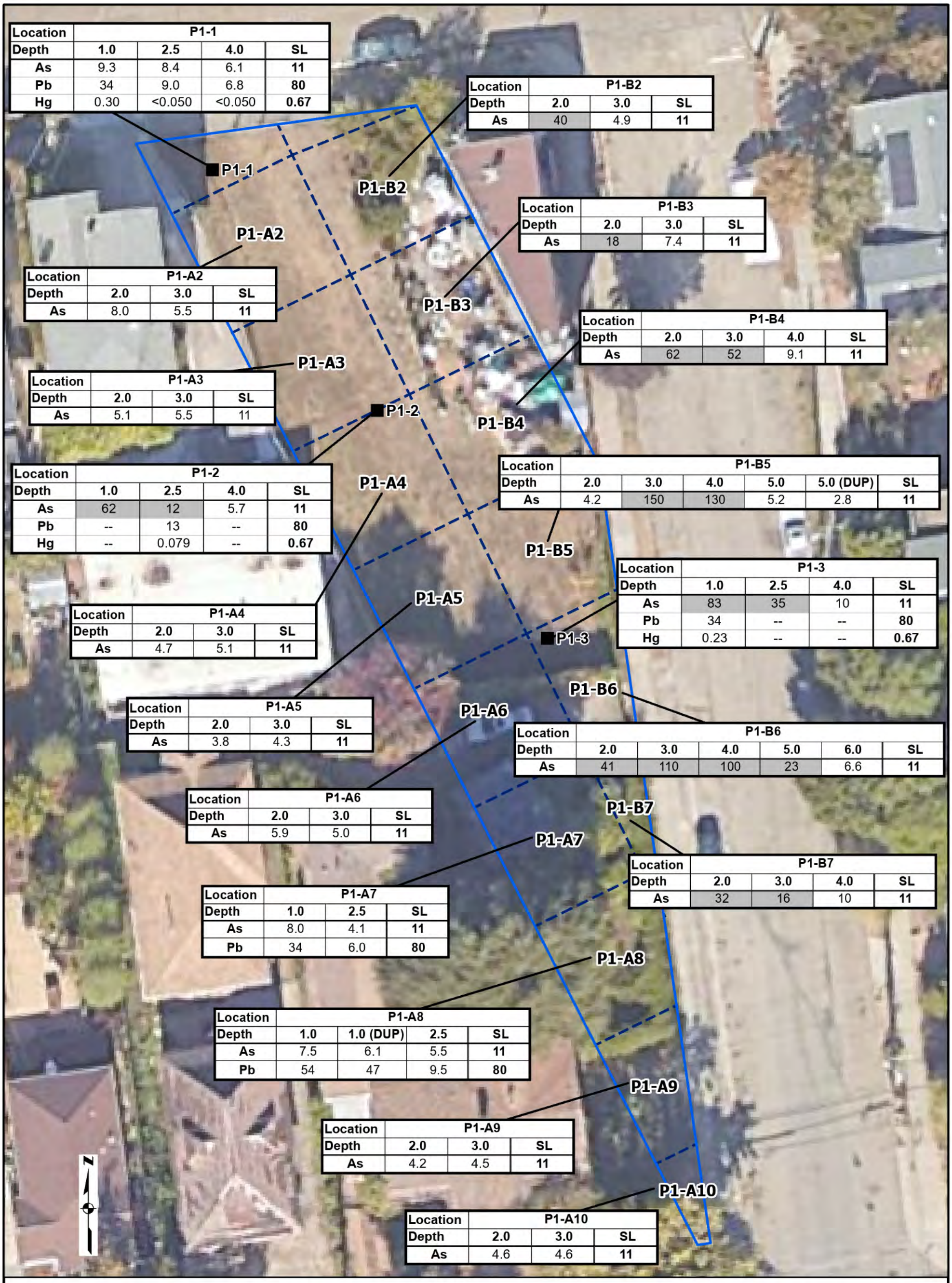
GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P1_AllResults		
Issued: 16-Oct-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS PARCEL 1

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 3a



Location	P1-1			
Depth	1.0	2.5	4.0	SL
As	9.3	8.4	6.1	11
Pb	34	9.0	6.8	80
Hg	0.30	<0.050	<0.050	0.67

Location	P1-B2		
Depth	2.0	3.0	SL
As	40	4.9	11

Location	P1-B3		
Depth	2.0	3.0	SL
As	18	7.4	11

Location	P1-A2		
Depth	2.0	3.0	SL
As	8.0	5.5	11

Location	P1-B4			
Depth	2.0	3.0	4.0	SL
As	62	52	9.1	11

Location	P1-A3		
Depth	2.0	3.0	SL
As	5.1	5.5	11

Location	P1-2			
Depth	1.0	2.5	4.0	SL
As	62	12	5.7	11
Pb	--	13	--	80
Hg	--	0.079	--	0.67

Location	P1-B5					
Depth	2.0	3.0	4.0	5.0	5.0 (DUP)	SL
As	4.2	150	130	5.2	2.8	11

Location	P1-A4		
Depth	2.0	3.0	SL
As	4.7	5.1	11

Location	P1-3			
Depth	1.0	2.5	4.0	SL
As	83	35	10	11
Pb	34	--	--	80
Hg	0.23	--	--	0.67

Location	P1-A5		
Depth	2.0	3.0	SL
As	3.8	4.3	11

Location	P1-B6					
Depth	2.0	3.0	4.0	5.0	6.0	SL
As	41	110	100	23	6.6	11

Location	P1-A6		
Depth	2.0	3.0	SL
As	5.9	5.0	11

Location	P1-B7			
Depth	2.0	3.0	4.0	SL
As	32	16	10	11

Location	P1-A7		
Depth	1.0	2.5	SL
As	8.0	4.1	11
Pb	34	6.0	80

Location	P1-A8			
Depth	1.0	1.0 (DUP)	2.5	SL
As	7.5	6.1	5.5	11
Pb	54	47	9.5	80

Location	P1-A9		
Depth	2.0	3.0	SL
As	4.2	4.5	11

Location	P1-A10		
Depth	2.0	3.0	SL
As	4.6	4.6	11

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, As = Arsenic, Pb = Lead, Hg = Mercury, -- = not analyzed.
5) Data is shown for arsenic, lead, and mercury at locations with one or more detections. See Table 2 for complete analytical results for metals.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

As: Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
Pb: DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note 3, April.
Hg: DTSC, 2025, HERO, HHRA Note 3, April.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P1_Metals	
Issued:	Drawn By:	
15-May-2025	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- SELECT METALS
PARCEL 1

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 3b

Location	P1-3	
Depth	1.0	SL
Acenaphthene	0.015	3600
Anthracene	0.029	18000
Benzo(a) anthracene	0.14	1.1
Benzo(a) pyrene	0.19	0.11
Benzo(b) fluoranthene	0.15	1.1
Benzo(g,h,i) perylene	0.11	None
Benzo(k) fluoranthene	0.15	11
Chrysene	0.17	110
Dibenz(a,h) anthracene	0.027	0.028
Fluoranthene	0.15	2400
Indeno (1,2,3-cd) pyrene	0.15	1.1
1-Methylnaphthalene	0.022	5.6
2-Methylnaphthalene	0.032	190
Naphthalene	0.05	2
Phenanthrene	0.071	None
Pyrene	0.19	1800
BaPe	0.26	0.9

Location	P1-A8			
Depth	1.0	1.0 (DUP)	2.5	SL
Fluoranthene	<0.010	0.013	<0.010	2400
Pyrene	<0.010	0.013	<0.010	1800
BaPe	NA	NA	NA	0.9

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, PAHs = Polyaromatic Hydrocarbons, BaPe = benzo(a)pyrene equivalent value, NA = not applicable, ND = not detected.
5) See Table 3 for analytical results for complete analytical results for PAHS and data flag definitions.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

BaPe: BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).
All other PAHs: DTSC screening levels for residential soil (DTSC-SLs) as published in DTSC, HERO, HHRA Note 3 (April 2025) or US Environmental Protection Agency Regional Screening Levels (November 2024), if no DTSC-SL is published.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P1_PAHs	
Issued:	Drawn By:	
15-May-2025	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- PAHs
PARCEL 1

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 3c

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs). SLs and analytical results for each COPC are presented on Figures 5b-5d.

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)
- Planned City of Berkeley Property Gain
- Planned City of Berkeley Property Reduction

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

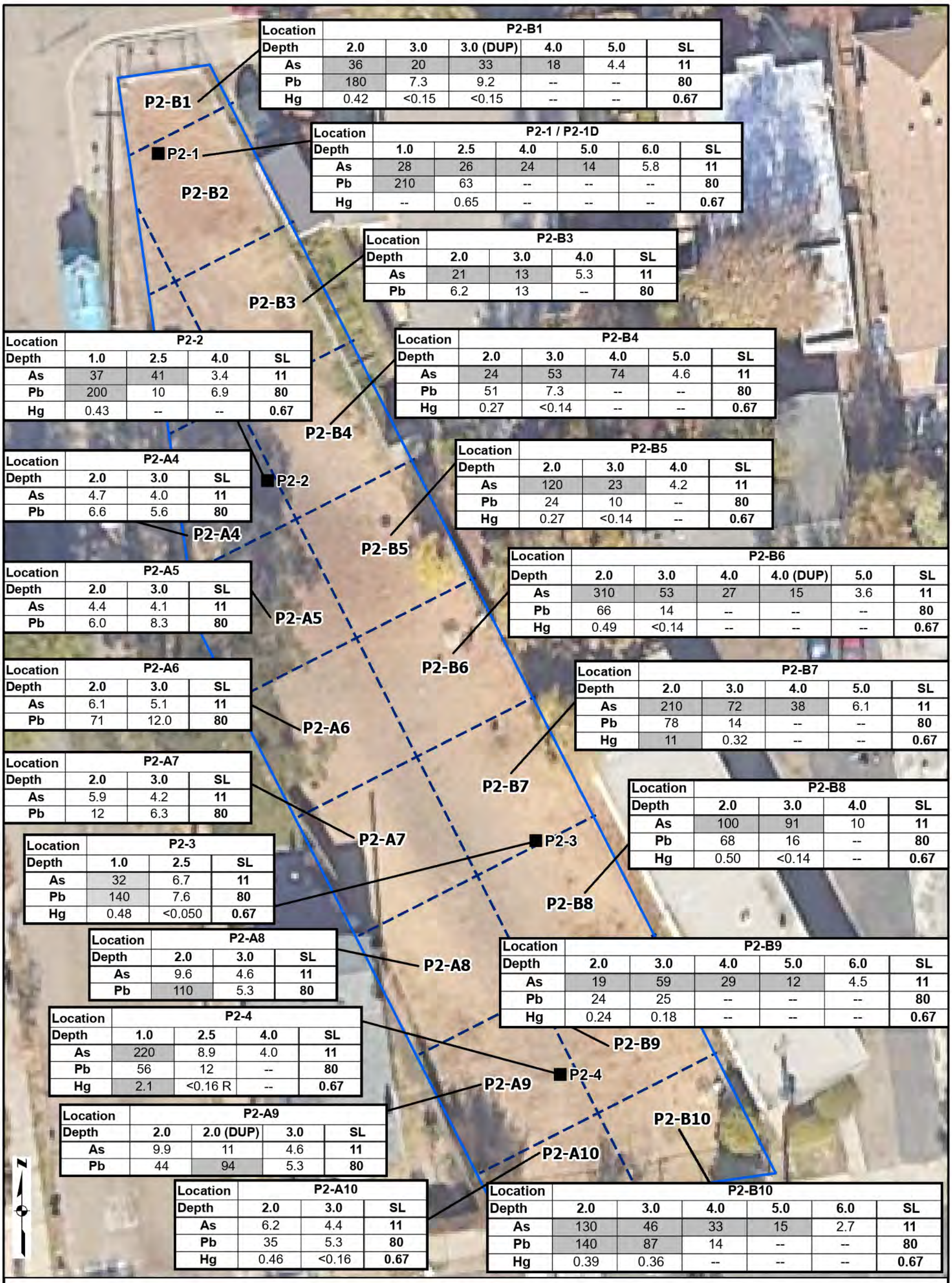
GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P2_ResultsLotLines		
Issued: 22-Nov-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS
PARCEL 2

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 4a



Location	P2-B1					
Depth	2.0	3.0	3.0 (DUP)	4.0	5.0	SL
As	36	20	33	18	4.4	11
Pb	180	7.3	9.2	--	--	80
Hg	0.42	<0.15	<0.15	--	--	0.67

Location	P2-1 / P2-1D					
Depth	1.0	2.5	4.0	5.0	6.0	SL
As	28	26	24	14	5.8	11
Pb	210	63	--	--	--	80
Hg	--	0.65	--	--	--	0.67

Location	P2-B3			
Depth	2.0	3.0	4.0	SL
As	21	13	5.3	11
Pb	6.2	13	--	80

Location	P2-2			
Depth	1.0	2.5	4.0	SL
As	37	41	3.4	11
Pb	200	10	6.9	80
Hg	0.43	--	--	0.67

Location	P2-B4				
Depth	2.0	3.0	4.0	5.0	SL
As	24	53	74	4.6	11
Pb	51	7.3	--	--	80
Hg	0.27	<0.14	--	--	0.67

Location	P2-A4		
Depth	2.0	3.0	SL
As	4.7	4.0	11
Pb	6.6	5.6	80

Location	P2-B5			
Depth	2.0	3.0	4.0	SL
As	120	23	4.2	11
Pb	24	10	--	80
Hg	0.27	<0.14	--	0.67

Location	P2-A5		
Depth	2.0	3.0	SL
As	4.4	4.1	11
Pb	6.0	8.3	80

Location	P2-B6					
Depth	2.0	3.0	4.0	4.0 (DUP)	5.0	SL
As	310	53	27	15	3.6	11
Pb	66	14	--	--	--	80
Hg	0.49	<0.14	--	--	--	0.67

Location	P2-A6		
Depth	2.0	3.0	SL
As	6.1	5.1	11
Pb	71	12.0	80

Location	P2-B7				
Depth	2.0	3.0	4.0	5.0	SL
As	210	72	38	6.1	11
Pb	78	14	--	--	80
Hg	11	0.32	--	--	0.67

Location	P2-A7		
Depth	2.0	3.0	SL
As	5.9	4.2	11
Pb	12	6.3	80

Location	P2-B8			
Depth	2.0	3.0	4.0	SL
As	100	91	10	11
Pb	68	16	--	80
Hg	0.50	<0.14	--	0.67

Location	P2-3		
Depth	1.0	2.5	SL
As	32	6.7	11
Pb	140	7.6	80
Hg	0.48	<0.050	0.67

Location	P2-A8		
Depth	2.0	3.0	SL
As	9.6	4.6	11
Pb	110	5.3	80

Location	P2-B9					
Depth	2.0	3.0	4.0	5.0	6.0	SL
As	19	59	29	12	4.5	11
Pb	24	25	--	--	--	80
Hg	0.24	0.18	--	--	--	0.67

Location	P2-4			
Depth	1.0	2.5	4.0	SL
As	220	8.9	4.0	11
Pb	56	12	--	80
Hg	2.1	<0.16 R	--	0.67

Location	P2-A9			
Depth	2.0	2.0 (DUP)	3.0	SL
As	9.9	11	4.6	11
Pb	44	94	5.3	80

Location	P2-A10		
Depth	2.0	3.0	SL
As	6.2	4.4	11
Pb	35	5.3	80
Hg	0.46	<0.16	0.67

Location	P2-B10					
Depth	2.0	3.0	4.0	5.0	6.0	SL
As	130	46	33	15	2.7	11
Pb	140	87	14	--	--	80
Hg	0.39	0.36	--	--	--	0.67

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, As = Arsenic, Pb = Lead, Hg = Mercury, -- = not analyzed.
5) Data is shown for arsenic, lead, and mercury at locations with one or more detections. See Table 2 for complete analytical results for metals.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

As: Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
Pb: DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note 3, April.
Hg: DTSC, 2025, HERO, HHRA Note 3, April.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P2_Metals	
Issued:	Drawn By:	
15-May-2025	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- SELECT METALS
PARCEL 2

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 4b

Location	P2-1	
Depth	2.5	SL
Benzo(a) anthracene	0.018	1.1
Benzo(a) pyrene	0.028	0.11
Benzo(b) fluoranthene	0.024	1.1
Benzo(g,h,i) perylene	0.025	None
Benzo(k) fluoranthene	0.020	11
Chrysene	0.022	110
Fluoranthene	0.036	2400
Indeno (1,2,3-cd) pyrene	0.028	1.1
Phenanthrene	0.024	None
Pyrene	0.041	1800
BaPe	0.045	0.9

Location	P2-2	
Depth	1.0	SL
Benzo(a) anthracene	0.130	1.1
Benzo(a) pyrene	0.240	0.11
Benzo(b) fluoranthene	0.180	1.1
Benzo(g,h,i) perylene	0.210	None
Benzo(k) fluoranthene	0.180	11
Chrysene	0.140	110
Dibenz(a,h) anthracene	0.036 J	0.028
Fluoranthene	0.120	2400
Indeno (1,2,3-cd) pyrene	0.250	1.1
Pyrene	0.160	1800
BaPe	0.338	0.9

Location	P2-3		
Depth	1.0	2.5	SL
Benzo(a) anthracene	0.047	<0.010	1.1
Benzo(a) pyrene	0.064	<0.010	0.11
Benzo(b) fluoranthene	0.063	<0.010	1.1
Benzo(g,h,i) perylene	0.059	<0.010	None
Benzo(k) fluoranthene	0.044	<0.010	11
Chrysene	0.059	<0.010	110
Fluoranthene	0.061	<0.010	2400
Indeno (1,2,3-cd) pyrene	0.058	<0.010	1.1
Phenanthrene	0.051	<0.010	None
Pyrene	0.068	<0.010	1800
BaPe	0.121	NA	0.9

Location	P2-4	
Depth	1.0	SL
All PAHs	ND	Various

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, PAHs = Polyaromatic Hydrocarbons, BaPe = benzo(a)pyrene equivalent value, NA = not applicable, ND = not detected.
5) See Table 3 for analytical results for complete analytical results for PAHS and data flag definitions.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

BaPe: BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).
All other PAHs: DTSC screening levels for residential soil (DTSC-SLs) as published in DTSC, HERO, HHRA Note 3 (April 2025) or US Environmental Protection Agency Regional Screening Levels (November 2024), if no DTSC-SL is published.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P2_PAHs	
Issued:	Drawn By:	
15-May-2025	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- PAHs
PARCEL 2

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 4c

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs). SLs and analytical results for each COPC are presented on Figures 5b-5d.

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

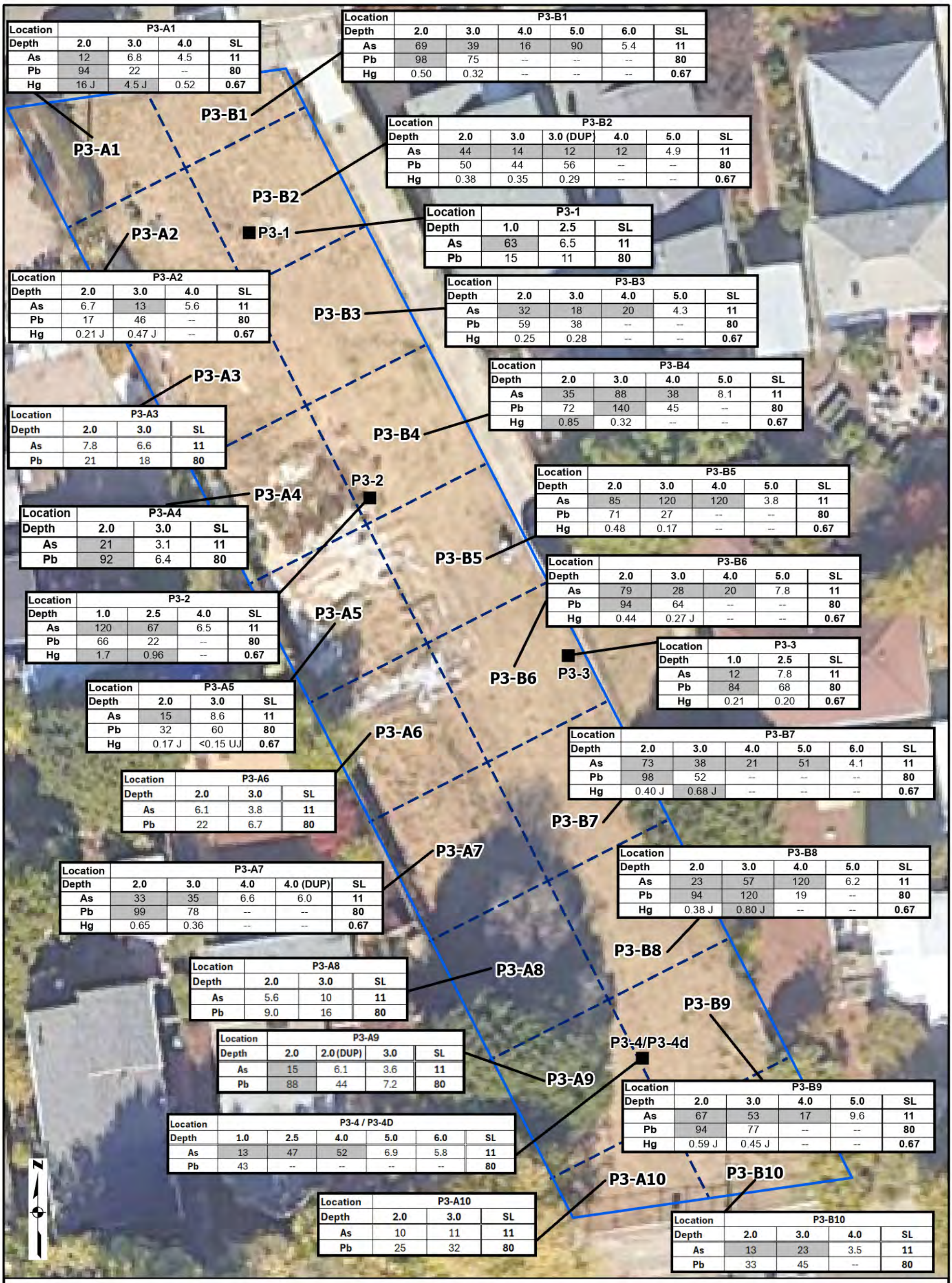
GSI ENVIRONMENTAL

GSI Job No. 6272		Map ID: P3_AllResults	
Issued: 16-Oct-2024		Drawn By: AJC	
		Chk'd By: TRG	Aprv'd By: JPD

PROPOSED EXCAVATION DEPTHS
PARCEL 3

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 5a



Location	P3-A1			
Depth	2.0	3.0	4.0	SL
As	12	6.8	4.5	11
Pb	94	22	--	80
Hg	16 J	4.5 J	0.52	0.67

Location	P3-B1					
Depth	2.0	3.0	4.0	5.0	6.0	SL
As	69	39	16	90	5.4	11
Pb	98	75	--	--	--	80
Hg	0.50	0.32	--	--	--	0.67

Location	P3-B2					
Depth	2.0	3.0	3.0 (DUP)	4.0	5.0	SL
As	44	14	12	12	4.9	11
Pb	50	44	56	--	--	80
Hg	0.38	0.35	0.29	--	--	0.67

Location	P3-1		
Depth	1.0	2.5	SL
As	63	6.5	11
Pb	15	11	80

Location	P3-A2			
Depth	2.0	3.0	4.0	SL
As	6.7	13	5.6	11
Pb	17	46	--	80
Hg	0.21 J	0.47 J	--	0.67

Location	P3-B3				
Depth	2.0	3.0	4.0	5.0	SL
As	32	18	20	4.3	11
Pb	59	38	--	--	80
Hg	0.25	0.28	--	--	0.67

Location	P3-A3		
Depth	2.0	3.0	SL
As	7.8	6.6	11
Pb	21	18	80

Location	P3-B4				
Depth	2.0	3.0	4.0	5.0	SL
As	35	88	38	8.1	11
Pb	72	140	45	--	80
Hg	0.85	0.32	--	--	0.67

Location	P3-A4		
Depth	2.0	3.0	SL
As	21	3.1	11
Pb	92	6.4	80

Location	P3-B5				
Depth	2.0	3.0	4.0	5.0	SL
As	85	120	120	3.8	11
Pb	71	27	--	--	80
Hg	0.48	0.17	--	--	0.67

Location	P3-2			
Depth	1.0	2.5	4.0	SL
As	120	67	6.5	11
Pb	66	22	--	80
Hg	1.7	0.96	--	0.67

Location	P3-B6				
Depth	2.0	3.0	4.0	5.0	SL
As	79	28	20	7.8	11
Pb	94	64	--	--	80
Hg	0.44	0.27 J	--	--	0.67

Location	P3-A5		
Depth	2.0	3.0	SL
As	15	8.6	11
Pb	32	60	80
Hg	0.17 J	<0.15 UJ	0.67

Location	P3-3		
Depth	1.0	2.5	SL
As	12	7.8	11
Pb	84	68	80
Hg	0.21	0.20	0.67

Location	P3-A6		
Depth	2.0	3.0	SL
As	6.1	3.8	11
Pb	22	6.7	80

Location	P3-B7					
Depth	2.0	3.0	4.0	5.0	6.0	SL
As	73	38	21	51	4.1	11
Pb	98	52	--	--	--	80
Hg	0.40 J	0.68 J	--	--	--	0.67

Location	P3-A7				
Depth	2.0	3.0	4.0	4.0 (DUP)	SL
As	33	35	6.6	6.0	11
Pb	99	78	--	--	80
Hg	0.65	0.36	--	--	0.67

Location	P3-B8				
Depth	2.0	3.0	4.0	5.0	SL
As	23	57	120	6.2	11
Pb	94	120	19	--	80
Hg	0.38 J	0.80 J	--	--	0.67

Location	P3-A8		
Depth	2.0	3.0	SL
As	5.6	10	11
Pb	9.0	16	80

Location	P3-A9			
Depth	2.0	2.0 (DUP)	3.0	SL
As	15	6.1	3.6	11
Pb	88	44	7.2	80

Location	P3-B9				
Depth	2.0	3.0	4.0	5.0	SL
As	67	53	17	9.6	11
Pb	94	77	--	--	80
Hg	0.59 J	0.45 J	--	--	0.67

Location	P3-4 / P3-4D					
Depth	1.0	2.5	4.0	5.0	6.0	SL
As	13	47	52	6.9	5.8	11
Pb	43	--	--	--	--	80

Location	P3-A10		
Depth	2.0	3.0	SL
As	10	11	11
Pb	25	32	80

Location	P3-B10			
Depth	2.0	3.0	4.0	SL
As	13	23	3.5	11
Pb	33	45	--	80

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, As = Arsenic, Pb = Lead, Hg = Mercury, -- = not analyzed.
5) Data is shown for arsenic, lead, and mercury at locations with one or more detections. See Table 2 for complete analytical results for metals.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

As: Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
Pb: DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note 3, April.
Hg: DTSC, 2025, HERO, HHRA Note 3, April.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

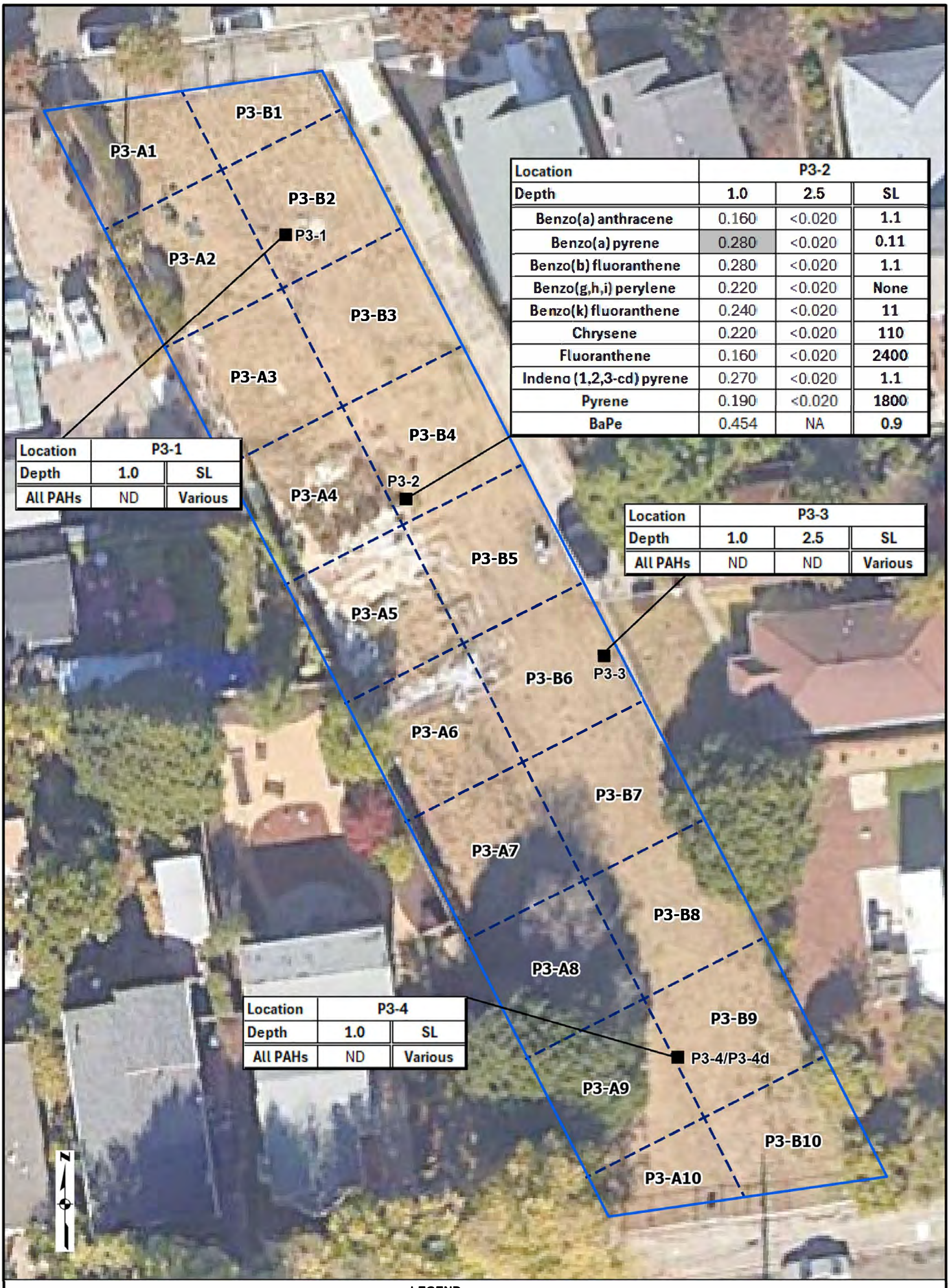
GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P3_Metals	
Issued: 15-May-2025	Drawn By: AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- SELECT METALS
PARCEL 3

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 5b



Location	P3-1	
Depth	1.0	SL
All PAHs	ND	Various

Location	P3-2		
Depth	1.0	2.5	SL
Benzo(a) anthracene	0.160	<0.020	1.1
Benzo(a) pyrene	0.280	<0.020	0.11
Benzo(b) fluoranthene	0.280	<0.020	1.1
Benzo(g,h,i) perylene	0.220	<0.020	None
Benzo(k) fluoranthene	0.240	<0.020	11
Chrysene	0.220	<0.020	110
Fluoranthene	0.160	<0.020	2400
Indeno (1,2,3-cd) pyrene	0.270	<0.020	1.1
Pyrene	0.190	<0.020	1800
BaPe	0.454	NA	0.9

Location	P3-3		
Depth	1.0	2.5	SL
All PAHs	ND	ND	Various

Location	P3-4	
Depth	1.0	SL
All PAHs	ND	Various

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, PAHs = Polyaromatic Hydrocarbons, BaPe = benzo(a)pyrene equivalent value, NA = not applicable, ND = not detected.
5) See Table 3 for analytical results for complete analytical results for PAHS and data flag definitions.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

BaPe: BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).
All other PAHs: DTSC screening levels for residential soil (DTSC-SLs) as published in DTSC, HERO, HHRA Note 3 (April 2025) or US Environmental Protection Agency Regional Screening Levels (November 2024), if no DTSC-SL is published.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

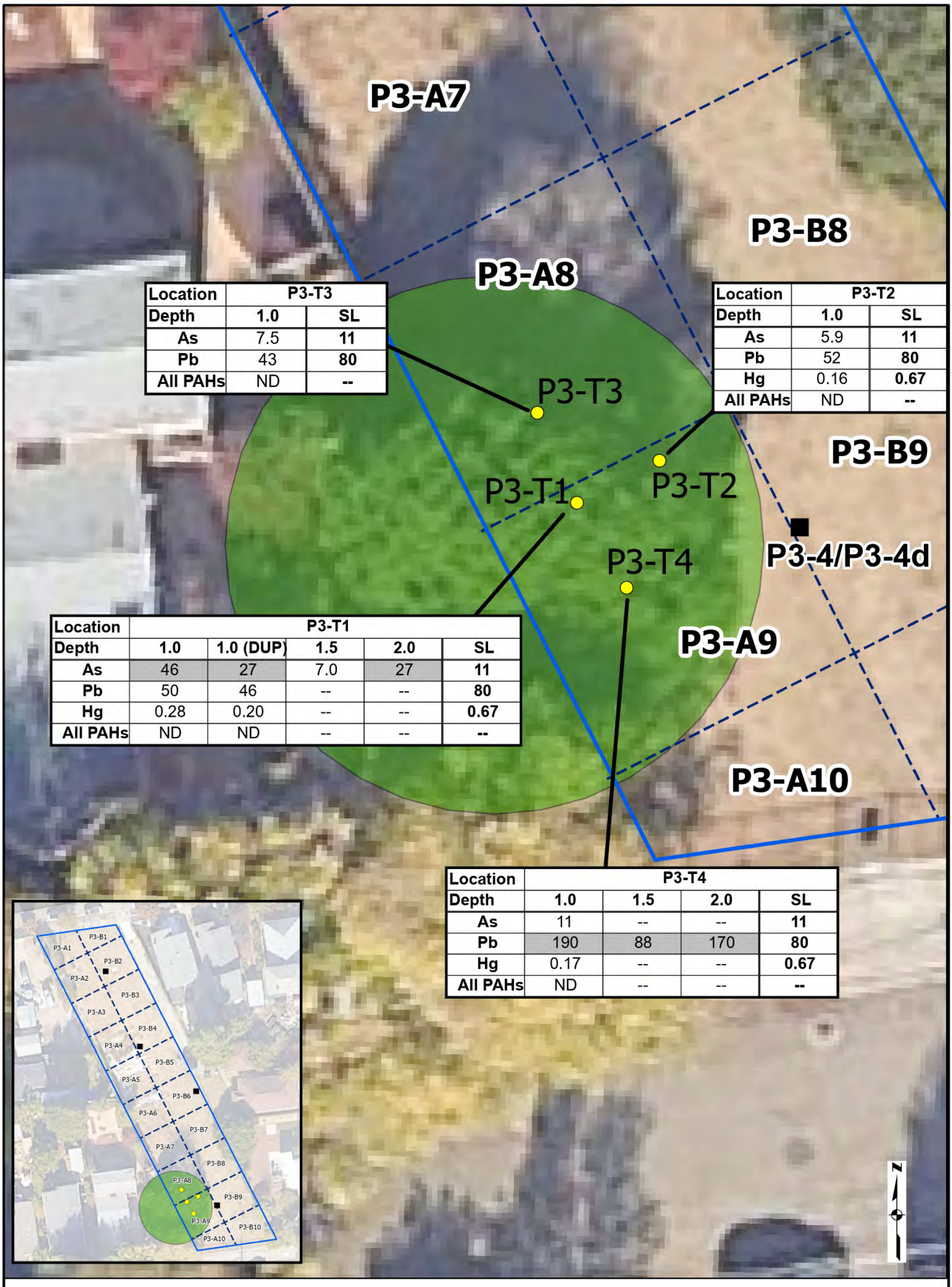
GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P3_PAHs	
Issued: 15-May-2025	Drawn By: AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- PAHs
PARCEL 3

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 5c



Location	P3-T3	
Depth	1.0	SL
As	7.5	11
Pb	43	80
All PAHs	ND	--

Location	P3-T2	
Depth	1.0	SL
As	5.9	11
Pb	52	80
Hg	0.16	0.67
All PAHs	ND	--

Location	P3-T1				
Depth	1.0	1.0 (DUP)	1.5	2.0	SL
As	46	27	7.0	27	11
Pb	50	46	--	--	80
Hg	0.28	0.20	--	--	0.67
All PAHs	ND	ND	--	--	--

Location	P3-T4			
Depth	1.0	1.5	2.0	SL
As	11	--	--	11
Pb	190	88	170	80
Hg	0.17	--	--	0.67
All PAHs	ND	--	--	--

Notes:

1) All depths in feet below ground surface (ft bgs).
2) grey shading indicates result exceeded SL.
3) results & SLs are reported in milligrams per kilogram.
4) SL = screening level, As = Arsenic, Pb = Lead, Hg = Mercury, PAHs = Polyaromatic Hydrocarbons, ND = not detected.
5) See Table 3 for analytical results for complete analytical results for PAHS and data flag definitions.

LEGEND

- Targeted Soil Samples
- Tree Canopy
- Extent of Sample Grid Cell
- Previous Investigation Sample Location (2022)

Screening Level References:

As: Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
Pb: DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note 3, April.
Hg: DTSC, 2025, HERO, HHRA Note 3, April.

Feet
0 5 10

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P3_Tree	
Issued: 15-May-2025	Drawn By: AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- TARGETED SAMPLES
PARCEL 3

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 5d

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs). SLs and analytical results for each COPC are presented on Figures 5b-5d.

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)
- Planned City of Berkeley Property Gain
- Planned City of Berkeley Property Reduction

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

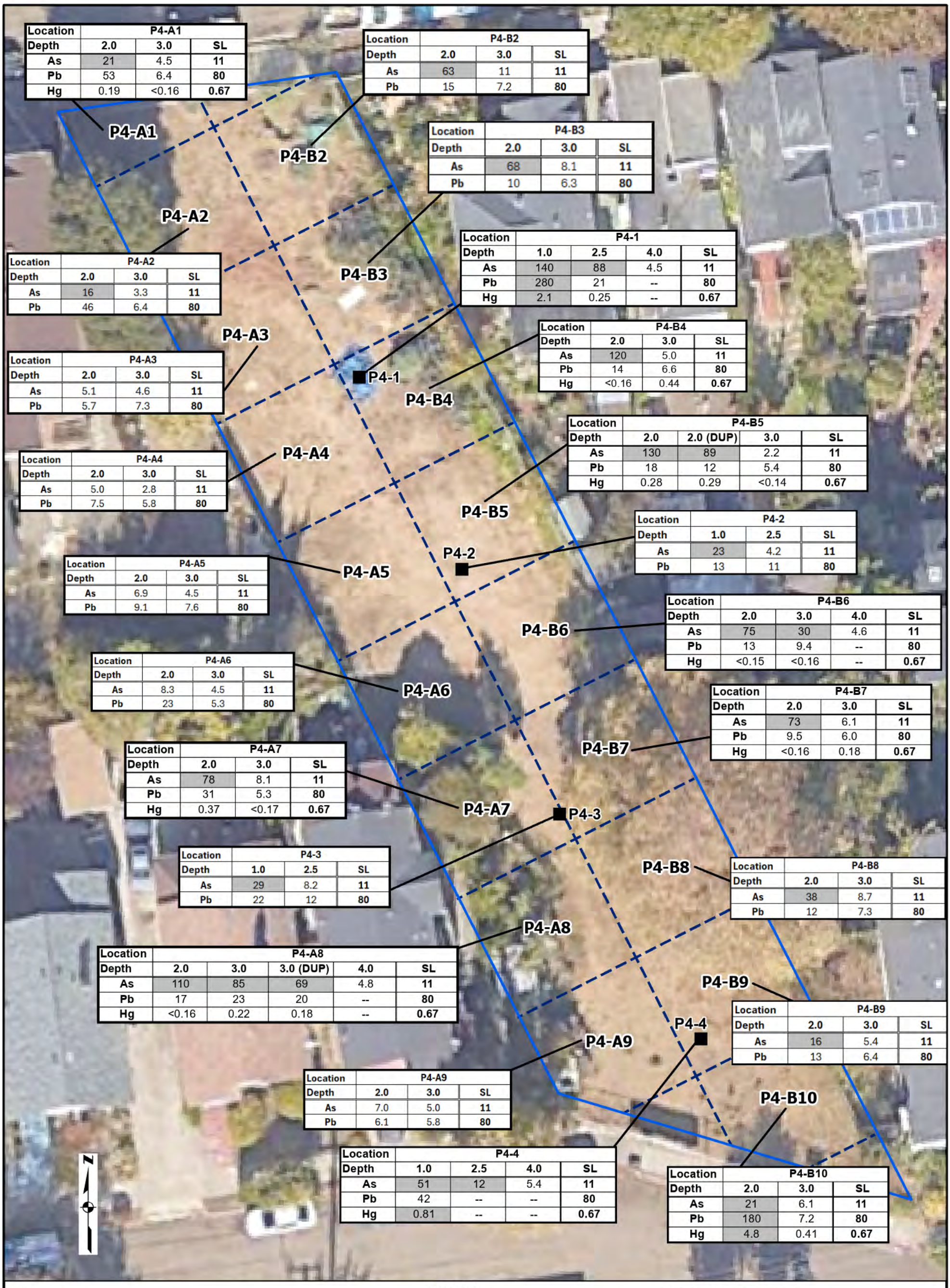
GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P4_ResultsLotLines	
Issued:	Drawn By:	
22-Nov-2024	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

PROPOSED EXCAVATION DEPTHS
PARCEL 4

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 6a



Location	P4-A1		
Depth	2.0	3.0	SL
As	21	4.5	11
Pb	53	6.4	80
Hg	0.19	<0.16	0.67

Location	P4-B2		
Depth	2.0	3.0	SL
As	63	11	11
Pb	15	7.2	80

Location	P4-B3		
Depth	2.0	3.0	SL
As	68	8.1	11
Pb	10	6.3	80

Location	P4-A2		
Depth	2.0	3.0	SL
As	16	3.3	11
Pb	46	6.4	80

Location	P4-1			
Depth	1.0	2.5	4.0	SL
As	140	88	4.5	11
Pb	280	21	--	80
Hg	2.1	0.25	--	0.67

Location	P4-A3		
Depth	2.0	3.0	SL
As	5.1	4.6	11
Pb	5.7	7.3	80

Location	P4-B4		
Depth	2.0	3.0	SL
As	120	5.0	11
Pb	14	6.6	80
Hg	<0.16	0.44	0.67

Location	P4-B5			
Depth	2.0	2.0 (DUP)	3.0	SL
As	130	89	2.2	11
Pb	18	12	5.4	80
Hg	0.28	0.29	<0.14	0.67

Location	P4-A4		
Depth	2.0	3.0	SL
As	5.0	2.8	11
Pb	7.5	5.8	80

Location	P4-2		
Depth	1.0	2.5	SL
As	23	4.2	11
Pb	13	11	80

Location	P4-A5		
Depth	2.0	3.0	SL
As	6.9	4.5	11
Pb	9.1	7.6	80

Location	P4-B6			
Depth	2.0	3.0	4.0	SL
As	75	30	4.6	11
Pb	13	9.4	--	80
Hg	<0.15	<0.16	--	0.67

Location	P4-A6		
Depth	2.0	3.0	SL
As	8.3	4.5	11
Pb	23	5.3	80

Location	P4-B7		
Depth	2.0	3.0	SL
As	73	6.1	11
Pb	9.5	6.0	80
Hg	<0.16	0.18	0.67

Location	P4-A7		
Depth	2.0	3.0	SL
As	78	8.1	11
Pb	31	5.3	80
Hg	0.37	<0.17	0.67

Location	P4-3		
Depth	1.0	2.5	SL
As	29	8.2	11
Pb	22	12	80

Location	P4-B8		
Depth	2.0	3.0	SL
As	38	8.7	11
Pb	12	7.3	80

Location	P4-A8				
Depth	2.0	3.0	3.0 (DUP)	4.0	SL
As	110	85	69	4.8	11
Pb	17	23	20	--	80
Hg	<0.16	0.22	0.18	--	0.67

Location	P4-B9		
Depth	2.0	3.0	SL
As	16	5.4	11
Pb	13	6.4	80

Location	P4-A9		
Depth	2.0	3.0	SL
As	7.0	5.0	11
Pb	6.1	5.8	80

Location	P4-4			
Depth	1.0	2.5	4.0	SL
As	51	12	5.4	11
Pb	42	--	--	80
Hg	0.81	--	--	0.67

Location	P4-B10		
Depth	2.0	3.0	SL
As	21	6.1	11
Pb	180	7.2	80
Hg	4.8	0.41	0.67

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, As = Arsenic, Pb = Lead, Hg = Mercury, -- = not analyzed.
5) Data is shown for arsenic, lead, and mercury at locations with one or more detections. See Table 2 for complete analytical results for metals.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

As: Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
Pb: DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note 3, April.
Hg: DTSC, 2025, HERO, HHRA Note 3, April.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

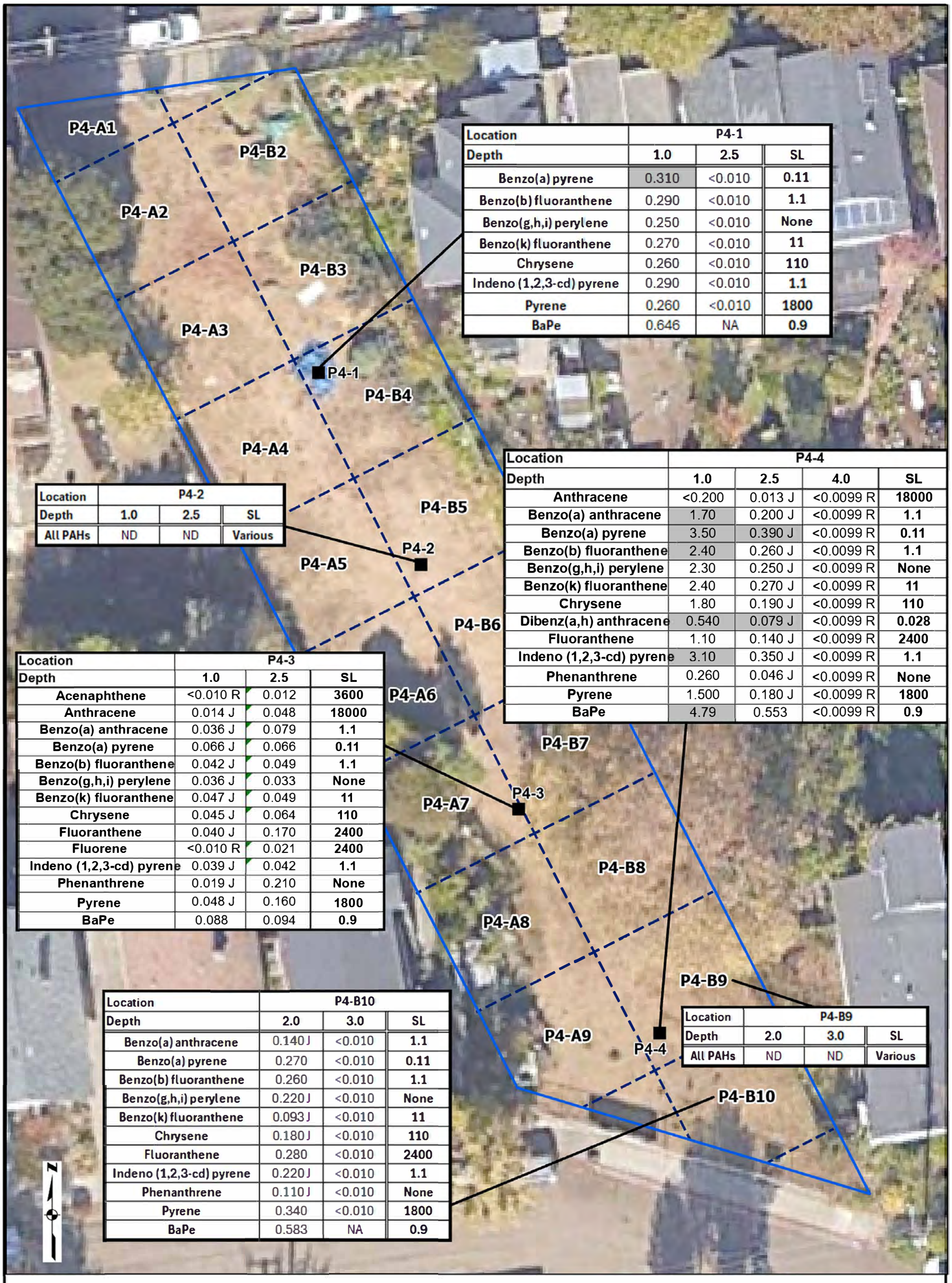
GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P4_Metals	
Issued:	Drawn By:	
15-May-2025	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- SELECT METALS
PARCEL 4

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 6b



Location	P4-1		
Depth	1.0	2.5	SL
Benzo(a) pyrene	0.310	<0.010	0.11
Benzo(b) fluoranthene	0.290	<0.010	1.1
Benzo(g,h,i) perylene	0.250	<0.010	None
Benzo(k) fluoranthene	0.270	<0.010	11
Chrysene	0.260	<0.010	110
Indeno (1,2,3-cd) pyrene	0.290	<0.010	1.1
Pyrene	0.260	<0.010	1800
BaPe	0.646	NA	0.9

Location	P4-2		
Depth	1.0	2.5	SL
All PAHs	ND	ND	Various

Location	P4-3		
Depth	1.0	2.5	SL
Acenaphthene	<0.010 R	0.012	3600
Anthracene	0.014 J	0.048	18000
Benzo(a) anthracene	0.036 J	0.079	1.1
Benzo(a) pyrene	0.066 J	0.066	0.11
Benzo(b) fluoranthene	0.042 J	0.049	1.1
Benzo(g,h,i) perylene	0.036 J	0.033	None
Benzo(k) fluoranthene	0.047 J	0.049	11
Chrysene	0.045 J	0.064	110
Fluoranthene	0.040 J	0.170	2400
Fluorene	<0.010 R	0.021	2400
Indeno (1,2,3-cd) pyrene	0.039 J	0.042	1.1
Phenanthrene	0.019 J	0.210	None
Pyrene	0.048 J	0.160	1800
BaPe	0.088	0.094	0.9

Location	P4-4			
Depth	1.0	2.5	4.0	SL
Anthracene	<0.200	0.013 J	<0.0099 R	18000
Benzo(a) anthracene	1.70	0.200 J	<0.0099 R	1.1
Benzo(a) pyrene	3.50	0.390 J	<0.0099 R	0.11
Benzo(b) fluoranthene	2.40	0.260 J	<0.0099 R	1.1
Benzo(g,h,i) perylene	2.30	0.250 J	<0.0099 R	None
Benzo(k) fluoranthene	2.40	0.270 J	<0.0099 R	11
Chrysene	1.80	0.190 J	<0.0099 R	110
Dibenz(a,h) anthracene	0.540	0.079 J	<0.0099 R	0.028
Fluoranthene	1.10	0.140 J	<0.0099 R	2400
Indeno (1,2,3-cd) pyrene	3.10	0.350 J	<0.0099 R	1.1
Phenanthrene	0.260	0.046 J	<0.0099 R	None
Pyrene	1.500	0.180 J	<0.0099 R	1800
BaPe	4.79	0.553	<0.0099 R	0.9

Location	P4-B9		
Depth	2.0	3.0	SL
All PAHs	ND	ND	Various

Location	P4-B10		
Depth	2.0	3.0	SL
Benzo(a) anthracene	0.140 J	<0.010	1.1
Benzo(a) pyrene	0.270	<0.010	0.11
Benzo(b) fluoranthene	0.260	<0.010	1.1
Benzo(g,h,i) perylene	0.220 J	<0.010	None
Benzo(k) fluoranthene	0.093 J	<0.010	11
Chrysene	0.180 J	<0.010	110
Fluoranthene	0.280	<0.010	2400
Indeno (1,2,3-cd) pyrene	0.220 J	<0.010	1.1
Phenanthrene	0.110 J	<0.010	None
Pyrene	0.340	<0.010	1800
BaPe	0.583	NA	0.9

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, PAHs = Polyaromatic Hydrocarbons, BaPe = benzo(a)pyrene equivalent value, NA = not applicable, ND = not detected.
5) See Table 3 for analytical results for complete analytical results for PAHS and data flag definitions.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

BaPe: BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).
All other PAHs: DTSC screening levels for residential soil (DTSC-SLs) as published in DTSC, HERO, HHRA Note 3 (April 2025) or US Environmental Protection Agency Regional Screening Levels (November 2024), if no DTSC-SL is published.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

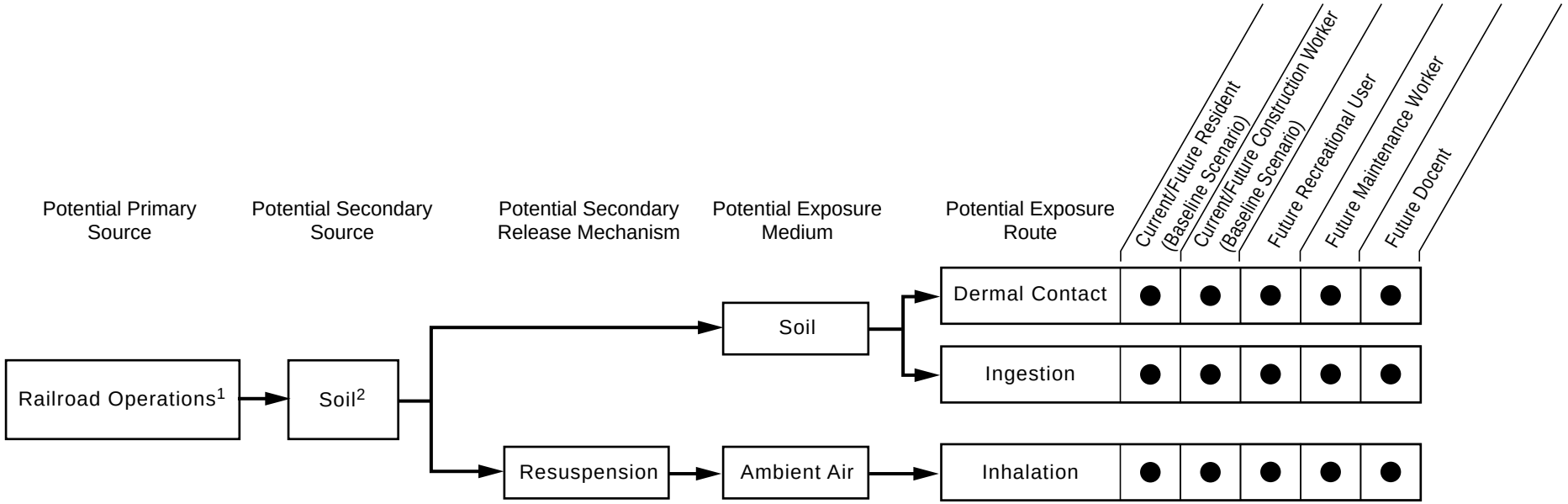
GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P4_PAHs	
Issued: 15-May-2025	Drawn By: AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- PAHs
PARCEL 4

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 6c



Notes:

1) All parcels were formerly part of the Santa Fe Railroad Right-of-Way and contained railroad tracks. Typical environmental impacts on railroad corridors include deposition of petroleum-related constituents, metals, and weed control chemicals to shallow soil.

2) Site chemicals of potential concern (COPCs) are only present in the vadose zone, are not mobile in soil, and have low solubility. As such, mobilization of COPCs to groundwater does not represent a complete exposure pathway.

EXPLANATION

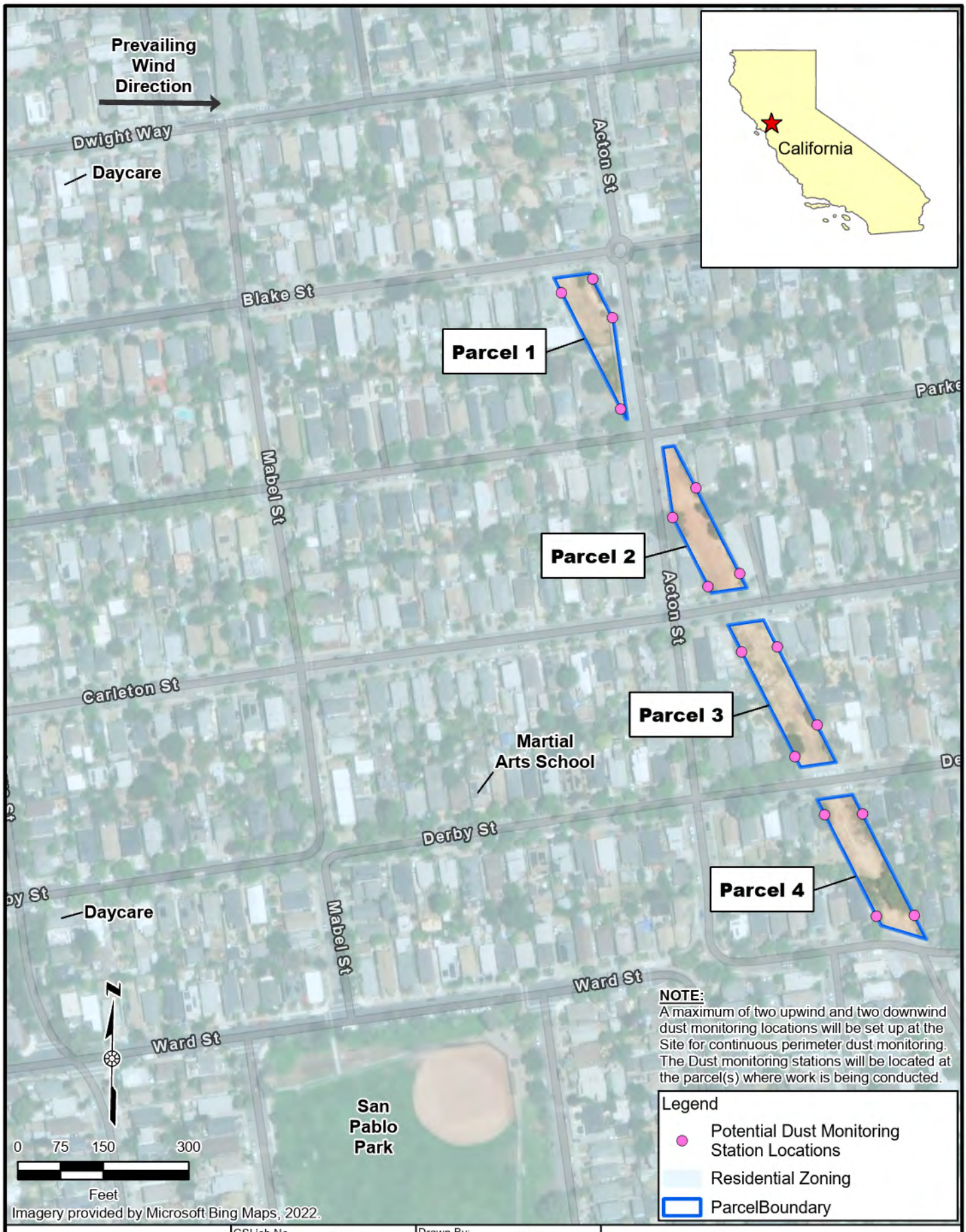
- ☐ Incomplete pathway if blank
- ● Complete exposure pathway; included in SLRE

GSI ENVIRONMENTAL

GSI Job No.	6272	Drawn By:	JC
Issued:	10/22/2024	Chk'd By:	JKW
	Figure 7	Aprv'd By:	JPD
Scale:	NA		

CONCEPTUAL SITE EXPOSURE MODEL

Santa Fe Trackbed to Park
Berkeley, California



GSI ENVIRONMENTAL

GSI job No.	6272	Drawn By:	DM
Issued:	19-Mar-2025	Chk'd By:	KBI
		Appv'd By:	JPD
Map ID:	SFROW_Site_F8	**FIGURE 8**	

TYPICAL AIR MONITORING STATION LOCATIONS AND SENSITIVE RECEPTORS

Santa Fe Trackbed to Park
Berkeley, California

GSI ENVIRONMENTAL

GSI job No.	6272	Drawn By:	AJC
Issued:	21-Oct-2025	Chk'd By:	TRG
		Appv'd By:	TRG
Map ID:	SFROW_TruckRoutes		FIGURE 9A

PRIMARY TRUCK ROUTE

Santa Fe Trackbed to Park
Berkeley, California

GSI ENVIRONMENTAL	GSI job No. 6272	Drawn By: AJC	ALTERNATIVE TRUCK ROUTE
	Issued: 21-Oct-2025	Chk'd By: TRG	
		Appv'd By: TRG	Santa Fe Trackbed to Park Berkeley, California
	Map ID: SFROW_TruckRoutes	FIGURE 9B	

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDICES

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX A

Conceptual Site Redevelopment Plans

1 COMMUNITY GARDEN PARK
-RAISED AND IN-GROUND GARDEN BEDS
-PICNIC TABLES AND WORK BENCH
-COMPOST, MULCH, AND TOOL STORAGE
-POLLINATOR, BIO-FILTRATION, AND PRIVACY SCREEN PLANTING

2 DOG PLAY AND COMMUNITY PARK
-SEPARATE ACTIVE AND PASSIVE DOG PLAY AREAS
-PERIMETER LOGS & SEATING
-DRINKING AND HOSE-OFF AREA
-PRIVACY SCREEN PLANTING

3 KID'S PLAY AND COMMUNITY PARK
-PLAYGROUND WITH WOOD EQUIPMENT
-KID'S SCOOTER/CYCLE TRACK
-PICNIC AREA
-POLLINATOR, BIO-FILTRATION, AND PRIVACY SCREEN PLANTING

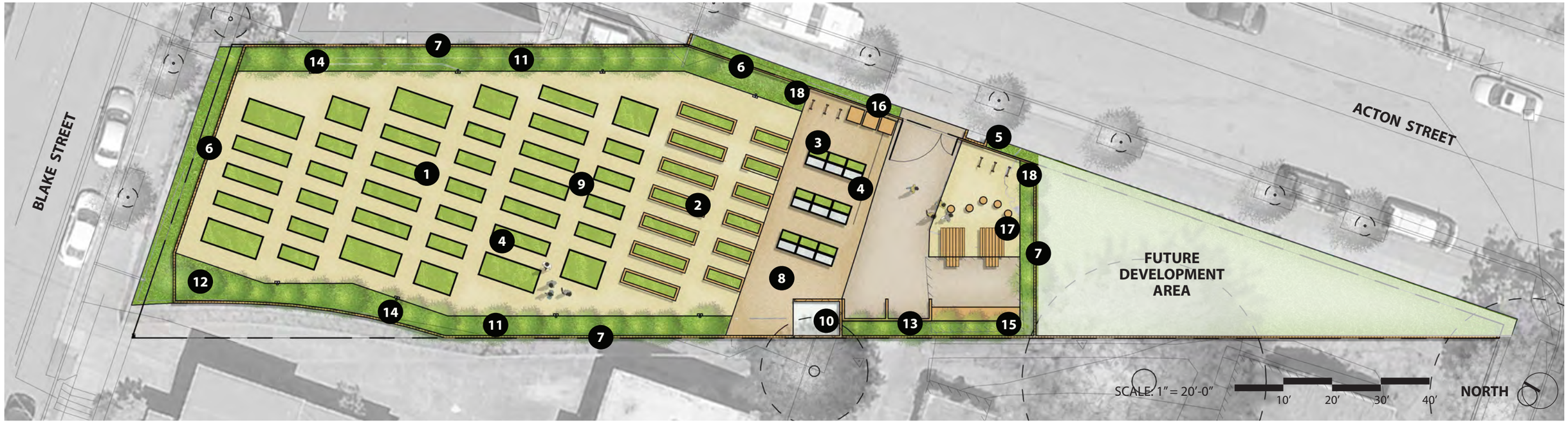
4 URBAN FARM AND EDUCATION PARK
-COMMUNITY PERMACTULTURE GARDEN
-OUTDOOR CLASSROOM WITH SPACE FOR LISTENING AND HANDS ON LEARNING
-PICNIC AREA
-POLLINATOR, BIO-FILTRATION, AND PRIVACY SCREEN PLANTING

SANTA FE RAILROAD TRACKBED TO PARK CONVERSION PROJECT

LANDSCAPE PLAN - OVERALL

PGAdesign LANDSCAPE ARCHITECTS

7.19.2023



1 IN GROUND BEDS

2 RAISED BEDS

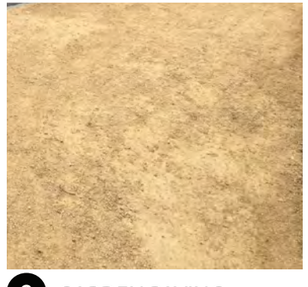
3 WHEELCHAIR ACCESIBLE BEDS

4 COLD FRAMES

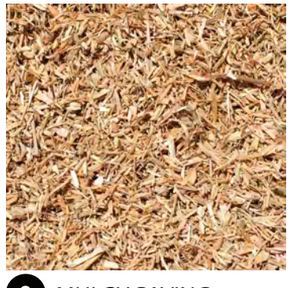
5 COMMUNITY FOOD PANTRY

6 WIRE FENCING

7 WOOD FENCING

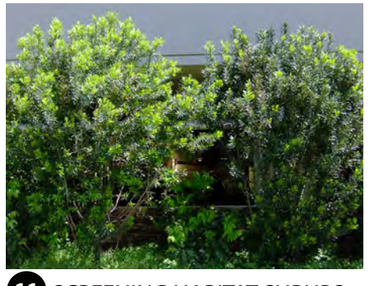


8 GARDEN PAVING



9 MULCH PAVING

10 GARDEN SHED



11 SCREENING HABITAT SHRUBS

12 POLLINATOR PLANTING AND HABITAT BOXES

13 BULK MATERIAL STORAGE

14 HOSE BIB

15 WORKBENCH

16 REFUSE BINS

17 PICNIC TABLES

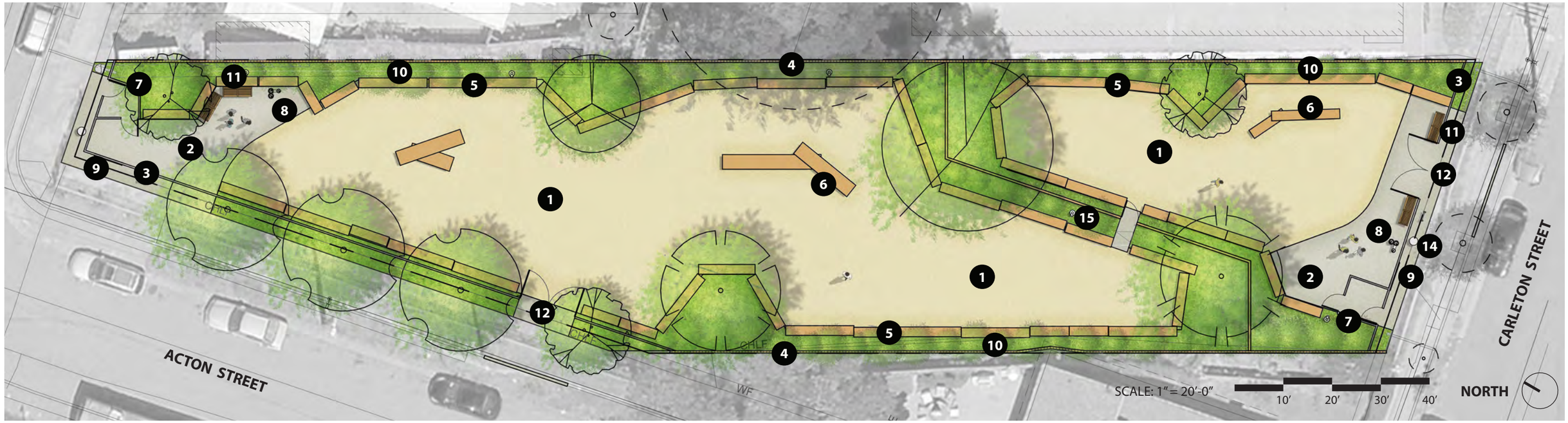
18 BICYCLE PARKING

SANTA FE RAILROAD TRACKBED TO PARK CONVERSION PROJECT

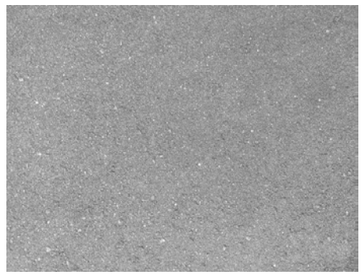
COMMUNITY GARDEN PARK

PGAdesign LANDSCAPE ARCHITECTS

7.19.2023



1 MULCH PAVING



2 CONCRETE PAVING

3 WIRE MESH FENCING

4 WOOD FENCING

5 LOG BORDER

6 STACKED LOGS

7 WOOD BENCH

8 HOSE BIB AND DRINKING FOUNTAIN

9 COMMUNITY NOTICE BOARD

10 SCREENING EVERGREEN SHRUBS

11 BENCHES

12 VEHICULAR ENTRY

13 BICYCLE PARKING

14 TRASH/RECYCLING

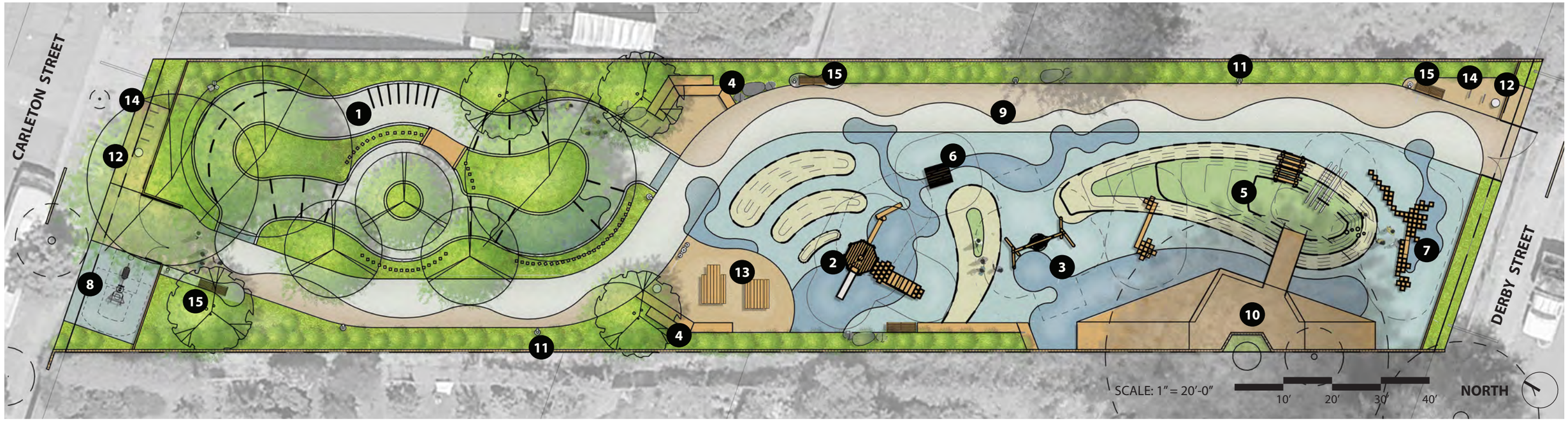
15 LIGHTING

SANTA FE RAILROAD TRACKBED TO PARK CONVERSION PROJECT

DOG PLAY AND COMMUNITY PARK

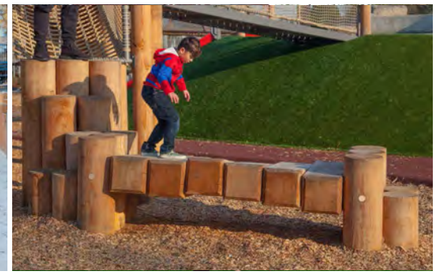
PGAdesign LANDSCAPE ARCHITECTS

7.19.2023



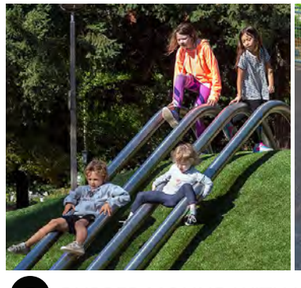
1 SCOOTER AND CYCLE TRACK

2 TREE HUT WITH TWISTING BRIDGE, SLIDE, AND LOG SCRAMBLE

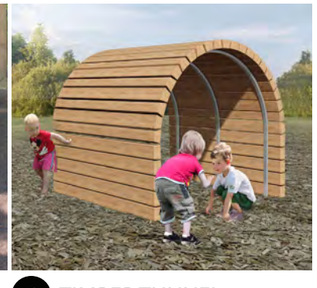


3 NEST SWING

4 TIMBER SEATING

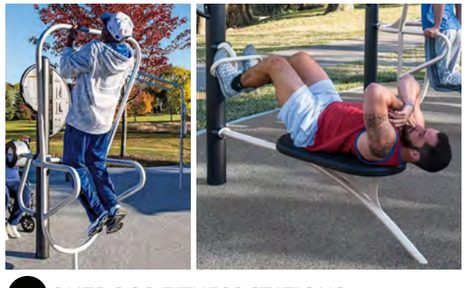


5 RUBBER MOUND WITH LADDER AND SLIDE

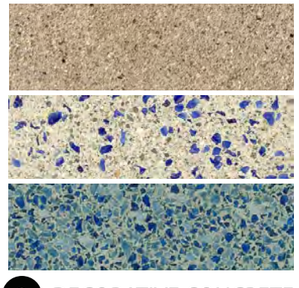


6 TIMBER TUNNEL

7 STEPPING CLUSTER



8 OUTDOOR FITNESS STATIONS



9 DECORATIVE CONCRETE

10 DECK AND BRIDGE

11 LIGHTING

12 TRASH/RECYCLING

13 PICNIC TABLES

14 BICYCLE PARKING

15 BENCHES

SANTA FE RAILROAD TRACKBED TO PARK CONVERSION PROJECT

KID'S PLAY AND COMMUNITY PARK

PGAdesign LANDSCAPE ARCHITECTS

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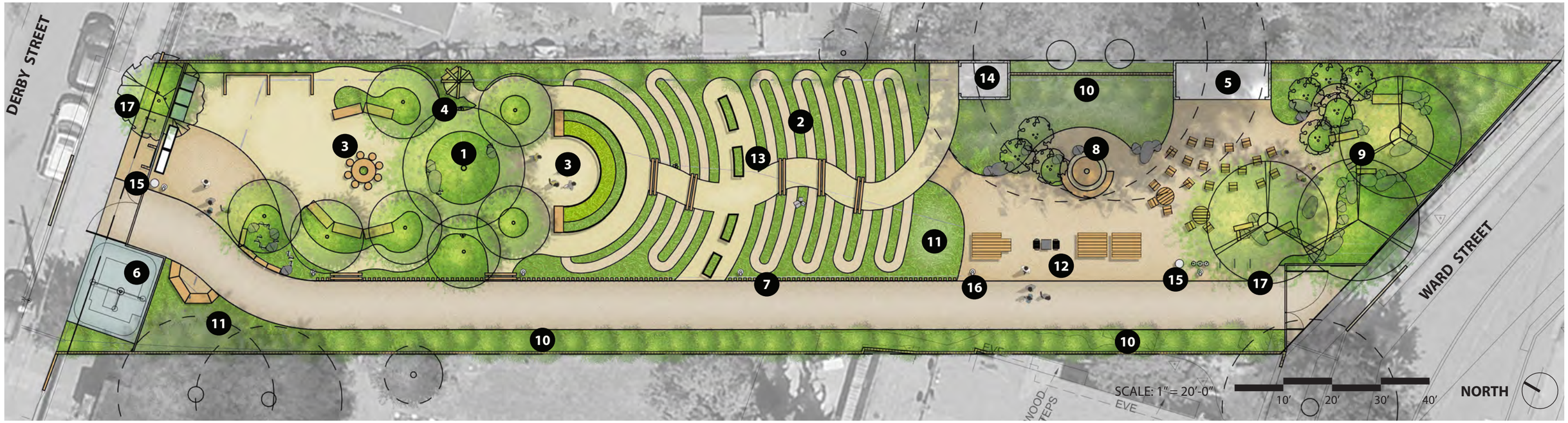


1 PERMACULTURE GARDEN

2 ROW CROPS

3 GATHERING SPACE

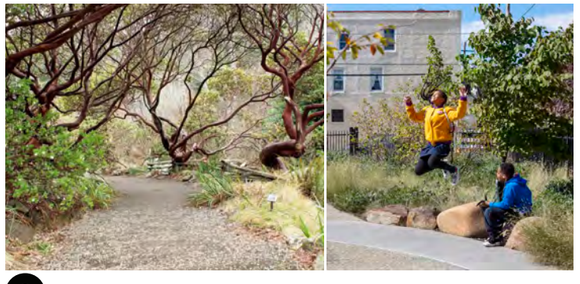
4 VINE PYRAMID

5 OUTDOOR CLASSROOM

6 FITNESS STATION

7 LOW GARDEN FENCE

8 KIDS HEIGHT ACTIVITY TABLE



9 EXPLORATION PATHWAY WITH BOULDER EDGE

10 SCREENING HABITAT SHRUBS

11 POLLINATOR PLANTING AND HABITAT BOXES

12 PICNIC AREA

13 HOSE BIB

14 GARDEN SHED

15 TRASH/RECYCLING

16 LIGHTING

17 BICYCLE PARKING

SANTA FE RAILROAD TRACKBED TO PARK CONVERSION PROJECT

URBAN FARM AND EDUCATION PARK

PGAdesign LANDSCAPE ARCHITECTS

7.19.2023

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX B

Selection of Exposure Point Concentrations and Screening Levels

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
1	***2022 Soil Investigation***																				
	P1-1	P1-1-1.0	7/13/2022	1.0	**0.91**	**9.3**	**180**	**0.56**	<0.50	**62**	**15**	**37**	**34**	**0.30**	**0.78**	**57**	**1.2**	<0.50	<0.50	**72**	**100**
		P1-1-2.5	7/13/2022	2.5	<0.5	**8.4**	**200**	**0.65**	<0.5	**69**	**17**	**33**	**9**	<0.050	**0.9**	**67**	**1.3**	<0.5	<0.5	**74**	**72**
		P1-1-4.0	7/13/2022	4.0	<0.5	**6.1**	**180**	**0.63**	<0.5	**70**	**12**	**29**	**6.8**	<0.050	<0.5	**58**	**1.2**	<0.5	<0.5	**71**	**59**
	P1-2	P1-2-1.0	7/13/2022	1.0	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-2-2.5	7/13/2022	2.5	**1.3**	**12**	**300**	**0.73**	<0.5	**37**	**16**	**28**	**13**	**0.079**	**1.3**	**53**	**1.3**	<0.5	<0.5	**40**	**66**
		P1-2-4.0	7/13/2022	4.0	--	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-3	P1-3-1.0	7/13/2022	1.0	**2.7**	**83**	**190**	**0.5**	<0.5	**33**	**19**	**32**	**34**	**0.23**	**1.0**	**48**	**1.1**	<0.5	<0.5	**42**	**74**
		P1-3-2.5	7/13/2022	2.5	--	**35**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-3-4.0	7/13/2022	4.0	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																				
	P1-A2	P1-A2-2.0	1/11/2024	2.0	--	**8.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A2-3.0	1/11/2024	3.0	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A3	P1-A3-2.0	1/11/2024	2.0	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A3-3.0	1/11/2024	3.0	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A4	P1-A4-2.0	1/11/2024	2.0	--	**4.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A4-3.0	1/11/2024	3.0	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A5	P1-A5-2.0	1/11/2024	2.0	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A5-3.0	1/11/2024	3.0	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A6	P1-A6-2.0	1/11/2024	2.0	--	**5.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A6-3.0	1/11/2024	3.0	--	**5.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<2.9 UJ	**8.0**	**160**	<0.48	<0.48	**50**	**12**	**31**	**34**	<0.16	<1.1	**45**	<2.9	<0.48	<2.9	**58**	**81**
		P1-A7-2.5	1/11/2024	2.5	<2.9 UJ	**4.1**	**130**	<0.49	<0.49	**46**	**11**	**20**	**6**	<0.16	<1.1	**41**	<2.9	<0.49	<2.9	**55**	**40**
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	<2.9 UJ	**6.1**	**170**	<0.48	<0.48	**48**	**14**	**33**	**47**	<0.16	<1	**46**	<2.9	<0.48	<2.9	**58**	**95**
		P1-A8-1.0	1/11/2024	1.0	<2.9 UJ	**7.5**	**200**	**0.49**	**0.71**	**47**	**23**	**35**	**54**	<0.16	<1	**52**	<2.9	<0.48	<2.9	**63**	**100**
		P1-A8-2.5	1/11/2024	2.5	<2.9 UJ	**5.5**	**140**	<0.49	<0.49	**40**	**11**	**21**	**9.5**	<0.16	**1.5**	**40**	<2.9	**0.51**	<2.9	**57**	**41**
	P1-A9	P1-A9-2.0	1/11/2024	2.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A9-3.0	1/11/2024	3.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A10	P1-A10-2.0	1/11/2024	2.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A10-3.0	1/11/2024	3.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B2	P1-B2-2.0	1/11/2024	2.0	--	**40**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B2-3.0	1/11/2024	3.0	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B3	P1-B3-2.0	1/11/2024	2.0	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B3-3.0	1/11/2024	3.0	--	**7.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B4	P1-B4-2.0	1/11/2024	2.0	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-3.0	1/11/2024	3.0	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-4.0	1/11/2024	4.0	--	**9.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
1	P1-B5	P1-B5-2.0	1/11/2024	2.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-3.0	1/11/2024	3.0	--	**150**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-4.0	1/11/2024	4.0	--	**130**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5D-5.0	4/19/2024	5.0	--	**5.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		DUP-2-240419	4/19/2024	5.0	--	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B6	P1-B6-2.0	1/11/2024	2.0	--	**41**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-3.0	1/11/2024	3.0	--	**110**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-4.0	1/11/2024	4.0	--	**100**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-5.0	4/19/2024	5.0	--	**23**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-6.0	4/19/2024	6.0	--	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B7	P1-B7-2.0	1/11/2024	2.0	--	**32**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-3.0	1/11/2024	3.0	--	**16**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-4.0	1/11/2024	4.0	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Parcel 1 Current Receptor EPCs				**2.7**	**150**	**300**	**0.73**	**0.71**	**70**	**23**	**37**	**54**	**0.30**	**1.5**	**67**	**1.3**	**0.51**	2.9	**74**	**100**
2	***2022 Soil Investigation***																				
	P2-1	P2-1-1.0	7/13/2022	1.0	--	**28**	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--
		P2-1-2.5	7/13/2022	2.5	**1.4**	**26**	**150**	<0.5	<0.5	**46**	**12**	**29**	**63**	**0.65**	<0.5	**37**	**0.93**	<0.5	<0.5	**55**	**180**
		P2-1-4.0	7/13/2022	4.0	--	**24**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-2	P2-2-1.0	7/13/2022	1.0	**1.8**	**37**	**170**	<0.5	<0.5	**34**	**12**	**42**	**200**	**0.43**	<0.5	**38**	**1.6**	<0.5	<0.5	**73**	**150**
		P2-2-2.5	7/13/2022	1.0	--	**41**	--	--	--	--	--	--	**10**	--	--	--	--	--	--	--	--
		P2-2-4.0	7/13/2022	4.0	--	**3.4**	--	--	--	--	--	--	**6.9**	--	--	--	--	--	--	--	--
	P2-3	P2-3-1.0	7/13/2022	1.0	**1.5**	**32**	**180**	<0.5	<0.5	**59**	**14**	**81**	**140**	**0.48**	**0.72**	**61**	**1.1**	<0.5	<0.5	**53**	**190**
		P2-3-2.5	7/13/2022	2.5	<0.5	**6.7**	**190**	**0.73**	<0.5	**73**	**13**	**32**	**7.6**	<0.050	<0.5	**55**	**1.2**	<0.5	<0.5	**71**	**61**
	P2-4	P2-4-1.0	7/13/2022	1.0	**3.6**	**220**	**280**	**0.57**	<0.5	**46**	**9.8**	**60**	**56**	**2.1**	<0.5	**83**	**0.91**	<0.5	<0.5	**34**	**62**
		P2-4-2.5	7/13/2022	2.5	--	**8.9**	--	--	--	--	--	--	**12**	<0.16 R	--	--	--	--	--	--	--
		P2-4-4.0	7/13/2022	4.0	--	**4.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																				
	P2-A4	P2-A4-2.0	1/8/2024	2.0	--	**4.7**	--	--	--	--	--	--	**6.6**	<0.16	--	--	--	--	--	--	--
		P2-A4-3.0	1/8/2024	3.0	--	**4.0**	--	--	--	--	--	--	**5.6**	<0.15	--	--	--	--	--	--	--
	P2-A5	P2-A5-2.0	1/8/2024	2.0	--	**4.4**	--	--	--	--	--	--	**6.0**	<0.16	--	--	--	--	--	--	--
		P2-A5-3.0	1/8/2024	3.0	--	**4.1**	--	--	--	--	--	--	**8.3**	<0.16	--	--	--	--	--	--	--
	P2-A6	P2-A6-2.0	1/8/2024	2.0	--	**6.1**	--	--	--	--	--	--	**71**	<0.15	--	--	--	--	--	--	--
		P2-A6-3.0	1/8/2024	3.0	--	**5.1**	--	--	--	--	--	--	**12**	<0.14	--	--	--	--	--	--	--
	P2-A7	P2-A7-2.0	1/8/2024	2.0	--	**5.9**	--	--	--	--	--	--	**12**	<0.15	--	--	--	--	--	--	--
		P2-A7-3.0	1/8/2024	3.0	--	**4.2**	--	--	--	--	--	--	**6.3**	<0.15	--	--	--	--	--	--	--
	P2-A8	P2-A8-2.0	1/8/2024	2.0	--	**9.6**	--	--	--	--	--	--	**110**	<0.15	--	--	--	--	--	--	--
		P2-A8-3.0	1/8/2024	3.0	--	**4.6**	--	--	--	--	--	--	**5.3**	<0.15	--	--	--	--	--	--	--
	P2-A9	P2-A9-2.0	1/8/2024	2.0	--	**9.9**	--	--	--	--	--	--	**44**	<0.14	--	--	--	--	--	--	--
		P2-A9-2.0(DUP)	1/8/2024	2.0	--	**11**	--	--	--	--	--	--	**94**	<0.16	--	--	--	--	--	--	--
		P2-A9-3.0	1/8/2024	3.0	--	**4.6**	--	--	--	--	--	--	**5.3**	<0.16	--	--	--	--	--	--	--
	P2-A10	P2-A10-2.0	1/8/2024	2.0	--	**6.2**	--	--	--	--	--	--	**35**	**0.46**	--	--	--	--	--	--	--
		P2-A10-3.0	1/8/2024	3.0	--	**4.4**	--	--	--	--	--	--	**5.3**	<0.16	--	--	--	--	--	--	--
	P2-B1	P2-B1-2.0	1/8/2024	2.0	--	**36**	--	--	--	--	--	--	**180**	**0.42**	--	--	--	--	--	--	--
		P2-B1-3.0(DUP)	1/8/2024	3.0	--	**20**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
		P2-B1-3.0	1/8/2024	3.0	--	**33**	--	--	--	--	--	--	**9.2**	<0.15	--	--	--	--	--	--	--
		P2-B1-4.0	1/8/2024	4.0	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B1D-5.0	4/19/2024	5.0	--	**4.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																
2	P2-1D	P2-1D-5.0	1/8/2024	5.0	--	**14**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-1D-6.0	1/8/2024	6.0	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B3	P2-B3-2.0	1/8/2024	2.0	--	**21**	--	--	--	--	--	--	**6.2**	<0.14	--	--	--	--	--	--	--
		P2-B3-3.0	1/8/2024	3.0	--	**13**	--	--	--	--	--	--	**13**	<0.14	--	--	--	--	--	--	--
		P2-B3-4.0	1/8/2024	4.0	--	**5.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B4	P2-B4-2.0	1/8/2024	2.0	--	**24**	--	--	--	--	--	--	**51**	**0.27**	--	--	--	--	--	--	--
		P2-B4-3.0	1/8/2024	3.0	--	**53**	--	--	--	--	--	--	**7.3**	<0.14	--	--	--	--	--	--	--
		P2-B4-4.0	1/8/2024	4.0	--	**74**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B4D-5.0	4/19/2024	5.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B5	P2-B5-2.0	1/8/2024	2.0	--	**120**	--	--	--	--	--	--	**24**	**0.27**	--	--	--	--	--	--	--
		P2-B5-3.0	1/8/2024	3.0	--	**23**	--	--	--	--	--	--	**10**	<0.14	--	--	--	--	--	--	--
		P2-B5-4.0	1/8/2024	4.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B6	P2-B6-2.0	1/8/2024	2.0	--	**310**	--	--	--	--	--	--	**66**	**0.49**	--	--	--	--	--	--	--
		P2-B6-3.0	1/8/2024	3.0	--	**53**	--	--	--	--	--	--	**14**	<0.14	--	--	--	--	--	--	--
		P2-B6-4.0	1/8/2024	4.0	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6-4.0(DUP)	1/8/2024	4.0	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6D-5.0	4/19/2024	5.0	--	**3.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B7	P2-B7-2.0	1/8/2024	2.0	--	**210**	--	--	--	--	--	--	**78**	**11**	--	--	--	--	--	--	--
		P2-B7-3.0	1/8/2024	3.0	--	**72**	--	--	--	--	--	--	**14**	**0.32**	--	--	--	--	--	--	--
		P2-B7-4.0	1/8/2024	4.0	--	**38**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B7D-5.0	4/19/2024	5.0	--	**6.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B8	P2-B8-2.0	1/8/2024	2.0	--	**100**	--	--	--	--	--	--	**68**	**0.5**	--	--	--	--	--	--	--
		P2-B8-3.0	1/8/2024	3.0	--	**91**	--	--	--	--	--	--	**16**	<0.14	--	--	--	--	--	--	--
		P2-B8-4.0	1/8/2024	4.0	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B9	P2-B9-2.0	1/8/2024	2.0	--	**19**	--	--	--	--	--	--	**24**	**0.24**	--	--	--	--	--	--	--
		P2-B9-3.0	1/8/2024	3.0	--	**59**	--	--	--	--	--	--	**25**	**0.18**	--	--	--	--	--	--	--
		P2-B9-4.0	1/8/2024	4.0	--	**29**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-5.0	4/19/2024	5.0	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-6.0	4/19/2024	6.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B10	P2-B10-2.0	1/8/2024	2.0	--	**130**	--	--	--	--	--	--	**140**	**0.39**	--	--	--	--	--	--	--
		P2-B10-3.0	1/8/2024	3.0	--	**46**	--	--	--	--	--	--	**87**	**0.36**	--	--	--	--	--	--	--
		P2-B10-4.0	1/8/2024	4.0	--	**33**	--	--	--	--	--	--	**14**	--	--	--	--	--	--	--	--
		P2-B10D-5.0	4/19/2024	5.0	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B10D-6.0	4/19/2024	6.0	--	**2.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Parcel 2 Current Receptor EPCs				**3.6**	**310**	**280**	**0.73**	0.50	**73**	**14**	**81**	**210**	**11**	**0.72**	**83**	**1.6**	0.50	0.50	**73**	**190**
3	***2022 Soil Investigation***																				
	P3-1	P3-1-1.0	7/14/2022	1.0	--	**63**	--	--	--	--	--	--	**15**	<0.15 R	--	--	--	--	--	--	--
		P3-1-2.5	7/14/2022	2.5	<2.7	**6.5**	**190**	**0.56**	**0.59**	**46**	**10**	**26**	**11**	<0.17	<0.91	**45**	<2.7	<0.45	<2.7	**43**	**56**
	P3-2	P3-2-1.0	7/14/2022	1.0	<2.8	**120**	**66**	<0.47	**0.65**	**35**	**7.3**	**42**	**66**	**1.7**	<0.94	**41**	<2.8	<0.47	<2.8	**35**	**96**
		P3-2-2.5	7/14/2022	2.5	<2.7 R	**67**	**130**	<0.45	**0.57**	**56**	**13**	**60**	**22**	**0.96**	<0.89	**65**	<2.7	<0.45	<2.7	**39**	**110**
		P3-2-4.0	7/14/2022	4.0	--	**6.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-3	P3-3-1.0	7/14/2022	1.0	<2.7	**12**	**180**	<0.44	**0.72**	**41**	**9.5**	**32**	**84**	**0.21**	<0.88	**39**	<2.7	<0.44	<2.7	**41**	**150**
		P3-3-2.5	7/14/2022	2.5	<3.0 UJ	**7.8**	**160**	<0.50	**0.69**	**37**	**12**	**30**	**68**	**0.20**	<0.99	**40**	<3.0	**0.56**	<3.0	**36**	**140**
	P3-4	P3-4-1.0	7/14/2022	1.0	<2.8	**13**	**130**	<0.47	**0.57**	**45**	**15**	**34**	**43**	<0.15	<0.94	**45**	<2.8	<0.47	<2.8	**50**	**73**
		P3-4-2.5	7/14/2022	2.5	--	**47**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4-4.0	7/14/2022	4.0	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
3	*2024 Soil Investigation*																				
	P3-A1	P3-A1-2.0	1/9/2024	2.0	--	**12**	--	--	--	--	--	--	**94**	**16 J**	--	--	--	--	--	--	--
		P3-A1-3.0	1/9/2024	3.0	--	**6.8**	--	--	--	--	--	--	**22**	**4.5 J**	--	--	--	--	--	--	--
		P3-A1-4.0	1/9/2024	4.0	--	**4.5**	--	--	--	--	--	--	--	**0.52**	--	--	--	--	--	--	--
	P3-A2	P3-A2-2.0	1/9/2024	2.0	--	**6.7**	--	--	--	--	--	--	**17**	**0.21 J**	--	--	--	--	--	--	--
		P3-A2-3.0	1/9/2024	3.0	--	**13**	--	--	--	--	--	--	**46**	**0.47 J**	--	--	--	--	--	--	--
		P3-A2-4.0	1/9/2024	4.0	--	**5.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-A3	P3-A3-2.0	1/9/2024	2.0	--	**7.8**	--	--	--	--	--	--	**21**	<0.15 UJ	--	--	--	--	--	--	--
		P3-A3-3.0	1/9/2024	3.0	--	**6.6**	--	--	--	--	--	--	**18**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A4	P3-A4-2.0	1/9/2024	2.0	--	**21**	--	--	--	--	--	--	**92**	**0.32 J**	--	--	--	--	--	--	--
		P3-A4-3.0	1/9/2024	3.0	--	**3.1**	--	--	--	--	--	--	**6.4**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A5	P3-A5-2.0	1/9/2024	2.0	--	**15**	--	--	--	--	--	--	**32**	**0.17 J**	--	--	--	--	--	--	--
		P3-A5-3.0	1/9/2024	3.0	--	**8.6**	--	--	--	--	--	--	**60**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A6	P3-A6-2.0	1/9/2024	2.0	--	**6.1**	--	--	--	--	--	--	**22**	<0.14 UJ	--	--	--	--	--	--	--
		P3-A6-3.0	1/9/2024	3.0	--	**3.8**	--	--	--	--	--	--	**6.7**	<0.16 UJ	--	--	--	--	--	--	--
	P3-A7	P3-A7-2.0	1/9/2024	2.0	--	**33**	--	--	--	--	--	--	**99**	**0.65**	--	--	--	--	--	--	--
		P3-A7-3.0	1/9/2024	3.0	--	**35**	--	--	--	--	--	--	**78**	**0.36**	--	--	--	--	--	--	--
		P3-A7-4.0*	1/9/2024	4.0	--	**6.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-A7-4.0	1/9/2024	4.0	--	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-A8	P3-A8-2.0	1/9/2024	2.0	--	**5.6**	--	--	--	--	--	--	**9.0**	<0.14	--	--	--	--	--	--	--
		P3-A8-3.0	1/9/2024	3.0	--	**10**	--	--	--	--	--	--	**16**	<0.16	--	--	--	--	--	--	--
	P3-A9	P3-A9-2.0	1/9/2024	2.0	--	**15**	--	--	--	--	--	--	**88**	<0.16	--	--	--	--	--	--	--
		P3-A9-2.0(DUP)	1/9/2024	2.0	--	**6.1**	--	--	--	--	--	--	**44**	<0.15	--	--	--	--	--	--	--
		P3-A9-3.0	1/9/2024	3.0	--	**3.6**	--	--	--	--	--	--	**7.2**	<0.15	--	--	--	--	--	--	--
	P3-A10	P3-A10-2.0	1/9/2024	2.0	--	**10**	--	--	--	--	--	--	**25**	<0.16	--	--	--	--	--	--	--
		P3-A10-3.0	1/9/2024	3.0	--	**11**	--	--	--	--	--	--	**32**	<0.17	--	--	--	--	--	--	--
	P3-B1	P3-B1-2.0	1/9/2024	2.0	--	**69**	--	--	--	--	--	--	**98**	**0.5**	--	--	--	--	--	--	--
		P3-B1-3.0	1/9/2024	3.0	--	**39**	--	--	--	--	--	--	**75**	**0.32**	--	--	--	--	--	--	--
		P3-B1-4.0	1/9/2024	4.0	--	**16**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-5.0	4/18/2024	5.0	--	**90**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-6.0	4/18/2024	6.0	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B2	P3-B2-2.0	1/9/2024	2.0	--	**44**	--	--	--	--	--	--	**50**	**0.38**	--	--	--	--	--	--	--
		P3-B2-3.0	1/9/2024	3.0	--	**14**	--	--	--	--	--	--	**44**	**0.35**	--	--	--	--	--	--	--
		P3-B2-3.0(DUP)	1/9/2024	3.0	--	**12**	--	--	--	--	--	--	**56**	**0.29**	--	--	--	--	--	--	--
		P3-B2-4.0	1/9/2024	4.0	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B2D-5.0	4/18/2024	5.0	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B3	P3-B3-2.0	1/9/2024	2.0	--	**32**	--	--	--	--	--	--	**59**	**0.25**	--	--	--	--	--	--	--
		P3-B3-3.0	1/9/2024	3.0	--	**18**	--	--	--	--	--	--	**38**	**0.28**	--	--	--	--	--	--	--
		P3-B3-4.0	1/9/2024	4.0	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B3D-5.0	4/18/2024	5.0	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B4	P3-B4-2.0	1/9/2024	2.0	--	**35**	--	--	--	--	--	--	**72**	**0.85**	--	--	--	--	--	--	--
		P3-B4-3.0	1/9/2024	3.0	--	**88**	--	--	--	--	--	--	**140**	**0.32**	--	--	--	--	--	--	--
		P3-B4-4.0	1/9/2024	4.0	--	**38**	--	--	--	--	--	--	**45**	--	--	--	--	--	--	--	--
		P3-B4D-5.0	4/18/2024	5.0	--	**8.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																
3	P3-B5	P3-B5-2.0	1/9/2024	2.0	--	**85**	--	--	--	--	--	--	**71**	**0.48**	--	--	--	--	--	--	--
		P3-B5-3.0	1/9/2024	3.0	--	**120**	--	--	--	--	--	--	**27**	**0.17**	--	--	--	--	--	--	--
		P3-B5-4.0	1/9/2024	4.0	--	**120**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B5D-5.0	4/18/2024	5.0	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B6	P3-B6-2.0	1/9/2024	2.0	--	**79**	--	--	--	--	--	--	**94**	**0.44**	--	--	--	--	--	--	--
		P3-B6-3.0	1/9/2024	3.0	--	**28**	--	--	--	--	--	--	**64**	**0.27 J**	--	--	--	--	--	--	--
		P3-B6-4.0	1/9/2024	4.0	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B6D-5.0	4/18/2024	5.0	--	**7.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B7	P3-B7-2.0	1/9/2024	2.0	--	**73**	--	--	--	--	--	--	**98**	**0.40 J**	--	--	--	--	--	--	--
		P3-B7-3.0	1/9/2024	3.0	--	**38**	--	--	--	--	--	--	**52**	**0.68 J**	--	--	--	--	--	--	--
		P3-B7-4.0	1/9/2024	4.0	--	**21**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-5.0	4/18/2024	5.0	--	**51**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-6.0	4/18/2024	6.0	--	**4.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B8	P3-B8-2.0	1/9/2024	2.0	--	**23**	--	--	--	--	--	--	**94**	**0.38 J**	--	--	--	--	--	--	--
		P3-B8-3.0	1/9/2024	3.0	--	**57**	--	--	--	--	--	--	**120**	**0.80 J**	--	--	--	--	--	--	--
		P3-B8-4.0	1/9/2024	4.0	--	**120**	--	--	--	--	--	--	**19**	--	--	--	--	--	--	--	--
		P3-B8D-5.0	4/18/2024	5.0	--	**6.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-4D	P3-4D-5.0	1/9/2024	5.0	--	**6.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4D-6.0	1/9/2024	6.0	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B9	P3-B9-2.0	1/9/2024	2.0	--	**67**	--	--	--	--	--	--	**94**	**0.59 J**	--	--	--	--	--	--	--
		P3-B9-3.0	1/9/2024	3.0	--	**53**	--	--	--	--	--	--	**77**	**0.45 J**	--	--	--	--	--	--	--
		P3-B9-4.0	1/9/2024	4.0	--	**17**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B9D-5.0	4/18/2024	5.0	--	**9.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B10	P3-B10-2.0	1/9/2024	2.0	--	**13**	--	--	--	--	--	--	**33**	<0.15 UJ	--	--	--	--	--	--	--
		P3-B10-3.0	1/9/2024	3.0	--	**23**	--	--	--	--	--	--	**45**	<0.16	--	--	--	--	--	--	--
		P3-B10-4.0	1/9/2024	4.0	--	**3.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T1	P3-T1-1.0	4/18/2024	1.0	--	**46**	--	--	--	--	--	--	**50 J**	**0.28**	--	--	--	--	--	--	--
		DUP-3-240418	4/18/2024	1.0	--	**27**	--	--	--	--	--	--	**46**	**0.20**	--	--	--	--	--	--	--
		P3-T1-1.5	4/18/2024	1.5	--	**7.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-T1-2.0	4/18/2024	2.0	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T2	P3-T2-1.0	4/18/2024	1.0	--	**5.9**	--	--	--	--	--	--	**52**	**0.16**	--	--	--	--	--	--	--
	P3-T3	P3-T3-1.0	4/18/2024	1.0	--	**7.5**	--	--	--	--	--	--	**43**	<0.16	--	--	--	--	--	--	--
	P3-T4	P3-T4-1.0	4/18/2024	1.0	--	**11**	--	--	--	--	--	--	**490**	**0.17**	--	--	--	--	--	--	--
		P3-T4-1.5	4/18/2024	1.5	--	--	--	--	--	--	--	--	**88**	--	--	--	--	--	--	--	--
		P3-T4-2.0	4/18/2024	2.0	--	--	--	--	--	--	--	--	**170**	--	--	--	--	--	--	--	--
Parcel 3 Current Receptor EPCs					3.0	**120**	**190**	**0.56**	**0.72**	**56**	**15**	**60**	**490**	**16**	0.99	**65**	3.0	**0.56**	3.0	**50**	**150**
4	***2022 Soil Investigation***																				
	P4-1	P4-1-1.0	7/14/2022	1.0	<3.0	**140**	**190**	<0.50	**1.9**	**75**	**14**	**81**	**280**	**2.1**	<1.0	**120**	<3.0	<0.50	<3.0	**37**	**440**
		P4-1-2.5	7/14/2022	2.5	<2.8	**88**	**160**	<0.47	**0.47**	**26**	**17**	**28**	**21**	**0.25**	<0.93	**47**	<2.8	<0.47	<2.8	**24**	**60**
		P4-1-4.0	7/14/2022	4.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-2	P4-2-1.0	7/14/2022	1.0	<2.8	**23**	**100**	<0.46	<0.46	**19**	**9.6**	**23**	**13**	<0.16	<0.92	**31**	<2.8	<0.46	<2.8	**23**	**44**
		P4-2-2.5	7/14/2022	2.5	<3.1	**4.2**	**200**	<0.52	**0.55**	**44**	**14**	**27**	**11**	<0.16	<1.0	**21**	<3.1	<0.52	<3.1	**42**	**44**
	P4-3	P4-3-1.0	7/14/2022	1.0	--	**29**	--	--	--	--	--	--	**22**	<0.16 R	--	--	--	--	--	--	--
		P4-3-2.5	7/14/2022	2.5	<2.7	**8.2**	**180**	<0.45	<0.45	**25**	**9.8**	**21**	**12**	<0.14	<0.91	**34**	<2.7	<0.45	<2.7	**26**	**62**
	P4-4	P4-4-1.0	7/14/2022	1.0	<2.7	**51**	**85**	<0.45	<0.45	**16**	**5.3**	**36**	**42**	**0.81**	<0.89	**20**	<2.7	<0.45	<2.7	**24**	**190**
		P4-4-2.5	7/14/2022	2.5	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P4-4-4.0	7/14/2022	4.0	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
	2024 Soil Investigation																				
4	P4-A1	P4-A1-2.0	1/10/2024	2.0	--	**21**	--	--	--	--	--	--	**53**	**0.19**	--	--	--	--	--	--	--
		P4-A1-3.0	1/10/2024	3.0	--	**4.5**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A2	P4-A2-2.0	1/10/2024	2.0	--	**16**	--	--	--	--	--	--	**46**	<0.14	--	--	--	--	--	--	--
		P4-A2-3.0	1/10/2024	3.0	--	**3.3**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A3	P4-A3-2.0	1/10/2024	2.0	--	**5.1**	--	--	--	--	--	--	**5.7**	<0.16	--	--	--	--	--	--	--
		P4-A3-3.0	1/10/2024	3.0	--	**4.6**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-A4	P4-A4-2.0	1/10/2024	2.0	--	**5.0**	--	--	--	--	--	--	**7.5**	<0.16	--	--	--	--	--	--	--
		P4-A4-3.0	1/10/2024	3.0	--	**2.8**	--	--	--	--	--	--	**5.8**	<0.14	--	--	--	--	--	--	--
	P4-A5	P4-A5-2.0	1/10/2024	2.0	--	**6.9**	--	--	--	--	--	--	**9.1**	<0.15	--	--	--	--	--	--	--
		P4-A5-3.0	1/10/2024	3.0	--	**4.5**	--	--	--	--	--	--	**7.6**	<0.16	--	--	--	--	--	--	--
	P4-A6	P4-A6-2.0	1/12/2024	2.0	--	**8.3**	--	--	--	--	--	--	**23**	<0.14	--	--	--	--	--	--	--
		P4-A6-3.0	1/12/2024	3.0	--	**4.5**	--	--	--	--	--	--	**5.3**	<0.14	--	--	--	--	--	--	--
	P4-A7	P4-A7-2.0	1/12/2024	2.0	--	**78**	--	--	--	--	--	--	**31**	**0.37**	--	--	--	--	--	--	--
		P4-A7-3.0	1/12/2024	3.0	--	**8.1**	--	--	--	--	--	--	**5.3**	<0.17	--	--	--	--	--	--	--
	P4-A8	P4-A8-2.0	1/12/2024	2.0	--	**110**	--	--	--	--	--	--	**17**	<0.16	--	--	--	--	--	--	--
		P4-A8-3.0	1/12/2024	3.0	--	**85**	--	--	--	--	--	--	**23**	**0.22**	--	--	--	--	--	--	--
		P4-A8-3.0(DUP)	1/12/2024	3.0	--	**69**	--	--	--	--	--	--	**20**	**0.18**	--	--	--	--	--	--	--
		P4-A8-4.0	1/12/2024	4.0	--	**4.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-A9	P4-A9-2.0	1/12/2024	2.0	--	**7.0**	--	--	--	--	--	--	**6.1**	<0.16	--	--	--	--	--	--	--
		P4-A9-3.0	1/12/2024	3.0	--	**5.0**	--	--	--	--	--	--	**5.8**	<0.16	--	--	--	--	--	--	--
	P4-B2	P4-B2-2.0	1/10/2024	2.0	--	**63**	--	--	--	--	--	--	**15**	<0.16	--	--	--	--	--	--	--
		P4-B2-3.0	1/10/2024	3.0	--	**11**	--	--	--	--	--	--	**7.2**	<0.15	--	--	--	--	--	--	--
	P4-B3	P4-B3-2.0	1/10/2024	2.0	--	**68**	--	--	--	--	--	--	**10**	<0.15	--	--	--	--	--	--	--
		P4-B3-3.0	1/10/2024	3.0	--	**8.1**	--	--	--	--	--	--	**6.3**	<0.14	--	--	--	--	--	--	--
	P4-B4	P4-B4-2.0	1/10/2024	2.0	--	**120**	--	--	--	--	--	--	**14**	<0.16	--	--	--	--	--	--	--
		P4-B4-3.0	1/10/2024	3.0	--	**5.0**	--	--	--	--	--	--	**6.6**	**0.44**	--	--	--	--	--	--	--
	P4-B5	P4-B5-2.0	1/10/2024	2.0	--	**130**	--	--	--	--	--	--	**18**	**0.28**	--	--	--	--	--	--	--
		P4-B5-2.0(DUP)	1/10/2024	2.0	--	**89**	--	--	--	--	--	--	**12**	**0.29**	--	--	--	--	--	--	--
		P4-B5-3.0	1/10/2024	3.0	--	**2.2**	--	--	--	--	--	--	**5.4**	<0.14	--	--	--	--	--	--	--
	P4-B6	P4-B6-2.0	1/10/2024	2.0	--	**75**	--	--	--	--	--	--	**13**	<0.15	--	--	--	--	--	--	--
		P4-B6-3.0	1/10/2024	3.0	--	**30**	--	--	--	--	--	--	**9.4**	<0.16	--	--	--	--	--	--	--
		P4-B6-4.0	1/10/2024	4.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-B7	P4-B7-2.0	1/10/2024	2.0	--	**73**	--	--	--	--	--	--	**9.5**	<0.16	--	--	--	--	--	--	--
		P4-B7-3.0	1/10/2024	3.0	--	**6.1**	--	--	--	--	--	--	**6.0**	**0.18**	--	--	--	--	--	--	--
	P4-B8	P4-B8-2.0	1/10/2024	2.0	--	**38**	--	--	--	--	--	--	**12**	<0.15	--	--	--	--	--	--	--
		P4-B8-3.0	1/10/2024	3.0	--	**8.7**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-B9	P4-B9-2.0	1/10/2024	2.0	--	**16**	--	--	--	--	--	--	**13**	<0.16	--	--	--	--	--	--	--
		P4-B9-3.0	1/10/2024	3.0	--	**5.4**	--	--	--	--	--	--	**6.4**	<0.15	--	--	--	--	--	--	--
	P4-B10	P4-B10-2.0	1/10/2024	2.0	--	**21**	--	--	--	--	--	--	**180**	**4.8**	--	--	--	--	--	--	--
		P4-B10-3.0	1/10/2024	3.0	--	**6.1**	--	--	--	--	--	--	**7.2**	**0.41**	--	--	--	--	--	--	--
	Parcel 4 Current Receptor EPCs				3.1	**140**	**200**	0.52	**1.9**	**75**	**17**	**81**	**280**	**4.8**	1.0	**120**	3.1	0.52	3.1	**42**	**440**
Screening Criteria																					
				Residential DTSC-SLs[2]	31	11[3]	15000	16	7.1	85000[4]	23	3100	80	0.67	390	820	390	390	0.78	390	23000
				Commercial/Industrial DTSC-SLs[2]	470	11[3]	220000	230	79	360000[4]	350	47000	500	2.9	5800	11000	5800	5800	12	5800	350000

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																

Notes:

bold = Analyte detected above the reporting limit

Shaded concentrations indicate analyte exceeds either USEPA or DTSC residential screening level.

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical using United States Environmental Protection Agency (USEPA) Methods 6010B and 7471A (for mercury).

Select samples were analyzed by McCampbell Analytical for metals using USEPA Method 6020. Shaded concentrations exceed residential screening criteria.

2. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).

3. Analytical results for arsenic in soil are compared to the 99th percentile of background arsenic concentrations as presented by Duvergé (2011).

4. The USEPA residential and commercial/industrial RSLs for chromium(III) were selected as surrogate SLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations:

< = Analyte not detected above the reporting limit shown

-- = Not analyzed

bgs = Below ground surface

DUP = Duplicate sample

DTSC = Department of Toxic Substances Control

EPC = exposure point concentration

J = The value is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications.

mg/kg = milligrams per kilogram

R = The data are rejected because the MS/MSD results are outside specifications or the holding time was exceeded

SL = Screening Level

UJ = The non-detected data is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications

References:

DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.

Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.

United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

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APPENDIX B TABLE B-2: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Polycyclic Aromatic Hydrocarbons[1]																	
					Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs	*mg/kg*																	
1	***2022 Soil Investigation***																					
	P1-1	P1-1-1.0	7/13/2022	1.0	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
		P1-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P1-1-4.0	7/13/2022	4.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	NA
	P1-2	P1-2-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P1-3	P1-3-1.0	7/13/2022	1.00	**0.015**	<0.0099	**0.029**	**0.14**	**0.19**	**0.15**	**0.11**	**0.15**	**0.17**	**0.027**	**0.15**	<0.0099	**0.15**	**0.022**	**0.032**	**0.05**	**0.071**	**0.19**	**0.26**
	2024 Soil Investigation																					
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A7	P1-A7-2.5	1/11/2024	2.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	NA
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-2.5	1/11/2024	2.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	Parcel 1 Current Receptor EPCs				**0.015**	0.020	**0.029**	**0.14**	**0.19**	**0.15**	**0.11**	**0.15**	**0.17**	**0.027**	**0.15**	0.020	**0.15**	**0.022**	**0.032**	**0.05**	**0.071**	**0.19**	**0.26**
2	***2022 Soil Investigation***																					
	P2-1	P2-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	**0.018**	**0.028**	**0.024**	**0.025**	**0.02**	**0.022**	<0.01	**0.036**	<0.01	**0.028**	<0.01	<0.01	<0.01	**0.024**	**0.041**	**0.045**
	P2-2	P2-2-1.0	7/13/2022	1.0	<0.04	<0.04	<0.04	**0.13**	**0.24**	**0.18**	**0.21**	**0.18**	**0.14**	<0.04	**0.12**	<0.04	**0.25**	<0.04	<0.04	<0.04	<0.04	**0.16**	**0.34**
	P2-3	P2-3-1.0	7/13/2022	1.0	<0.04	<0.04	<0.04	**0.047**	**0.064**	**0.063**	**0.059**	**0.044**	**0.059**	<0.04	**0.061**	<0.04	**0.058**	<0.04	<0.04	<0.04	**0.051**	**0.068**	**0.12**
		P2-3-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P2-4	P2-4-1.0	7/13/2022	1.0	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	Parcel 2 Current Receptor EPCs				0.040	0.10	0.040	**0.13**	**0.24**	**0.18**	**0.21**	**0.18**	**0.14**	0.040	**0.12**	0.040	**0.25**	0.040	0.040	0.040	**0.051**	**0.16**	**0.34**
3	***2022 Soil Investigation***																					
	P3-1	P3-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P3-2	P3-2-1.0	7/13/2022	1.0	<0.1	<0.1	<0.1	**0.16**	**0.28**	**0.28**	**0.22**	**0.24**	**0.22**	<0.1	**0.16**	<0.1	**0.27**	<0.1	<0.1	<0.1	<0.1	**0.19**	**0.45**
		P3-2-2.5	7/13/2022	2.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
	P3-3	P3-3-1.0	7/13/2022	1.0	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	NA
		P3-3-2.5	7/13/2022	2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	NA
	P3-4	P3-4-1.0	7/13/2022	1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA
	2024 Soil Investigation																					
	P3-T1	P3-T1-1.0	4/18/2024	1.0	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
		DUP-3-240418	4/18/2024	1.0	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T2	P3-T2-1.0	4/18/2024	1.0	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T3	P3-T3-1.0	4/18/2024	1.0	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	NA
	P3-T4	P3-T4-1.0	4/18/2024	1.0	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
	Parcel 3 Current Receptor EPCs				0.50	0.50	0.50	**0.16**	**0.28**	**0.28**	**0.22**	**0.24**	**0.22**	0.50	**0.16**	0.50	**0.27**	0.50	0.50	0.50	0.50	**0.19**	**0.45**

GSI ENVIRONMENTAL

APPENDIX B TABLE B-2: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Polycyclic Aromatic Hydrocarbons[1]																	
					Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs	*mg/kg*																	
4	***2022 Soil Investigation***																					
	P4-1	P4-1-1.0	7/13/2022	1.0	<0.25	<0.25	<0.25	<0.25	**0.31**	**0.29**	**0.25**	**0.27**	**0.26**	<0.25	<0.25	<0.25	**0.29**	<0.25	<0.25	<0.25	<0.25	**0.26**	0.65
		P4-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-2	P4-2-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P4-2-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-3	P4-3-1.0	7/13/2022	1.0	<0.01 R	<0.01 R	**0.014 J**	**0.036 J**	**0.066 J**	**0.042 J**	**0.036 J**	**0.047 J**	**0.045 J**	<0.01 R	**0.04 J**	<0.01 R	**0.039 J**	<0.01 R	<0.01 R	<0.01 R	**0.019 J**	**0.048 J**	**0.088**
		P4-3-2.5	7/13/2022	2.5	**0.012**	<0.01	**0.048**	**0.079**	**0.066**	**0.049**	**0.033**	**0.049**	**0.064**	<0.01	**0.17**	**0.021**	**0.042**	<0.01	<0.01	<0.01	**0.21**	**0.16**	**0.094**
	P4-4	P4-4-1.0	7/13/2022	1.0	<0.2	<0.2	<0.2	**1.7**	**3.5**	**2.4**	**2.3**	**2.4**	**1.8**	**0.54**	**1.1**	<0.2	**3.1**	<0.2	<0.2	<0.2	**0.26**	**1.5**	**4.79**
		P4-4-2.5	7/13/2022	2.5	<0.01 R	<0.01 R	**0.013 J**	**0.2 J**	**0.39 J**	**0.26 J**	**0.25 J**	**0.27 J**	**0.19 J**	**0.079 J**	**0.14 J**	<0.01 R	**0.35 J**	<0.01 R	<0.01 R	<0.01 R	**0.046 J**	**0.18 J**	**0.55**
		P4-4-4.0	7/13/2022	4.0	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	NA
	2024 Soil Investigation																					
	P4-B9	P4-B9-2.0	1/10/2024	2.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
		P4-B9-3.0	1/10/2024	3.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P4-B10	P4-B10-2.0	1/10/2024	2.0	<0.250	<0.250	<0.250	0.140 J	**0.270**	**0.260**	**0.220 J**	**0.093 J**	**0.180 J**	<0.250	**0.280**	<0.250	**0.220 J**	<0.250	<0.250	<0.250	**0.110 J**	**0.340**	**0.58**
		P4-B10-3.0	1/10/2024	3.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	Parcel 4 Current Receptor EPCs				**0.012**	0.25	**0.048**	**1.7**	**3.5**	**2.4**	**2.3**	**2.4**	**1.8**	**0.54**	**1.1**	**0.021**	**3.1**	0.25	0.25	0.25	**0.26**	**1.5**	**4.8**
Screening Criteria[2]																						
	Residential Risk-Based Screening Levels[3]				3600	None	18000	1.1	0.11	1.1	None	11	110	0.028	2400	2400	1.1	0.18	190	2	None	1800	0.9 [4]
	Commercial/Industrial Risk-Based Screening Levels[3]				29000	None	170000	16	1.7	17	None	170	1700	0.41	24000	21000	17	0.77	1500	7.6	None	18000	0.9 [4]

Notes:

bold = Analyte detected above the reporting limit

Shaded concentrations indicate analyte exceeds either USEPA or DTSC residential screening level.

1. Soil samples collected by GSI Environmental Inc.and analyzed by Enthalpy Analytical for polycyclic aromatic hydrocarbons (PAHs) using United States Environmental Protection Agency (USEPA) Method 8270C with selective ion monitoring (SIM). Shaded concentrations exceed residential screening criteria.

2. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs.

3. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).

4. BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).

Abbreviations:

< = Analyte not detected above the reporting limit shown
BaPe = Benzo(a)pyrene equivalent value
bgs = Below ground surface
DUP = Duplicate sample
EPC = exposure point concentration
J = The detected result is estimated.
mg/kg = Milligrams per kilogram
NA = Not applicable; PAHs were not detected; therefore, a BaPe was not calculated
R = The non-detected result is rejected because the holding time was exceeded.

References:

California Department of Toxic Substances Control (DTSC), 2009, Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process, July 1.
DTSC, 2015, Preliminary Endangerment Assessment Guidance Manual, October.
DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.
United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

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APPENDIX B TABLE B-3: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR PESTICIDES IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Organochlorine Pesticides																		
					Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC	Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
				feet bgs	mg/kg																		
1	***2022 Soil Investigation***																						
	P1-1	P1-1-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P1-1-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P1-1-4.0	7/13/2022	4.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P1-2	P1-2-2.5	7/13/2022	2.5	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
	P1-3	P1-3-1.0	7/13/2022	1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	2024 Soil Investigation																						
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
		P1-A7-2.5	1/11/2024	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.100
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	**0.057**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
		P1-A8-1.0(DUP)	1/11/2024	1.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.010	<0.100
		P1-A8-2.5	1/11/2024	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	Parcel 1 Current Receptor EPCs				0.0099	0.0099	0.0099	0.0099	0.0099	**0.057**	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.020	0.20
2	***2022 Soil Investigation***																						
	P2-1	P2-1-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-2	P2-2-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	**0.012 C J**	**0.015**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	P2-3	P2-3-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	**0.025**	**0.024**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P2-3-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-4	P2-4-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	Parcel 2 Current Receptor EPCs				0.010	0.010	0.010	0.010	0.010	0.10	0.010	**0.025**	**0.024**	**0.015**	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.020	0.20
3	***2022 Soil Investigation***																						
	P3-1	P3-1-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-2	P3-2-1.0	7/13/2022	1.0	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.098	<0.0098	**0.011 C**	**0.04**	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.02	<0.2
		P3-2-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-3	P3-3-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	**0.01**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P3-3-2.5	7/13/2022	2.5	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.049	<0.49
	P3-4	P3-4-1.0	7/13/2022	1.0	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
	Parcel 3 Current Receptor EPCs				0.025	0.025	0.025	0.025	0.025	0.25	0.025	**0.011**	**0.040**	**0.010**	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.050	0.50
4	***2022 Soil Investigation***																						
	P4-1	P4-1-1.0	7/13/2022	1.0	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	**0.037**	**0.14**	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
		P4-1-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P4-2	P4-2-1.0	7/13/2022	1.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P4-2-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	P4-3	P4-3-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P4-4	P4-4-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	Parcel 4 Current Receptor EPCs				0.025	0.025	0.025	0.025	0.025	0.25	0.025	**0.037**	**0.14**	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.050	0.50
Screening Criteria																							
				Residential Risk-Based Screening Levels[2]	0.039	0.086	0.3	0.0038	0.057	1.7	2.3	2.0	1.9	0.034	470	470 [3]	380	19	19 [4]	19 [4]	0.13	0.07	320	0.45
				Commercial/Industrial Risk-Based Screening Levels[2]	0.18	0.3	1.1	0.049	0.8	7.7	7.9	9.3	8.5	0.12	6000	6000 [3]	4100	200	200 [4]	200 [4]	0.63	0.33	3400	1.6

Notes:

bold = Analyte detected above the reporting limit

1. Soil samples collected by GSI Environmental Inc.and analyzed by Enthalpy Analytical for organochlorine pesticides using United States Environmental Protection Agency (USEPA) Method 8081A.
2. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).
3. The residential and commercial/industrial soil DTSC screening levels for endosulfan were used as surrogate SLs for endosulfan II.
4. The residential and commercial/industrial soil DTSC screening levels for endrin were used as surrogate SLs for endrin aldehyde and endrin ketone.

Abbreviations:

< = Analyte not detected above the reporting limit shown
bgs = Below ground surface
C = Presence confirmed, but the Relative Percent Difference (RPD) between columns exceeds 40%
DUP = Duplicate sample
EPC = exposure point concentration
J = The detected result is an estimate
mg/kg = Milligrams per kilogram

References:

DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.
United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

APPENDIX B TABLE B-4: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR TOTAL PETROLEUM HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Total Petroleum Hydrocarbons	
					TPH-d	TPH-mo
				feet bgs	mg/kg	
1	***2022 Soil Investigation***					
	P1-1	P1-1-1.0	7/13/2022	1.0	<10	<20
		P1-1-2.5	7/13/2022	2.5	<10	<20
		P1-1-4.0	7/13/2022	4.0	<10	<20
	P1-2	P1-2-2.5	7/13/2022	2.5	<10	<20
	P1-3	P1-3-1.0	7/13/2022	1.0	**14**	**22**
	2024 Soil Investigation					
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<10	<20
		P1-A7-2.5	1/11/2024	2.5	<10	<20
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<10	<20
		P1-A8-1.0(DUP)	1/11/2024	1.0	**11**	<20
		P1-A8-2.5	1/11/2024	2.5	<9.9	<20
	Parcel 1 Current Receptor EPCs				**14**	**22**
2	***2022 Soil Investigation***					
	P2-1	P2-1-2.5	7/13/2022	2.5	<10	<20
	P2-2	P2-2-1.0	7/13/2022	1.0	**20**	**51**
	P2-3	P2-3-1.0	7/13/2022	1.0	**25**	**61**
		P2-3-2.5	7/13/2022	2.5	<10	<20
	P2-4	P2-4-1.0	7/13/2022	1.0	**47**	**89**
	Parcel 2 Current Receptor EPCs				**47**	**89**
3	***2022 Soil Investigation***					
	P3-1	P3-1-2.5	7/13/2022	2.5	<10	<20
	P3-2	P3-2-1.0	7/13/2022	1.0	<50	<100
		P3-2-2.5	7/13/2022	2.5	<10	<20
	P3-3	P3-3-1.0	7/13/2022	1.0	**120**	**87**
		P3-3-2.5	7/13/2022	2.5	**160**	**490**
	P3-4	P3-4-1.0	7/13/2022	1.0	**65**	**210**
	Parcel 3 Current Receptor EPCs				**160**	**490**
4	***2022 Soil Investigation***					
	P4-1	P4-1-1.0	7/13/2022	1.0	<50	<100
		P4-1-2.5	7/13/2022	2.5	<10	<20
	P4-2	P4-2-1.0	7/13/2022	1.0	<10	<20
		P4-2-2.5	7/13/2022	2.5	<10	<20
	P4-3	P4-3-2.5	7/13/2022	2.5	<10	<20
	P4-4	P4-4-1.0	7/13/2022	1.0	**45**	**76**
	Parcel 4 Current Receptor EPCs				**45**	**76**
Screening Criteria						
				Residential Risk-Based Screening Levels [2]	260	12,000
				Commercial/Industrial Risk-Based Screening Levels[2]	1,200	180,000

Notes:

bold = Analyte detected above the reporting limit

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical for TPH using United States Environmental Protection Agency (USEPA) Method 8015M.

2. Direct exposure environmental screening levels for human health published by the San Francisco Bay Regional Water Quality Control Board (Water Board, 2019).

Abbreviations:

< = Analyte not detected above the reporting limit shown
bgs = Below ground surface
DUP = Duplicate sample
EPC = exposure point concentration
mg/kg = Milligrams per kilogram
TPH = Total petroleum hydrocarbons
TPHd = TPH quantified as diesel (diesel range orgnics [DRO] C10-C28)
TPHmo = TPH quantified as motor oil (oil range organics [ORO] C28-C44)

References:

San Francisco Bay Regional Water Quality Control Board (Water Board), 2019, Environmental Screening Levels, Summary Tables, January (Rev. 2).

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APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
1	***2022 Soil Investigation***																					
	P1-1	P1-1-1.0	7/13/2022	1.0	No	**0.91**	**9.3**	**180**	**0.56**	<0.50	**62**	**15**	**37**	**34**	**0.30**	**0.78**	**57**	**1.2**	<0.50	<0.50	**72**	**100**
		P1-1-2.5	7/13/2022	2.5	Yes	<0.5	**8.4**	**200**	**0.65**	<0.5	**69**	**17**	**33**	**9**	<0.050	**0.9**	**67**	**1.3**	<0.5	<0.5	**74**	**72**
		P1-1-4.0	7/13/2022	4.0	Yes	<0.5	**6.1**	**180**	**0.63**	<0.5	**70**	**12**	**29**	**6.8**	<0.050	<0.5	**58**	**1.2**	<0.5	<0.5	**71**	**59**
	P1-2	P1-2-1.0	7/13/2022	1.0	No	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-2-2.5	7/13/2022	2.5	Yes	**1.3**	**12**	**300**	**0.73**	<0.5	**37**	**16**	**28**	**13**	**0.079**	**1.3**	**53**	**1.3**	<0.5	<0.5	**40**	**66**
		P1-2-4.0	7/13/2022	4.0	Yes	--	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-3	P1-3-1.0	7/13/2022	1.0	No	**2.7**	**83**	**190**	**0.5**	<0.5	**33**	**19**	**32**	**34**	**0.23**	**1.0**	**48**	**1.1**	<0.5	<0.5	**42**	**74**
		P1-3-2.5	7/13/2022	2.5	No	--	**35**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-3-4.0	7/13/2022	4.0	No	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																					
	P1-A2	P1-A2-2.0	1/11/2024	2.0	Yes	--	**8.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A2-3.0	1/11/2024	3.0	Yes	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A3	P1-A3-2.0	1/11/2024	2.0	Yes	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A3-3.0	1/11/2024	3.0	Yes	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A4	P1-A4-2.0	1/11/2024	2.0	Yes	--	**4.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A4-3.0	1/11/2024	3.0	Yes	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A5	P1-A5-2.0	1/11/2024	2.0	Yes	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A5-3.0	1/11/2024	3.0	Yes	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A6	P1-A6-2.0	1/11/2024	2.0	Yes	--	**5.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A6-3.0	1/11/2024	3.0	Yes	--	**5.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A7	P1-A7-1.0	1/11/2024	1.0	Yes	<2.9 UJ	**8.0**	**160**	<0.48	<0.48	**50**	**12**	**31**	**34**	<0.16	<1.1	**45**	<2.9	<0.48	<2.9	**58**	**81**
		P1-A7-2.5	1/11/2024	2.5	Yes	<2.9 UJ	**4.1**	**130**	<0.49	<0.49	**46**	**11**	**20**	**6**	<0.16	<1.1	**41**	<2.9	<0.49	<2.9	**55**	**40**
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	Yes	<2.9 UJ	**6.1**	**170**	<0.48	<0.48	**48**	**14**	**33**	**47**	<0.16	<1	**46**	<2.9	<0.48	<2.9	**58**	**95**
		P1-A8-1.0	1/11/2024	1.0	Yes	<2.9 UJ	**7.5**	**200**	**0.49**	**0.71**	**47**	**23**	**35**	**54**	<0.16	<1	**52**	<2.9	<0.48	<2.9	**63**	**100**
		P1-A8-2.5	1/11/2024	2.5	Yes	<2.9 UJ	**5.5**	**140**	<0.49	<0.49	**40**	**11**	**21**	**9.5**	<0.16	**1.5**	**40**	<2.9	**0.51**	<2.9	**57**	**41**
	P1-A9	P1-A9-2.0	1/11/2024	2.0	Yes	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A9-3.0	1/11/2024	3.0	Yes	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A10	P1-A10-2.0	1/11/2024	2.0	Yes	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A10-3.0	1/11/2024	3.0	Yes	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B2	P1-B2-2.0	1/11/2024	2.0	No	--	**40**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B2-3.0	1/11/2024	3.0	Yes	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B3	P1-B3-2.0	1/11/2024	2.0	No	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B3-3.0	1/11/2024	3.0	Yes	--	**7.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B4	P1-B4-2.0	1/11/2024	2.0	No	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-3.0	1/11/2024	3.0	No	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-4.0	1/11/2024	4.0	Yes	--	**9.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B5	P1-B5-2.0	1/11/2024	2.0	No	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-3.0	1/11/2024	3.0	No	--	**150**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-4.0	1/11/2024	4.0	No	--	**130**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5D-5.0	4/19/2024	5.0	Yes	--	**5.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		DUP-2-240419	4/19/2024	5.0	Yes	--	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
1	P1-B6	P1-B6-2.0	1/11/2024	2.0	No	--	**41**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-3.0	1/11/2024	3.0	No	--	**110**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-4.0	1/11/2024	4.0	No	--	**100**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-5.0	4/19/2024	5.0	No	--	**23**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-6.0	4/19/2024	6.0	Yes	--	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B7	P1-B7-2.0	1/11/2024	2.0	No	--	**32**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-3.0	1/11/2024	3.0	No	--	**16**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-4.0	1/11/2024	4.0	Yes	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Parcel 1 Future Receptor EPCs					2.9	**10**	**200**	**0.65**	**0.71**	**70**	**23**	**35**	**54**	0.16	**1.5**	**67**	**1.3**	**0.51**	2.9	**74**	**100**
2	***2022 Soil Investigation***																					
	P2-1	P2-1-1.0	7/13/2022	1.0	No	--	**28**	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--
		P2-1-2.5	7/13/2022	2.5	No	**1.4**	**26**	**150**	<0.5	<0.5	**46**	**12**	**29**	**63**	**0.65**	<0.5	**37**	**0.93**	<0.5	<0.5	**55**	**180**
		P2-1-4.0	7/13/2022	4.0	No	--	**24**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-2	P2-2-1.0	7/13/2022	1.0	No	**1.8**	**37**	**170**	<0.5	<0.5	**34**	**12**	**42**	**200**	**0.43**	<0.5	**38**	**1.6**	<0.5	<0.5	**73**	**150**
		P2-2-2.5	7/13/2022	1.0	No	--	**41**	--	--	--	--	--	--	**10**	--	--	--	--	--	--	--	--
		P2-2-4.0	7/13/2022	4.0	Yes	--	**3.4**	--	--	--	--	--	--	**6.9**	--	--	--	--	--	--	--	--
	P2-3	P2-3-1.0	7/13/2022	1.0	No	**1.5**	**32**	**180**	<0.5	<0.5	**59**	**14**	**81**	**140**	**0.48**	**0.72**	**61**	**1.1**	<0.5	<0.5	**53**	**190**
		P2-3-2.5	7/13/2022	2.5	No	<0.5	**6.7**	**190**	**0.73**	<0.5	**73**	**13**	**32**	**7.6**	<0.050	<0.5	**55**	**1.2**	<0.5	<0.5	**71**	**61**
	P2-4	P2-4-1.0	7/13/2022	1.0	No	**3.6**	**220**	**280**	**0.57**	<0.5	**46**	**9.8**	**60**	**56**	**2.1**	<0.5	**83**	**0.91**	<0.5	<0.5	**34**	**62**
		P2-4-2.5	7/13/2022	2.5	No	--	**8.9**	--	--	--	--	--	--	**12**	<0.16 R	--	--	--	--	--	--	--
		P2-4-4.0	7/13/2022	4.0	Yes	--	**4.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																					
	P2-A4	P2-A4-2.0	1/8/2024	2.0	Yes	--	**4.7**	--	--	--	--	--	--	**6.6**	<0.16	--	--	--	--	--	--	--
		P2-A4-3.0	1/8/2024	3.0	Yes	--	**4.0**	--	--	--	--	--	--	**5.6**	<0.15	--	--	--	--	--	--	--
	P2-A5	P2-A5-2.0	1/8/2024	2.0	Yes	--	**4.4**	--	--	--	--	--	--	**6.0**	<0.16	--	--	--	--	--	--	--
		P2-A5-3.0	1/8/2024	3.0	Yes	--	**4.1**	--	--	--	--	--	--	**8.3**	<0.16	--	--	--	--	--	--	--
	P2-A6	P2-A6-2.0	1/8/2024	2.0	Yes	--	**6.1**	--	--	--	--	--	--	**71**	<0.15	--	--	--	--	--	--	--
		P2-A6-3.0	1/8/2024	3.0	Yes	--	**5.1**	--	--	--	--	--	--	**12**	<0.14	--	--	--	--	--	--	--
	P2-A7	P2-A7-2.0	1/8/2024	2.0	Yes	--	**5.9**	--	--	--	--	--	--	**12**	<0.15	--	--	--	--	--	--	--
		P2-A7-3.0	1/8/2024	3.0	Yes	--	**4.2**	--	--	--	--	--	--	**6.3**	<0.15	--	--	--	--	--	--	--
	P2-A8	P2-A8-2.0	1/8/2024	2.0	No	--	**9.6**	--	--	--	--	--	--	**110**	<0.15	--	--	--	--	--	--	--
		P2-A8-3.0	1/8/2024	3.0	Yes	--	**4.6**	--	--	--	--	--	--	**5.3**	<0.15	--	--	--	--	--	--	--
	P2-A9	P2-A9-2.0	1/8/2024	2.0	No	--	**9.9**	--	--	--	--	--	--	**44**	<0.14	--	--	--	--	--	--	--
		P2-A9-2.0(DUP)	1/8/2024	2.0	No	--	**11**	--	--	--	--	--	--	**94**	<0.16	--	--	--	--	--	--	--
		P2-A9-3.0	1/8/2024	3.0	Yes	--	**4.6**	--	--	--	--	--	--	**5.3**	<0.16	--	--	--	--	--	--	--
	P2-A10	P2-A10-2.0	1/8/2024	2.0	Yes	--	**6.2**	--	--	--	--	--	--	**35**	**0.46**	--	--	--	--	--	--	--
		P2-A10-3.0	1/8/2024	3.0	Yes	--	**4.4**	--	--	--	--	--	--	**5.3**	<0.16	--	--	--	--	--	--	--
	P2-B1	P2-B1-2.0	1/8/2024	2.0	No	--	**36**	--	--	--	--	--	--	**180**	**0.42**	--	--	--	--	--	--	--
		P2-B1-3.0(DUP)	1/8/2024	3.0	No	--	**20**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
		P2-B1-3.0	1/8/2024	3.0	No	--	**33**	--	--	--	--	--	--	**9.2**	<0.15	--	--	--	--	--	--	--
		P2-B1-4.0	1/8/2024	4.0	No	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B1D-5.0	4/19/2024	5.0	Yes	--	**4.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
2	P2-1D	P2-1D-5.0	1/8/2024	5.0	No	--	**14**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-1D-6.0	1/8/2024	6.0	Yes	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B3	P2-B3-2.0	1/8/2024	2.0	No	--	**21**	--	--	--	--	--	--	**6.2**	<0.14	--	--	--	--	--	--	--
		P2-B3-3.0	1/8/2024	3.0	No	--	**13**	--	--	--	--	--	--	**13**	<0.14	--	--	--	--	--	--	--
		P2-B3-4.0	1/8/2024	4.0	Yes	--	**5.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B4	P2-B4-2.0	1/8/2024	2.0	No	--	**24**	--	--	--	--	--	--	**51**	**0.27**	--	--	--	--	--	--	--
		P2-B4-3.0	1/8/2024	3.0	No	--	**53**	--	--	--	--	--	--	**7.3**	<0.14	--	--	--	--	--	--	--
		P2-B4-4.0	1/8/2024	4.0	No	--	**74**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B4D-5.0	4/19/2024	5.0	Yes	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B5	P2-B5-2.0	1/8/2024	2.0	No	--	**120**	--	--	--	--	--	--	**24**	**0.27**	--	--	--	--	--	--	--
		P2-B5-3.0	1/8/2024	3.0	No	--	**23**	--	--	--	--	--	--	**10**	<0.14	--	--	--	--	--	--	--
		P2-B5-4.0	1/8/2024	4.0	Yes	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B6	P2-B6-2.0	1/8/2024	2.0	No	--	**310**	--	--	--	--	--	--	**66**	**0.49**	--	--	--	--	--	--	--
		P2-B6-3.0	1/8/2024	3.0	No	--	**53**	--	--	--	--	--	--	**14**	<0.14	--	--	--	--	--	--	--
		P2-B6-4.0	1/8/2024	4.0	No	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6-4.0(DUP)	1/8/2024	4.0	No	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6D-5.0	4/19/2024	5.0	Yes	--	**3.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B7	P2-B7-2.0	1/8/2024	2.0	No	--	**210**	--	--	--	--	--	--	**78**	**11**	--	--	--	--	--	--	--
		P2-B7-3.0	1/8/2024	3.0	No	--	**72**	--	--	--	--	--	--	**14**	**0.32**	--	--	--	--	--	--	--
		P2-B7-4.0	1/8/2024	4.0	No	--	**38**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B7D-5.0	4/19/2024	5.0	Yes	--	**6.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B8	P2-B8-2.0	1/8/2024	2.0	No	--	**100**	--	--	--	--	--	--	**68**	**0.5**	--	--	--	--	--	--	--
		P2-B8-3.0	1/8/2024	3.0	No	--	**91**	--	--	--	--	--	--	**16**	<0.14	--	--	--	--	--	--	--
		P2-B8-4.0	1/8/2024	4.0	Yes	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B9	P2-B9-2.0	1/8/2024	2.0	No	--	**19**	--	--	--	--	--	--	**24**	**0.24**	--	--	--	--	--	--	--
		P2-B9-3.0	1/8/2024	3.0	No	--	**59**	--	--	--	--	--	--	**25**	**0.18**	--	--	--	--	--	--	--
		P2-B9-4.0	1/8/2024	4.0	No	--	**29**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-5.0	4/19/2024	5.0	No	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-6.0	4/19/2024	6.0	Yes	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B10	P2-B10-2.0	1/8/2024	2.0	No	--	**130**	--	--	--	--	--	--	**140**	**0.39**	--	--	--	--	--	--	--
		P2-B10-3.0	1/8/2024	3.0	No	--	**46**	--	--	--	--	--	--	**87**	**0.36**	--	--	--	--	--	--	--
		P2-B10-4.0	1/8/2024	4.0	No	--	**33**	--	--	--	--	--	--	**14**	--	--	--	--	--	--	--	--
		P2-B10D-5.0	4/19/2024	5.0	No	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B10D-6.0	4/19/2024	6.0	Yes	--	**2.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Parcel 2 Future Receptor EPCs					--	**10**	--	--	--	--	--	--	**71**	**0.46**	--	--	--	--	--	--	--
3	***2022 Soil Investigation***																					
	P3-1	P3-1-1.0	7/14/2022	1.0	No	--	**63**	--	--	--	--	--	--	**15**	<0.15 R	--	--	--	--	--	--	--
		P3-1-2.5	7/14/2022	2.5	No	<2.7	**6.5**	**190**	**0.56**	**0.59**	**46**	**10**	**26**	**11**	<0.17	<0.91	**45**	<2.7	<0.45	<2.7	**43**	**56**
	P3-2	P3-2-1.0	7/14/2022	1.0	No	<2.8	**120**	**66**	<0.47	**0.65**	**35**	**7.3**	**42**	**66**	**1.7**	<0.94	**41**	<2.8	<0.47	<2.8	**35**	**96**
		P3-2-2.5	7/14/2022	2.5	No	<2.7 R	**67**	**130**	<0.45	**0.57**	**56**	**13**	**60**	**22**	**0.96**	<0.89	**65**	<2.7	<0.45	<2.7	**39**	**110**
		P3-2-4.0	7/14/2022	4.0	No	--	**6.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-3	P3-3-1.0	7/14/2022	1.0	No	<2.7	**12**	**180**	<0.44	**0.72**	**41**	**9.5**	**32**	**84**	**0.21**	<0.88	**39**	<2.7	<0.44	<2.7	**41**	**150**
		P3-3-2.5	7/14/2022	2.5	No	<3.0 UJ	**7.8**	**160**	<0.50	**0.69**	**37**	**12**	**30**	**68**	**0.20**	<0.99	**40**	<3.0	**0.56**	<3.0	**36**	**140**

GSI ENVIRONMENTAL

APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
3	P3-4	P3-4-1.0	7/14/2022	1.0	No	<2.8	**13**	**130**	<0.47	**0.57**	**45**	**15**	**34**	**43**	<0.15	<0.94	**45**	<2.8	<0.47	<2.8	**50**	**73**
		P3-4-2.5	7/14/2022	2.5	No	--	**47**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4-4.0	7/14/2022	4.0	No	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																					
	P3-A1	P3-A1-2.0	1/9/2024	2.0	No	--	**12**	--	--	--	--	--	--	**94**	**16 J**	--	--	--	--	--	--	--
		P3-A1-3.0	1/9/2024	3.0	No	--	**6.8**	--	--	--	--	--	--	**22**	**4.5 J**	--	--	--	--	--	--	--
		P3-A1-4.0	1/9/2024	4.0	Yes	--	**4.5**	--	--	--	--	--	--	--	**0.52**	--	--	--	--	--	--	--
	P3-A2	P3-A2-2.0	1/9/2024	2.0	No	--	**6.7**	--	--	--	--	--	--	**17**	**0.21 J**	--	--	--	--	--	--	--
		P3-A2-3.0	1/9/2024	3.0	No	--	**13**	--	--	--	--	--	--	**46**	**0.47 J**	--	--	--	--	--	--	--
		P3-A2-4.0	1/9/2024	4.0	Yes	--	**5.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-A3	P3-A3-2.0	1/9/2024	2.0	Yes	--	**7.8**	--	--	--	--	--	--	**21**	<0.15 UJ	--	--	--	--	--	--	--
		P3-A3-3.0	1/9/2024	3.0	Yes	--	**6.6**	--	--	--	--	--	--	**18**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A4	P3-A4-2.0	1/9/2024	2.0		--	**21**	--	--	--	--	--	--	**92**	**0.32 J**	--	--	--	--	--	--	--
		P3-A4-3.0	1/9/2024	3.0	Yes	--	**3.1**	--	--	--	--	--	--	**6.4**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A5	P3-A5-2.0	1/9/2024	2.0	No	--	**15**	--	--	--	--	--	--	**32**	**0.17 J**	--	--	--	--	--	--	--
		P3-A5-3.0	1/9/2024	3.0	Yes	--	**8.6**	--	--	--	--	--	--	**60**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A6	P3-A6-2.0	1/9/2024	2.0	Yes	--	**6.1**	--	--	--	--	--	--	**22**	<0.14 UJ	--	--	--	--	--	--	--
		P3-A6-3.0	1/9/2024	3.0	Yes	--	**3.8**	--	--	--	--	--	--	**6.7**	<0.16 UJ	--	--	--	--	--	--	--
	P3-A7	P3-A7-2.0	1/9/2024	2.0	No	--	**33**	--	--	--	--	--	--	**99**	**0.65**	--	--	--	--	--	--	--
		P3-A7-3.0	1/9/2024	3.0	No	--	**35**	--	--	--	--	--	--	**78**	**0.36**	--	--	--	--	--	--	--
		P3-A7-4.0*	1/9/2024	4.0	Yes	--	**6.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-A7-4.0	1/9/2024	4.0	Yes	--	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-A8	P3-A8-2.0	1/9/2024	2.0	Yes	--	**5.6**	--	--	--	--	--	--	**9.0**	<0.14	--	--	--	--	--	--	--
		P3-A8-3.0	1/9/2024	3.0	Yes	--	**10**	--	--	--	--	--	--	**16**	<0.16	--	--	--	--	--	--	--
	P3-A9	P3-A9-2.0	1/9/2024	2.0	No	--	**15**	--	--	--	--	--	--	**88**	<0.16	--	--	--	--	--	--	--
		P3-A9-2.0(DUP)	1/9/2024	2.0	No	--	**6.1**	--	--	--	--	--	--	**44**	<0.15	--	--	--	--	--	--	--
		P3-A9-3.0	1/9/2024	3.0	Yes	--	**3.6**	--	--	--	--	--	--	**7.2**	<0.15	--	--	--	--	--	--	--
	P3-A10	P3-A10-2.0	1/9/2024	2.0	Yes	--	**10**	--	--	--	--	--	--	**25**	<0.16	--	--	--	--	--	--	--
		P3-A10-3.0	1/9/2024	3.0	Yes	--	**11**	--	--	--	--	--	--	**32**	<0.17	--	--	--	--	--	--	--
	P3-B1	P3-B1-2.0	1/9/2024	2.0	No	--	**69**	--	--	--	--	--	--	**98**	**0.5**	--	--	--	--	--	--	--
		P3-B1-3.0	1/9/2024	3.0	No	--	**39**	--	--	--	--	--	--	**75**	**0.32**	--	--	--	--	--	--	--
		P3-B1-4.0	1/9/2024	4.0	No	--	**16**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-5.0	4/18/2024	5.0	No	--	**90**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-6.0	4/18/2024	6.0	Yes	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B2	P3-B2-2.0	1/9/2024	2.0	No	--	**44**	--	--	--	--	--	--	**50**	**0.38**	--	--	--	--	--	--	--
		P3-B2-3.0	1/9/2024	3.0	No	--	**14**	--	--	--	--	--	--	**44**	**0.35**	--	--	--	--	--	--	--
		P3-B2-3.0(DUP)	1/9/2024	3.0	No	--	**12**	--	--	--	--	--	--	**56**	**0.29**	--	--	--	--	--	--	--
		P3-B2-4.0	1/9/2024	4.0	No	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B2D-5.0	4/18/2024	5.0	Yes	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B3	P3-B3-2.0	1/9/2024	2.0	No	--	**32**	--	--	--	--	--	--	**59**	**0.25**	--	--	--	--	--	--	--
		P3-B3-3.0	1/9/2024	3.0	No	--	**18**	--	--	--	--	--	--	**38**	**0.28**	--	--	--	--	--	--	--
		P3-B3-4.0	1/9/2024	4.0	No	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B3D-5.0	4/18/2024	5.0	Yes	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
3	P3-B4	P3-B4-2.0	1/9/2024	2.0	No	--	**35**	--	--	--	--	--	--	**72**	**0.85**	--	--	--	--	--	--	--
		P3-B4-3.0	1/9/2024	3.0	No	--	**88**	--	--	--	--	--	--	**140**	**0.32**	--	--	--	--	--	--	--
		P3-B4-4.0	1/9/2024	4.0	No	--	**38**	--	--	--	--	--	--	**45**	--	--	--	--	--	--	--	--
		P3-B4D-5.0	4/18/2024	5.0	Yes	--	**8.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B5	P3-B5-2.0	1/9/2024	2.0	No	--	**85**	--	--	--	--	--	--	**71**	**0.48**	--	--	--	--	--	--	--
		P3-B5-3.0	1/9/2024	3.0	No	--	**120**	--	--	--	--	--	--	**27**	**0.17**	--	--	--	--	--	--	--
		P3-B5-4.0	1/9/2024	4.0	No	--	**120**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B5D-5.0	4/18/2024	5.0	Yes	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B6	P3-B6-2.0	1/9/2024	2.0	No	--	**79**	--	--	--	--	--	--	**94**	**0.44**	--	--	--	--	--	--	--
		P3-B6-3.0	1/9/2024	3.0	No	--	**28**	--	--	--	--	--	--	**64**	**0.27 J**	--	--	--	--	--	--	--
		P3-B6-4.0	1/9/2024	4.0	No	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B6D-5.0	4/18/2024	5.0	Yes	--	**7.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B7	P3-B7-2.0	1/9/2024	2.0	No	--	**73**	--	--	--	--	--	--	**98**	**0.40 J**	--	--	--	--	--	--	--
		P3-B7-3.0	1/9/2024	3.0	No	--	**38**	--	--	--	--	--	--	**52**	**0.68 J**	--	--	--	--	--	--	--
		P3-B7-4.0	1/9/2024	4.0	No	--	**21**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-5.0	4/18/2024	5.0	No	--	**51**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-6.0	4/18/2024	6.0	Yes	--	**4.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B8	P3-B8-2.0	1/9/2024	2.0	No	--	**23**	--	--	--	--	--	--	**94**	**0.38 J**	--	--	--	--	--	--	--
		P3-B8-3.0	1/9/2024	3.0	No	--	**57**	--	--	--	--	--	--	**120**	**0.80 J**	--	--	--	--	--	--	--
		P3-B8-4.0	1/9/2024	4.0	No	--	**120**	--	--	--	--	--	--	**19**	--	--	--	--	--	--	--	--
		P3-B8D-5.0	4/18/2024	5.0	Yes	--	**6.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-4D	P3-4D-5.0	1/9/2024	5.0	Yes	--	**6.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4D-6.0	1/9/2024	6.0	Yes	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B9	P3-B9-2.0	1/9/2024	2.0	No	--	**67**	--	--	--	--	--	--	**94**	**0.59 J**	--	--	--	--	--	--	--
		P3-B9-3.0	1/9/2024	3.0	No	--	**53**	--	--	--	--	--	--	**77**	**0.45 J**	--	--	--	--	--	--	--
		P3-B9-4.0	1/9/2024	4.0	No	--	**17**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B9D-5.0	4/18/2024	5.0	Yes	--	**9.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B10	P3-B10-2.0	1/9/2024	2.0	No	--	**13**	--	--	--	--	--	--	**33**	<0.15 UJ	--	--	--	--	--	--	--
		P3-B10-3.0	1/9/2024	3.0	No	--	**23**	--	--	--	--	--	--	**45**	<0.16	--	--	--	--	--	--	--
		P3-B10-4.0	1/9/2024	4.0	Yes	--	**3.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T1	P3-T1-1.0	4/18/2024	1.0	No	--	**46**	--	--	--	--	--	--	**50 J**	**0.28**	--	--	--	--	--	--	--
		DUP-3-240418	4/18/2024	1.0	No	--	**27**	--	--	--	--	--	--	**46**	**0.20**	--	--	--	--	--	--	--
		P3-T1-1.5	4/18/2024	1.5	No	--	**7.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-T1-2.0	4/18/2024	2.0	Yes	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T2	P3-T2-1.0	4/18/2024	1.0	No	--	**5.9**	--	--	--	--	--	--	**52**	**0.16**	--	--	--	--	--	--	--
	P3-T3	P3-T3-1.0	4/18/2024	1.0	No	--	**7.5**	--	--	--	--	--	--	**43**	<0.16	--	--	--	--	--	--	--
	P3-T4	P3-T4-1.0	4/18/2024	1.0	No	--	**11**	--	--	--	--	--	--	**490**	**0.17**	--	--	--	--	--	--	--
		P3-T4-1.5	4/18/2024	1.5	No	--	--	--	--	--	--	--	--	**88**	--	--	--	--	--	--	--	--
		P3-T4-2.0	4/18/2024	2.0	No	--	--	--	--	--	--	--	--	**170**	--	--	--	--	--	--	--	--
	Parcel 3 Future Receptor EPCs					--	**11**	--	--	--	--	--	--	**60**	**0.52**	--	--	--	--	--	--	--

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APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]																
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
4	***2022 Soil Investigation***																					
	P4-1	P4-1-1.0	7/14/2022	1.0	No	<3.0	**140**	**190**	<0.50	**1.9**	**75**	**14**	**81**	**280**	**2.1**	<1.0	**120**	<3.0	<0.50	<3.0	**37**	**440**
		P4-1-2.5	7/14/2022	2.5	No	<2.8	**88**	**160**	<0.47	**0.47**	**26**	**17**	**28**	**21**	**0.25**	<0.93	**47**	<2.8	<0.47	<2.8	**24**	**60**
		P4-1-4.0	7/14/2022	4.0	Yes	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-2	P4-2-1.0	7/14/2022	1.0	No	<2.8	**23**	**100**	<0.46	<0.46	**19**	**9.6**	**23**	**13**	<0.16	<0.92	**31**	<2.8	<0.46	<2.8	**23**	**44**
		P4-2-2.5	7/14/2022	2.5	No	<3.1	**4.2**	**200**	<0.52	**0.55**	**44**	**14**	**27**	**11**	<0.16	<1.0	**21**	<3.1	<0.52	<3.1	**42**	**44**
	P4-3	P4-3-1.0	7/14/2022	1.0	No	--	**29**	--	--	--	--	--	--	**22**	<0.16 R	--	--	--	--	--	--	--
		P4-3-2.5	7/14/2022	2.5	No	<2.7	**8.2**	**180**	<0.45	<0.45	**25**	**9.8**	**21**	**12**	<0.14	<0.91	**34**	<2.7	<0.45	<2.7	**26**	**62**
	P4-4	P4-4-1.0	7/14/2022	1.0	No	<2.7	**51**	**85**	<0.45	<0.45	**16**	**5.3**	**36**	**42**	**0.81**	<0.89	**20**	<2.7	<0.45	<2.7	**24**	**190**
		P4-4-2.5	7/14/2022	2.5	No	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P4-4-4.0	7/14/2022	4.0	Yes	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																					
	P4-A1	P4-A1-2.0	1/10/2024	2.0	No	--	**21**	--	--	--	--	--	--	**53**	**0.19**	--	--	--	--	--	--	--
		P4-A1-3.0	1/10/2024	3.0	Yes	--	**4.5**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A2	P4-A2-2.0	1/10/2024	2.0	No	--	**16**	--	--	--	--	--	--	**46**	<0.14	--	--	--	--	--	--	--
		P4-A2-3.0	1/10/2024	3.0	Yes	--	**3.3**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A3	P4-A3-2.0	1/10/2024	2.0	Yes	--	**5.1**	--	--	--	--	--	--	**5.7**	<0.16	--	--	--	--	--	--	--
		P4-A3-3.0	1/10/2024	3.0	Yes	--	**4.6**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-A4	P4-A4-2.0	1/10/2024	2.0	Yes	--	**5.0**	--	--	--	--	--	--	**7.5**	<0.16	--	--	--	--	--	--	--
		P4-A4-3.0	1/10/2024	3.0	Yes	--	**2.8**	--	--	--	--	--	--	**5.8**	<0.14	--	--	--	--	--	--	--
	P4-A5	P4-A5-2.0	1/10/2024	2.0	Yes	--	**6.9**	--	--	--	--	--	--	**9.1**	<0.15	--	--	--	--	--	--	--
		P4-A5-3.0	1/10/2024	3.0	Yes	--	**4.5**	--	--	--	--	--	--	**7.6**	<0.16	--	--	--	--	--	--	--
	P4-A6	P4-A6-2.0	1/12/2024	2.0	Yes	--	**8.3**	--	--	--	--	--	--	**23**	<0.14	--	--	--	--	--	--	--
		P4-A6-3.0	1/12/2024	3.0	Yes	--	**4.5**	--	--	--	--	--	--	**5.3**	<0.14	--	--	--	--	--	--	--
	P4-A7	P4-A7-2.0	1/12/2024	2.0	No	--	**78**	--	--	--	--	--	--	**31**	**0.37**	--	--	--	--	--	--	--
		P4-A7-3.0	1/12/2024	3.0	Yes	--	**8.1**	--	--	--	--	--	--	**5.3**	<0.17	--	--	--	--	--	--	--
	P4-A8	P4-A8-2.0	1/12/2024	2.0	No	--	**110**	--	--	--	--	--	--	**17**	<0.16	--	--	--	--	--	--	--
		P4-A8-3.0	1/12/2024	3.0	No	--	**85**	--	--	--	--	--	--	**23**	**0.22**	--	--	--	--	--	--	--
		P4-A8-3.0(DUP)	1/12/2024	3.0	No	--	**69**	--	--	--	--	--	--	**20**	**0.18**	--	--	--	--	--	--	--
		P4-A8-4.0	1/12/2024	4.0	Yes	--	**4.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-A9	P4-A9-2.0	1/12/2024	2.0	Yes	--	**7.0**	--	--	--	--	--	--	**6.1**	<0.16	--	--	--	--	--	--	--
		P4-A9-3.0	1/12/2024	3.0	Yes	--	**5.0**	--	--	--	--	--	--	**5.8**	<0.16	--	--	--	--	--	--	--
	P4-B2	P4-B2-2.0	1/10/2024	2.0	No	--	**63**	--	--	--	--	--	--	**15**	<0.16	--	--	--	--	--	--	--
		P4-B2-3.0	1/10/2024	3.0	Yes	--	**11**	--	--	--	--	--	--	**7.2**	<0.15	--	--	--	--	--	--	--
	P4-B3	P4-B3-2.0	1/10/2024	2.0	No	--	**68**	--	--	--	--	--	--	**10**	<0.15	--	--	--	--	--	--	--
		P4-B3-3.0	1/10/2024	3.0	Yes	--	**8.1**	--	--	--	--	--	--	**6.3**	<0.14	--	--	--	--	--	--	--
	P4-B4	P4-B4-2.0	1/10/2024	2.0	No	--	**120**	--	--	--	--	--	--	**14**	<0.16	--	--	--	--	--	--	--
		P4-B4-3.0	1/10/2024	3.0	No	--	**5.0**	--	--	--	--	--	--	**6.6**	**0.44**	--	--	--	--	--	--	--
	P4-B5	P4-B5-2.0	1/10/2024	2.0	No	--	**130**	--	--	--	--	--	--	**18**	**0.28**	--	--	--	--	--	--	--
		P4-B5-2.0(DUP)	1/10/2024	2.0	No	--	**89**	--	--	--	--	--	--	**12**	**0.29**	--	--	--	--	--	--	--
		P4-B5-3.0	1/10/2024	3.0	Yes	--	**2.2**	--	--	--	--	--	--	**5.4**	<0.14	--	--	--	--	--	--	--
	P4-B6	P4-B6-2.0	1/10/2024	2.0	No	--	**75**	--	--	--	--	--	--	**13**	<0.15	--	--	--	--	--	--	--
		P4-B6-3.0	1/10/2024	3.0	No	--	**30**	--	--	--	--	--	--	**9.4**	<0.16	--	--	--	--	--	--	--
		P4-B6-4.0	1/10/2024	4.0	Yes	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL

Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		*mg/kg*																
4	P4-B7	P4-B7-2.0	1/10/2024	2.0	No	--	**73**	--	--	--	--	--	--	**9.5**	<0.16	--	--	--	--	--	--	--
		P4-B7-3.0	1/10/2024	3.0	Yes	--	**6.1**	--	--	--	--	--	--	**6.0**	0.18	--	--	--	--	--	--	--
	P4-B8	P4-B8-2.0	1/10/2024	2.0	No	--	**38**	--	--	--	--	--	--	**12**	<0.15	--	--	--	--	--	--	--
		P4-B8-3.0	1/10/2024	3.0	Yes	--	**8.7**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-B9	P4-B9-2.0	1/10/2024	2.0	No	--	**16**	--	--	--	--	--	--	**13**	<0.16	--	--	--	--	--	--	--
		P4-B9-3.0	1/10/2024	3.0	No	--	**5.4**	--	--	--	--	--	--	**6.4**	<0.15	--	--	--	--	--	--	--
	P4-B10	P4-B10-2.0	1/10/2024	2.0	No	--	**21**	--	--	--	--	--	--	**180**	**4.8**	--	--	--	--	--	--	--
		P4-B10-3.0	1/10/2024	3.0	Yes	--	**6.1**	--	--	--	--	--	--	**7.2**	**0.41**	--	--	--	--	--	--	--
	Parcel 4 Future Receptor EPCs					--	**11**	--	--	--	--	--	--	**23**	**0.41**	--	--	--	--	--	--	--

Notes:

Green highlighted cells indicate the "left in place" soil COPC concentration was considered for selection as the EPC for future receptors (i.e., future resident and future construction worker) under the planned soil removal scenario. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization.

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical using United States Environmental Protection Agency (USEPA) Methods 6010B and 7471A (for mercury).
Select samples were analyzed by McCampbell Analytical for metals using USEPA Method 6020. Shaded concentrations exceed residential screening criteria.

Abbreviations:
< = Analyte not detected above the reporting limit shown
-- = Not analyzed
bgs = Below ground surface
bold = Analyte detected above the reporting limit
DUP = Duplicate sample
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
J = The value is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications.
mg/kg = Milligrams per kilogram
R = The data are rejected because the MS/MSD results are outside specifications or the holding time was exceeded
RAW = Remedial Action Work Plan
UJ = The non-detected data is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications

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APPENDIX B TABLE B-6. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Polycyclic Aromatic Hydrocarbons[1]																	
						Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs		mg/kg																		
1	***2022 Soil Investigation***																						
	P1-1	P1-1-1.0	7/13/2022	1.0	No	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
		P1-1-2.5	7/13/2022	2.5	Yes	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P1-1-4.0	7/13/2022	4.0	Yes	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	NA
	P1-2	P1-2-2.5	7/13/2022	2.5	Yes	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P1-3	P1-3-1.0	7/13/2022	1.00	No	**0.015**	<0.0099	**0.029**	**0.14**	**0.19**	**0.15**	**0.11**	**0.15**	**0.17**	**0.027**	**0.15**	<0.0099	**0.15**	**0.022**	**0.032**	**0.05**	**0.071**	**0.19**	**0.26**
	2024 Soil Investigation																						
	P1-A7	P1-A7-1.0	1/11/2024	1.0	No	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A7	P1-A7-2.5	1/11/2024	2.5	Yes	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	No	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	NA
	P1-A8	P1-A8-1.0	1/11/2024	1.0	No	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-2.5	1/11/2024	2.5	Yes	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	Parcel 1 Future Receptor EPCs					0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	NA
2	***2022 Soil Investigation***																						
	P2-1	P2-1-2.5	7/13/2022	2.5	No	<0.01	<0.01	<0.01	**0.018**	**0.028**	**0.024**	**0.025**	**0.02**	**0.022**	<0.01	**0.036**	<0.01	**0.028**	<0.01	<0.01	<0.01	**0.024**	**0.041**	**0.045**
	P2-2	P2-2-1.0	7/13/2022	1.0	No	<0.04	<0.04	<0.04	**0.13**	**0.24**	**0.18**	**0.21**	**0.18**	**0.14**	<0.04	**0.12**	<0.04	**0.25**	<0.04	<0.04	<0.04	<0.04	**0.16**	**0.34**
	P2-3	P2-3-1.0	7/13/2022	1.0	No	<0.04	<0.04	<0.04	**0.047**	**0.064**	**0.063**	**0.059**	**0.044**	**0.059**	<0.04	**0.061**	<0.04	**0.058**	<0.04	<0.04	<0.04	**0.051**	**0.068**	**0.12**
		P2-3-2.5	7/13/2022	2.5	Yes	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P2-4	P2-4-1.0	7/13/2022	1.0	No	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	Parcel 2 Future Receptor EPCs					0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	NA
3	***2022 Soil Investigation***																						
	P3-1	P3-1-2.5	7/13/2022	2.5	Yes	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P3-2	P3-2-1.0	7/13/2022	1.0	No	<0.1	<0.1	<0.1	**0.16**	**0.28**	**0.28**	**0.22**	**0.24**	**0.22**	<0.1	**0.16**	<0.1	**0.27**	<0.1	<0.1	<0.1	<0.1	**0.19**	**0.45**
		P3-2-2.5	7/13/2022	2.5	Yes	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
	P3-3	P3-3-1.0	7/13/2022	1.0	No	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	NA
		P3-3-2.5	7/13/2022	2.5	Yes	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	NA
	P3-4	P3-4-1.0	7/13/2022	1.0	No	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA
	2024 Soil Investigation																						
	P3-T1	P3-T1-1.0	4/18/2024	1.0	No	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
		DUP-3-240418	4/18/2024	1.0	No	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T2	P3-T2-1.0	4/18/2024	1.0	No	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T3	P3-T3-1.0	4/18/2024	1.0	No	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	NA
	P3-T4	P3-T4-1.0	4/18/2024	1.0	No	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
	Parcel 3 Future Receptor EPCs					0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	NA

GSI ENVIRONMENTAL

APPENDIX B TABLE B-6. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Polycyclic Aromatic Hydrocarbons[1]																		
						Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs		mg/kg																		
	2022 Soil Investigation																							
4	P4-1	P4-1-1.0	7/13/2022	1.0	No	<0.25	<0.25	<0.25	<0.25	**0.31**	**0.29**	**0.25**	**0.27**	**0.26**	<0.25	<0.25	<0.25	**0.29**	<0.25	<0.25	<0.25	<0.25	**0.26**	0.65
		P4-1-2.5	7/13/2022	2.5	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-2	P4-2-1.0	7/13/2022	1.0	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P4-2-2.5	7/13/2022	2.5	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-3	P4-3-1.0	7/13/2022	1.0	No	<0.01 R	<0.01 R	**0.014 J**	**0.036 J**	**0.066 J**	**0.042 J**	**0.036 J**	**0.047 J**	**0.045 J**	<0.01 R	**0.04 J**	<0.01 R	**0.039 J**	<0.01 R	<0.01 R	<0.01 R	**0.019 J**	**0.048 J**	**0.088**
		P4-3-2.5	7/13/2022	2.5	No	**0.012**	<0.01	**0.048**	**0.079**	**0.066**	**0.049**	**0.033**	**0.049**	**0.064**	<0.01	**0.17**	**0.021**	**0.042**	<0.01	<0.01	<0.01	**0.21**	**0.16**	**0.094**
	P4-4	P4-4-1.0	7/13/2022	1.0	No	<0.2	<0.2	<0.2	**1.7**	**3.5**	**2.4**	**2.3**	**2.4**	**1.8**	**0.54**	**1.1**	<0.2	**3.1**	<0.2	<0.2	<0.2	**0.26**	**1.5**	**4.79**
		P4-4-2.5	7/13/2022	2.5	No	<0.01 R	<0.01 R	**0.013 J**	**0.2 J**	**0.39 J**	**0.26 J**	**0.25 J**	**0.27 J**	**0.19 J**	**0.079 J**	**0.14 J**	<0.01 R	**0.35 J**	<0.01 R	<0.01 R	<0.01 R	**0.046 J**	**0.18 J**	**0.55**
		P4-4-4.0	7/13/2022	4.0	Yes	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	NA
	2024 Soil Investigation																							
	P4-B9	P4-B9-2.0	1/10/2024	2.0	No	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
		P4-B9-3.0	1/10/2024	3.0	No	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P4-B10	P4-B10-2.0	1/10/2024	2.0	No	<0.250	<0.250	<0.250	0.140 J	**0.270**	**0.260**	**0.220 J**	**0.093 J**	**0.180 J**	<0.250	**0.280**	<0.250	**0.220 J**	<0.250	<0.250	<0.250	**0.110 J**	**0.340**	**0.58**
		P4-B10-3.0	1/10/2024	3.0	Yes	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	Parcel 4 Future Receptor EPCs					0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	NA

Notes:

Green highlighted cells indicate the "left in place" soil COPC concentration was considered for selection as the EPC for future receptors (i.e., future resident and future construction worker) under the planned soil removal scenario. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization.

1. Soil samples collected by GSI Environmental Inc.and analyzed by Enthalpy Analytical for polycyclic aromatic hydrocarbons (PAHs) using United States Environmental Protection Agency (USEPA) Method 8270C with selective ion monitoring (SIM). Shaded concentrations exceed residential screening criteria.

2. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs.

Abbreviations:

< = Analyte not detected above the reporting limit shown
BaPe = Benzo(a)pyrene equivalent value
bgs = Below ground surface
bold = Analyte detected above the reporting limit
DUP = Duplicate sample
EPC = exposure point concentration
J = The detected result is estimated.
mg/kg = Milligrams per kilogram
NA = Not applicable; PAHs were not detected; therefore, a BaPe was not calculated
R = The non-detected result is rejected because the holding time was exceeded.
RAW = Remedial Action Work Plan

GSI ENVIRONMENTAL

APPENDIX B TABLE B-7. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS
PESTICIDES IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Organochlorine Pesticides[1]																		
						Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC	Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
				feet bgs		mg/kg																		
1	***2022 Soil Investigation***																							
	P1-1	P1-1-1.0	7/13/2022	1.0	No	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P1-1-2.5	7/13/2022	2.5	Yes	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P1-1-4.0	7/13/2022	4.0	Yes	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P1-2	P1-2-2.5	7/13/2022	2.5	Yes	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
	P1-3	P1-3-1.0	7/13/2022	1.0	No	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	2024 Soil Investigation																							
	P1-A7	P1-A7-1.0	1/11/2024	1.0	No	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
		P1-A7-2.5	1/11/2024	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.100
	P1-A8	P1-A8-1.0	1/11/2024	1.0	No	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	**0.057**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
		P1-A8-1.0(DUP)	1/11/2024	1.0	No	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.010	<0.100
		P1-A8-2.5	1/11/2024	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	Parcel 1 Future Receptor EPCs					0.0051	0.0051	0.0051	0.0051	0.0051	0.050	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.010	0.10
2	***2022 Soil Investigation***																							
	P2-1	P2-1-2.5	7/13/2022	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-2	P2-2-1.0	7/13/2022	1.0	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	**0.012 C J**	**0.015**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	P2-3	P2-3-1.0	7/13/2022	1.0	No	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	**0.025**	**0.024**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P2-3-2.5	7/13/2022	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-4	P2-4-1.0	7/13/2022	1.0	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	Parcel 2 Future Receptor EPCs					0.0050	0.0050	0.0050	0.0050	0.0050	0.050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0099	0.099
3	***2022 Soil Investigation***																							
	P3-1	P3-1-2.5	7/13/2022	2.5	Yes	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-2	P3-2-1.0	7/13/2022	1.0	No	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.098	<0.0098	**0.011 C**	**0.04**	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.02	<0.2
		P3-2-2.5	7/13/2022	2.5	Yes	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-3	P3-3-1.0	7/13/2022	1.0	No	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	**0.01**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P3-3-2.5	7/13/2022	2.5	Yes	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.049	<0.49
	P3-4	P3-4-1.0	7/13/2022	1.0	No	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
	Parcel 3 Future Receptor EPCs					0.025	0.025	0.025	0.025	0.025	0.25	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.049	0.49
4	***2022 Soil Investigation***																							
	P4-1	P4-1-1.0	7/13/2022	1.0	No	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	**0.037**	**0.14**	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
		P4-1-2.5	7/13/2022	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P4-2	P4-2-1.0	7/13/2022	1.0	No	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P4-2-2.5	7/13/2022	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	P4-3	P4-3-2.5	7/13/2022	2.5	Yes	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P4-4	P4-4-1.0	7/13/2022	1.0	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	Parcel 4 Future Receptor EPCs					0.0051	0.0051	0.0051	0.0051	0.0051	0.050	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.010	0.10

Notes:

Green highlighted cells indicate the "left in place" soil COPC concentration was considered for selection as the EPC for future receptors (i.e., future resident and future construction worker) under the planned soil removal scenario. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization.

Abbreviations:

< = Analyte not detected above the reporting limit shown
bold = Analyte detected above the reporting limit
bgs = Below ground surface
C = Presence confirmed, but the Relative Percent Difference (RPD) between columns exceeds 40%
DUP = Duplicate sample
EPC = exposure point concentration
J = The detected result is an estimate
mg/kg = Milligrams per kilogram
RAW = Remedial Action Work Plan

GSI ENVIRONMENTAL

APPENDIX B TABLE B-8. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS TOTAL PETROLEUM HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Total Petroleum Hydrocarbons[1]	
						TPH-d	TPH-mo
				feet bgs		mg/kg	
1	***2022 Soil Investigation***						
	P1-1	P1-1-1.0	7/13/2022	1.0	No	<10	<20
		P1-1-2.5	7/13/2022	2.5	Yes	<10	<20
		P1-1-4.0	7/13/2022	4.0	Yes	<10	<20
	P1-2	P1-2-2.5	7/13/2022	2.5	Yes	<10	<20
	P1-3	P1-3-1.0	7/13/2022	1.0	No	**14**	**22**
	2024 Soil Investigation						
	P1-A7	P1-A7-1.0	1/11/2024	1.0	No	<10	<20
		P1-A7-2.5	1/11/2024	2.5	Yes	<10	<20
	P1-A8	P1-A8-1.0	1/11/2024	1.0	No	<10	<20
		P1-A8-1.0(DUP)	1/11/2024	1.0	No	**11**	<20
		P1-A8-2.5	1/11/2024	2.5	Yes	<9.9	<20
	Parcel 1 Future Receptor EPCs					10	20
2	***2022 Soil Investigation***						
	P2-1	P2-1-2.5	7/13/2022	2.5	Yes	<10	<20
	P2-2	P2-2-1.0	7/13/2022	1.0	No	**20**	**51**
	P2-3	P2-3-1.0	7/13/2022	1.0	No	**25**	**61**
		P2-3-2.5	7/13/2022	2.5	Yes	<10	<20
	P2-4	P2-4-1.0	7/13/2022	1.0	No	**47**	**89**
	Parcel 2 Future Receptor EPCs					10	20
3	***2022 Soil Investigation***						
	P3-1	P3-1-2.5	7/13/2022	2.5	Yes	<10	<20
	P3-2	P3-2-1.0	7/13/2022	1.0	No	<50	<100
		P3-2-2.5	7/13/2022	2.5	Yes	<10	<20
	P3-3	P3-3-1.0	7/13/2022	1.0	No	**120**	**87**
		P3-3-2.5	7/13/2022	2.5	No	**160**	**490**
	P3-4	P3-4-1.0	7/13/2022	1.0	No	**65**	**210**
	Parcel 3 Future Receptor EPCs					10	20

APPENDIX B TABLE B-8. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS TOTAL PETROLEUM HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Total Petroleum Hydrocarbons[1]	
						TPH-d	TPH-mo
				feet bgs		mg/kg	
4	***2022 Soil Investigation***						
	P4-1	P4-1-1.0	7/13/2022	1.0	No	<50	<100
		P4-1-2.5	7/13/2022	2.5	Yes	<10	<20
	P4-2	P4-2-1.0	7/13/2022	1.0	No	<10	<20
		P4-2-2.5	7/13/2022	2.5	Yes	<10	<20
	P4-3	P4-3-2.5	7/13/2022	2.5	Yes	<10	<20
	P4-4	P4-4-1.0	7/13/2022	1.0	No	**45**	**76**
	Parcel 4 Future Receptor EPCs					10	20

Notes:

Green highlighted cells indicate the "left in place" soil COPC concentration was considered for selection as the EPC for future receptors (i.e., future resident and future construction worker) under the planned soil removal scenario. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization.

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical for TPH using United States Environmental Protection Agency (USEPA) Method 8015M.

Abbreviations:

< = Analyte not detected above the reporting limit shown

bold = Analyte detected above the reporting limit

bgs = Below ground surface

EPC = exposure point concentration

mg/kg = Milligrams per kilogram

RAW = Remedial Action Work Plan

TPH = Total petroleum hydrocarbons

TPH-d = TPH quantified as diesel (diesel range organics [DRO] C10-C28)

TPH-mo = TPH quantified as motor oil (oil range organics [ORO] C28-C44)

GSI ENVIRONMENTAL

APPENDIX B TABLE B-9. TOXICITY CRITERIA REQUIRED BY RULE AND DTSC-RECOMMENDED TOXICITY CRITERIA[a]

Santa Fe Trackbed to Park

Berkeley, California

		Cancer-Risk Values							Noncancer Health-Hazard Values				
			Oral Slope Factor			Inhalation Unit Risk			Reference Dose - Oral			Reference Concentration	
Analyte	**CAS #**	**Mutagen?**	**SFo** (mg/kg-d)$^{-1}$	**Reference**		**IUR** (µg/m^3)$^{-1}$	**Reference**		**RfDo** (mg/kg-d)	**Reference**		**RfC** (µg/m^3)	**Reference**
1-Methylnaphthalene	90-12-0	--	2.9E-02	PPRTV		7.3E-06	Route (PPRTV)		7.0E-02	ATSDR		2.8E+02	Route (ATSDR)
2-Methylnaphthalene	91-57-6	--	--	--		--	--		4.0E-03	IRIS		1.6E+01	Route (IRIS)
4,4'-DDD	72-54-8	--	2.4E-01	IRIS		6.9E-05	OEHHA		3.0E-05	sPPRTV		--	--
4,4'-DDE	72-55-9	--	3.4E-01	OEHHA		9.7E-05	OEHHA		3.0E-04	sPPRTV		1.2E+00	Route (sPPRTV)
4,4'-DDT	50-29-3	--	3.4E-01	IRIS		9.7E-05	IRIS		5.0E-04	IRIS		--	--
Acenaphthene	83-32-9	--	--	--		--	--		6.0E-02	IRIS		2.4E+02	Route (IRIS)
Aldrin	309-00-2	--	1.7E+01	IRIS		4.9E-03	OEHHA		3.0E-05	IRIS		1.2E-01	Route (IRIS)
alpha-HCH	319-84-6	--	6.3E+00	IRIS		1.8E-03	IRIS		8.0E-03	ATSDR		--	--
Anthracene	120-12-7	--	--	--		--	--		3.0E-01	IRIS		1.2E+03	Route (IRIS)
Antimony	7440-36-0	--	--	--		--	--		4.0E-04	IRIS		--	--
Arsenic	7440-38-2	--	**9.5E+00**	**OEHHA PHG**		4.3E-03	IRIS		**3.5E-06**	**OEHHA**		**1.5E-02**	**OEHHA**
Barium	7440-39-3	--	--	--		--	--		2.0E-01	IRIS		5.0E-01	HEAST
Benzo[a]anthracene	56-55-3	M	1.0E-01	ECAO		**1.1E-04**	**OEHHA TSD**		--	--		--	--
Benzo[a]pyrene	50-32-8	M	1.0E+00	IRIS		**1.1E-03**	**OEHHA PHG**		3.0E-04	IRIS		2.0E-03	IRIS
Benzo[b]fluoroanthene	205-99-2	M	1.0E-01	ECAO		**1.1E-04**	**OEHHA TSD**		--	--		--	--
Benzo[k]fluoroanthene	207-08-9	M	1.0E-02	ECAO		**1.1E-04**	**OEHHA TSD**		--	--		--	--
Beryllium	7440-41-7	--	--	--		2.4E-03	IRIS		**2.0E-04**	**OEHHA PHG**		**7.0E-03**	**OEHHA**
beta-HCH	319-85-7	--	1.8E+00	IRIS		5.3E-04	IRIS		--	--		--	--
Cadmium	7440-43-9	--	--	--		**4.2E-03**	**OEHHA**		1.0E-03	IRIS		1.0E-02	ATSDR
Chlordane (technical)	12789-03-6	--	3.5E-01	IRIS		1.0E-04	IRIS		5.0E-04	IRIS		7.0E-01	IRIS
Chromium	7440-47-3	--	--	--		--	--		--	--		--	--
Chrysene	218-01-9	M	1.0E-03	ECAO		**1.1E-05**	**OEHHA TSD**		--	--		--	--
Cobalt	7440-48-4	--	--	--		9.0E-03	PPRTV		3.0E-04	PPRTV		6.0E-03	PPRTV
Copper	7440-50-8	--	--	--		--	--		4.0E-02	HEAST		--	--
Dibenz[a,h]anthracene	53-70-3	M	**4.1E+00**	**OEHHA ECP**		**1.2E-03**	**OEHHA ECP**		--	--		--	--
Dieldrin	60-57-1	--	1.6E+01	OEHHA		4.6E-03	OEHHA		5.0E-05	IRIS		2.0E-01	Route (IRIS)
Endosulfan	115-29-7	--	--	--		--	--		6.0E-03	IRIS		2.4E+01	Route (IRIS)
Endrin	72-20-8	--	--	--		--	--		3.0E-04	IRIS		--	--
Fluoranthene	206-44-0	--	--	--		--	--		4.0E-02	IRIS		--	--
Fluorene	86-73-7	--	--	--		--	--		4.0E-02	IRIS		1.6E+02	Route (IRIS)
gamma-HCH	58-89-9	--	1.1E+00	OEHHA		3.1E-04	OEHHA		3.0E-04	IRIS		--	--
Heptachlor	76-44-8	--	4.5E+00	IRIS		1.3E-03	IRIS		5.0E-04	IRIS		2.0E+00	Route (IRIS)
Heptachlor Epoxide	1024-57-3	--	9.1E+00	IRIS		2.6E-03	IRIS		1.3E-05	IRIS		5.2E-02	Route (IRIS)
Indeno[1,2,3-cd]pyrene	193-39-5	M	1.0E-01	ECAO		**1.1E-04**	**OEHHA TSD**		--	--		--	--
Lead[d]	7439-92-1	**HHRA Note 3[d]**											
Mercury	7439-97-6	--	--	--		--	--		**1.6E-04**	**OEHHA REL**		**3.0E-02**	**OEHHA**
Methoxychlor	72-43-5	--	--	--		--	--		5.0E-03	IRIS		2.0E+01	Route (IRIS)
Molybdenum	7439-98-7	--	--	--		--	--		5.0E-03	IRIS		--	--
Naphthalene	91-20-3	--	1.2E-01	OEHHA		3.4E-05	OEHHA		2.0E-02	IRIS		3.0E+00	IRIS
Nickel	7440-02-0	--	--	--		**2.6E-04**	**OEHHA**		**1.1E-02**	**OEHHA**		**1.4E-02**	**OEHHA**
Pyrene	129-00-0	--	--	--		--	--		3.0E-02	IRIS		1.2E+02	Route (IRIS)
Selenium	7782-49-2	--	--	--		--	--		5.0E-03	IRIS		2.0E+01	OEHHA
Silver	7440-22-4	--	--	--		--	--		5.0E-03	IRIS		--	--
Thallium	7440-28-0	--	--	--		--	--		1.0E-05	sPPRTV		--	--
Toxaphene	8001-35-2	--	**1.2E+00**	**OEHHA**		3.2E-04	IRIS		9.0E-05	sPPRTV		--	--

APPENDIX B TABLE B-9. TOXICITY CRITERIA REQUIRED BY RULE AND DTSC-RECOMMENDED TOXICITY CRITERIA[a]

Santa Fe Trackbed to Park

Berkeley, California

		Cancer-Risk Values							Noncancer Health-Hazard Values				
			Oral Slope Factor			Inhalation Unit Risk			Reference Dose - Oral			Reference Concentration	
Analyte	**CAS #**	**Mutagen?**	**SFo** $(mg/kg\text{-}d)^{-1}$	**Reference**		**IUR** $(\mu g/m^3)^{-1}$	**Reference**		**RfDo** (mg/kg-d)	**Reference**		**RfC** ($\mu g/m^3$)	**Reference**
Vanadium	7440-62-2	--	--	--		--	--		5.0E-03	RSL		1.0E-01	ATSDR
Zinc	7440-66-6	--	--	--		--	--		3.0E-01	IRIS		--	--

NOTES:

[a] Summarized from the Rule and from HHRA Note 3; toxicity criteria and values are listed for USEPA RSL analytes;
"--" = indicates that toxicity values are not available from standard reference sources.

[b] Named in the USEPA RSL tables as 2-Chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester sulfite

[c] Named in the USEPA RSL tables as Hexachlorodibenzo-p-dioxin Mixture (2:1 1,2,3,7,8,9- and 1,2,3,6,7,8-)

[d] Screening levels for lead are derived differently than other risk-based screening levels; see the text of HHRA Note 3 for details.

Green-shaded chemicals are COPCs with DTSC-specific toxicity criteria used to calculate construction worker risk-based screening levels using the USEPA RSL calculator (USEPA, 2024b).

Gray-shaded bold values indicate toxicity criteria required by Rule (a) criteria.

Plain text values are DTSC-recommended values for use in deriving screening concentrations for environmental media, or in screening-level human health risk assessments.

$(mg/kg\text{-}d)^{-1}$ = per (milligram per kilogram--day)
$(\mu g/m^3)^{-1}$ = per (microgram per cubic meter)
µg/L = micrograms per liter
$\mu g/m^3$ = micrograms per cubic meter
ATSDR = Agency for Toxic Substances and Disease Registry
CAS # = Chemical Abstracts Service Registry Number
DTSC = California Department of Toxic Substances Control
ECAO = Environmental Criteria and Assessment Office (RSLs)
ECP = Expedited Cancer Potency Factors
HEAST = Health Effects Assessment Summary Tables
HHRA Note 3 = DTSC Human Health Risk Assessment Note 3
HxCDD = hexachlorodibenzo-*p*-dioxin
IRIS = USEPA's *Integrated Risk Information System*
IUR = inhalation unit-risk factor
M = mutagen
mg/kg = milligrams per kilogram
mg/kg-d = milligrams per kilogram--day
OEHHA = Office of Environmental Health Hazard Assessment
OPP = USEPA Office of Pesticide Programs
PHG = Public Health Goal toxicity factor
PPRTV = provisional peer-reviewed toxicity value
REL = reference exposure level
RfC = reference concentration
RfDo = oral reference dose

Route('xyz') = route extrapolation from an oral toxicity value (from the 'xyz' source) to an inhalation toxicity value:
IUR $(\mu g/m^3)^{-1}$ = SFo $(mg/kg\text{-}day)^{-1}$ × (1/80 kg) × 20 m^3/day × 0.001 mg/µg
RfC ($\mu g/m^3$) = RfDo (mg/kg-day) × 80 kg × (1 day/20 m^3) × 1000 µg/mg
RSL = USEPA Regional Screening Level
SFo = oral slope factor
SL = screening level
sPPRTV = screening PPRTV
TEF = toxicity equivalence factor (from WHO [World Health Organization], 1995)
TSD = technical support document
USEPA = U.S. Environmental Protection Agency

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APPENDIX B TABLE B-10. USEPA RSL CALCULATOR INPUT VALUES FOR CONSTRUCTION WORKER RBSLs: TOXICITY CRITERIA REQUIRED BY DTSC RULE AND HHRA NOTE 3

Santa Fe Trackbed to Park

Berkeley, California

Variable	Construction Worker Soil - Other Default Value	Site-Specific Value
A (PEF Dispersion Constant)	2.4538	2.4538
A_{surf} (areal extent of site) m^2	2023.43	2023.43
A (VF Dispersion Constant)	2.4538	2.4538
B (PEF Dispersion Constant)	17.566	17.566
B (VF Dispersion Constant)	17.566	17.566
C (PEF Dispersion Constant)	189.0426	189.0426
C (VF Dispersion Constant)	189.0426	189.0426
DW_{con} (days worked - construction worker) days/week	5	5
EW_{con} (weeks worked - construction worker) weeks/year	50	50
F_D Unitless Dispersion Correction Factor	0.185837208	0.185837208
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependant on U_m/U_t derived using Cowherd et al. (1985))	0.194	0.194
$M_{m\text{-}doz}$ (Gravimetric soil moisture content) %	7.9	7.9
$M_{m\text{-}excav}$ (Gravimetric soil moisture content) %	12	12
M_{wind} (dust emitted by wind erosion) g	8803.913546	8803.913546
$N_{A\text{-}dump}$ (number of times soil is dumped)	2	2
$N_{A\text{-}till}$ (number of times soil is tilled)	2	2
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
p_b (dry soil bulk density) g/cm^3	1.5	1.5
p_b (dry soil bulk density - mass limit) g/cm^3	1.5	1.5
p_s (soil particle density) g/cm^3	2.65	2.65
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31407
Q/C_{vol} (g/m^2-s per kg/m^3)	14.31407	14.31407
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31407
p_{soil} (density) g/cm^3 - chemical-specific	1.68	1.68
A_s ($VF_{mlim\text{-}sc}$ acres)	0.5	0.5
A_s ($VF_{ulim\text{-}sc}$ acres)	0.5	0.5
s_{doz} (soil silt content) %	6.9	6.9
AF_{con} (skin adherence factor - construction worker) mg/cm^2	0.3	0.8
AT_{con} (averaging time - construction worker) days	365	365
$AT_{con\text{-}a}$ (averaging time - construction worker) days	350	350
BW_{con} (body weight - construction worker) kg	80	80
ED_{con} (exposure duration - construction worker) yr	1	1
EF_{con} (exposure frequency - construction worker) day/yr	250	250
ET_{con} (exposure time - construction worker) hr/day	8	8
THQ (target hazard quotient) unitless	0.1	1
IRS_{con} (soil ingestion rate - construction worker) mg/day	330	330
LT (lifetime) yr	70	70
SA_{con} (surface area - construction worker) cm^2/day	3527	6032
TR (target cancer risk) unitless	0.000001	0.000001
S_{doz} (dozing speed) kph	11.4	11.4
S_{grade} (grading speed) kph	11.4	11.4
s_{till} (soil silt content) %	18	18
t_c (overall duration of construction) hours	8400	8400
T_c (overall duration of construction) s	30240000	30240000
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15
T (time over which traffic occurs) s	7200000	7200000
T_t (overall duration of traffic) s	7200000	7200000
U_m (mean annual wind speed) m/s	4.69	4.69
U_t (equivalent threshold value) m/s	11.32	11.32
V (fraction of vegetative cover)	0	0

Notes:
Orange-highlighted cells indicate user-input (i.e., non-default) values per DTSC guidance.
RSL = regional screening level
RBSL = risk-based screening level

GSI ENVIRONMENTAL

APPENDIX B TABLE B-11. USEPA RSL CALCULATOR OUTPUT VALUES FOR CONSTRUCTION WORKER RBSLs: TOXICITY CRITERIA REQUIRED BY DTSC RULE AND HHRA NOTE 3

Santa Fe Trackbed to Park
Berkeley, California

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_oRef	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	Particulate Emission Factor (m^3/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
Arsenic, Inorganic	7440-38-2	No	No	Inorganics	9.50E+00	U	4.30E-03	U	3.50E-06	U	1.50E+01	U	1.00E+06	2.43E+00	1.14E+00
Benz[a]anthracene	56-55-3	Yes	Yes	Organics	1.00E-01	U	1.10E-04	U	-		-		1.00E+06	8.04E+01	-
Benzo[a]pyrene	50-32-8	Yes	No	Organics	1.00E+00	U	1.10E-03	U	-		-		1.00E+06	8.29E+00	-
Benzo[b]fluoranthene	205-99-2	Yes	No	Organics	1.00E-01	U	1.10E-04	U	-		-		1.00E+06	8.29E+01	-
Benzo[k]fluoranthene	207-08-9	Yes	No	Organics	1.00E-02	U	1.10E-04	U	-		-		1.00E+06	6.54E+02	-
Beryllium and compounds	7440-41-7	No	No	Inorganics	-		2.40E-03	U	2.00E-04	U	7.00E+00	U	1.00E+06	1.28E+02	6.79E+01
Cadmium (Diet)	7440-43-9	No	No	Inorganics	-		4.20E-03	U	5.00E-04	U	-		1.00E+06	7.30E+01	1.07E+02
Chrysene	218-01-9	Yes	No	Organics	1.00E-03	U	1.10E-05	U	-		-		1.00E+06	6.54E+03	-
Dibenz[a,h]anthracene	53-70-3	Yes	No	Organics	4.10E+00	U	1.20E-03	U	-		-		1.00E+06	2.07E+00	-
Indeno[1,2,3-cd]pyrene	193-39-5	Yes	No	Organics	1.00E-01	U	1.10E-04	U	-		-		1.00E+06	8.29E+01	-
Mercury (elemental)	7439-97-6	No	Yes	Inorganics	-		-		1.60E-04	U	3.00E+01	U	1.00E+06	-	5.43E+01
Nickel Soluble Salts	7440-02-0	No	No	Inorganics	-		2.60E-04	U	1.10E-02	U	1.40E+01	U	1.00E+06	1.18E+03	3.73E+03
Toxaphene	8001-35-2	No	No	Organics	1.10E+00	U	3.20E-04	U	3.00E-04	U	-		1.00E+06	9.06E+00	4.14E+01

APPENDIX B TABLE B-12. USEPA RSL CALCULATOR INPUT VALUES FOR CONSTRUCTION WORKER RBSLs: DEFAULT USEPA TOXICITY CRITERIA

Santa Fe Trackbed to Park

Berkeley, California

Variable	Construction Worker Soil - Other Default Value	Site-Specific Value
A (PEF Dispersion Constant)	2.4538	2.4538
A_{surf} (areal extent of site) m^2	2023.43	2023.43
A (VF Dispersion Constant)	2.4538	2.4538
B (PEF Dispersion Constant)	17.566	17.566
B (VF Dispersion Constant)	17.566	17.566
C (PEF Dispersion Constant)	189.0426	189.0426
C (VF Dispersion Constant)	189.0426	189.0426
DW_{con} (days worked - construction worker) days/week	5	5
EW_{con} (weeks worked - construction worker) weeks/year	50	50
F_D Unitless Dispersion Correction Factor	0.185837208	0.185837208
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependant on U_m/U_t derived using Cowherd et al. (1985))	0.194	0.194
$M_{m\text{-}doz}$ (Gravimetric soil moisture content) %	7.9	7.9
$M_{m\text{-}excav}$ (Gravimetric soil moisture content) %	12	12
M_{wind} (dust emitted by wind erosion) g	8803.913546	8803.913546
$N_{A\text{-}dump}$ (number of times soil is dumped)	2	2
$N_{A\text{-}till}$ (number of times soil is tilled)	2	2
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
p_b (dry soil bulk density) g/cm^3	1.5	1.5
p_b (dry soil bulk density - mass limit) g/cm^3	1.5	1.5
p_s (soil particle density) g/cm^3	2.65	2.65
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31407
Q/C_{vol} (g/m^2-s per kg/m^3)	14.31407	14.31407
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31407
p_{soil} (density) g/cm^3 - chemical-specific	1.68	1.68
A_s ($VF_{mlim\text{-}sc}$ acres)	0.5	0.5
A_s ($VF_{ulim\text{-}sc}$ acres)	0.5	0.5
s_{doz} (soil silt content) %	6.9	6.9
AF_{con} (skin adherence factor - construction worker) mg/cm^2	0.3	0.8
AT_{con} (averaging time - construction worker) days	365	365
$AT_{con\text{-}a}$ (averaging time - construction worker) days	350	350
BW_{con} (body weight - construction worker) kg	80	80
ED_{con} (exposure duration - construction worker) yr	1	1
EF_{con} (exposure frequency - construction worker) day/yr	250	250
ET_{con} (exposure time - construction worker) hr/day	8	8
THQ (target hazard quotient) unitless	0.1	1
IRS_{con} (soil ingestion rate - construction worker) mg/day	330	330
LT (lifetime) yr	70	70
SA_{con} (surface area - construction worker) cm^2/day	3527	6032
TR (target cancer risk) unitless	0.000001	0.000001
S_{doz} (dozing speed) kph	11.4	11.4
S_{grade} (grading speed) kph	11.4	11.4
s_{till} (soil silt content) %	18	18
t_c (overall duration of construction) hours	8400	8400
T_c (overall duration of construction) s	30240000	30240000
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15

APPENDIX B TABLE B-12. USEPA RSL CALCULATOR INPUT VALUES FOR CONSTRUCTION WORKER RBSLs: DEFAULT USEPA TOXICITY CRITERIA

Santa Fe Trackbed to Park

Berkeley, California

Variable	Construction Worker Soil - Other Default Value	Site-Specific Value
T (time over which traffic occurs) s	7200000	7200000
T_t (overall duration of traffic) s	7200000	7200000
U_m (mean annual wind speed) m/s	4.69	4.69
U_t (equivalent threshold value) m/s	11.32	11.32
V (fraction of vegetative cover)	0	0

Notes:
Orange-highlighted cells indicate user-input (i.e., non-default) values per DTSC guidance.
RSL = regional screening level
RBSL = risk-based screening level

GSI ENVIRONMENTAL

APPENDIX B TABLE B-13. USEPA RSL CALCULATOR INPUT VALUES FOR CONSTRUCTION WORKER RBSLs:
DEFAULT USEPA TOXICITY CRITERIA
Santa Fe Trackbed to Park
Berkeley, California

Chemical	CAS Number	Mutagen ?	Volatile?	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_oRef	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	Particulate Emission Factor (m^3/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
Acenaphthene	83-32-9	No	Yes	Organics	-		-		2.00E-01	P /Subchronic	-		1.00E+06	-	2.34E+04
Acenaphthylene	208-96-8	No	Yes	Organics	-		-		-		-		1.00E+06	-	-
Aldrin	309-00-2	No	Yes	Organics	1.70E+01	I	4.90E-03	I	4.00E-05	P /Subchronic	-		1.00E+06	1.34E+00	1.36E+01
Anthracene	120-12-7	No	Yes	Organics	-		-		1.00E+00	P /Subchronic	-		1.00E+06	-	1.17E+05
Antimony (metallic)	7440-36-0	No	No	Inorganics	-		-		4.00E-04	P /Subchronic	1.00E-03	A /Subchronic	1.00E+06	-	1.32E+02
Barium	7440-39-3	No	No	Inorganics	-		-		2.00E-01	A /Subchronic	5.00E-03	H /Subchronic	1.00E+06	-	1.60E+04
Benzo[g,h,i]perylene	191-24-2	No	No	Organics	-		-		-		-		1.00E+06	-	-
Chlordane (technical mixture)	12789-03-6	No	Yes	Organics	3.50E-01	I	1.00E-04	I	6.00E-04	A /Subchronic	2.00E-04	A /Subchronic	1.00E+06	4.22E+01	7.96E+01
Chromium, Total	7440-47-3	No	No	Inorganics	-		-		-		-		1.00E+06	-	-
Cobalt	7440-48-4	No	No	Inorganics	-		9.00E-03	P	3.00E-03	P /Subchronic	2.00E-05	P /Subchronic	1.00E+06	3.41E+01	7.76E+01
Copper	7440-50-8	No	No	Inorganics	-		-		2.00E-02	A /Subchronic	-		1.00E+06	-	6.79E+03
Dichlorodiphenyldichloroethane, p,p'-(DDD)	72-54-8	No	No	Organics	2.40E-01	I	6.90E-05	C	5.00E-04	A /Subchronic	-		1.00E+06	4.15E+01	6.89E+01
Dichlorodiphenyldichloroethylene, p,p'-(DDE)	72-55-9	No	Yes	Organics	3.40E-01	I	9.70E-05	C	3.00E-04	P /Subchronic	-		1.00E+06	6.79E+01	1.02E+02
Dichlorodiphenyltrichloroethane, p,p'-(DDT)	50-29-3	No	No	Organics	3.40E-01	I	9.70E-05	I	5.00E-04	A /Subchronic	-		1.00E+06	4.99E+01	1.18E+02
Dieldrin	60-57-1	No	No	Organics	1.60E+01	I	4.60E-03	I	1.00E-04	A /Subchronic	-		1.00E+06	6.23E-01	1.38E+01
Endosulfan I	959-98-8	No	No	Organics	-		-		-		-		1.00E+06	-	-
Endosulfan II	9	No	No	Organics	-		-		-		-		1.00E+06	-	-
Endosulfan Sulfate	1031-07-8	No	No	Organics	-		-		3.00E-03	X /Subchronic	-		1.00E+06	-	4.14E+02
Endrin	72-20-8	No	No	Organics	-		-		6.00E-04	A /Subchronic	-		1.00E+06	-	8.27E+01
Endrin aldehyde	7421-93-4	No	No	Organics	-		-		-		-		1.00E+06	-	-
Endrin ketone	5	No	No	Organics	-		-		-		-		1.00E+06	-	-
Fluoranthene	206-44-0	No	No	Organics	-		-		1.00E-01	P /Subchronic	-		1.00E+06	-	1.17E+04
Fluorene	86-73-7	No	Yes	Organics	-		-		8.00E-04	P /Subchronic	-		1.00E+06	-	9.36E+01
Heptachlor	76-44-8	No	Yes	Organics	4.50E+00	I	1.30E-03	I	1.00E-04	A /Subchronic	-		1.00E+06	4.41E+00	3.39E+01
Heptachlor Epoxide	1024-57-3	No	Yes	Organics	9.10E+00	I	2.60E-03	I	1.30E-05	H /Subchronic	-		1.00E+06	2.37E+00	4.41E+00
Hexachlorocyclohexane, Alpha-	319-84-6	No	No	Organics	6.30E+00	I	1.80E-03	I	2.00E-03	A /Subchronic	-		1.00E+06	1.58E+00	2.76E+02
Hexachlorocyclohexane, Beta-	319-85-7	No	No	Organics	1.80E+00	I	5.30E-04	I	6.00E-04	A /Subchronic	-		1.00E+06	5.54E+00	8.27E+01
Hexachlorocyclohexane, Delta-	319-86-8	No	No	Organics	-		-		-		-		1.00E+06	-	-

GSI ENVIRONMENTAL

APPENDIX B TABLE B-13. USEPA RSL CALCULATOR INPUT VALUES FOR CONSTRUCTION WORKER RBSLs: DEFAULT USEPA TOXICITY CRITERIA
Santa Fe Trackbed to Park
Berkeley, California

Chemical	CAS Number	Mutagen ?	Volatile?	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_oRef	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	Particulate Emission Factor (m^3/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
Hexachlorocyclohexane, Gamma-(Lindane)	58-89-9	No	No	Organics	1.10E+00	C	3.10E-04	C	8.00E-07	A /Subchronic	-		1.00E+06	1.40E+01	1.71E-01
Lead and Compounds	7439-92-1	No	No	Inorganics	-		-		-		-		1.00E+06	-	-
Methoxychlor	72-43-5	No	No	Organics	-		-		5.00E-03	A /Subchronic	-		1.00E+06	-	6.89E+02
Methylnaphthalene, 1-	90-12-0	No	Yes	Organics	5.10E-02	X	-		2.00E-01	X /Subchronic	3.00E-05	P /Subchronic	1.00E+06	1.67E+02	1.58E+00
Methylnaphthalene, 2-	91-57-6	No	Yes	Organics	-		-		4.00E-03	P /Subchronic	-		1.00E+06	-	4.68E+02
Molybdenum	7439-98-7	No	No	Inorganics	-		-		6.00E-02	A /Subchronic	2.00E-03	A /Chronic	1.00E+06	-	5.95E+03
Naphthalene	91-20-3	No	Yes	Organics	1.20E-01	C	3.40E-05	C	6.00E-01	A /Subchronic	3.00E-03	I /Chronic	1.00E+06	3.97E+01	1.25E+02
Phenanthrene	85-01-8	No	Yes	Organics	-		-		-		-		1.00E+06	-	-
Pyrene	129-00-0	No	Yes	Organics	-		-		3.00E-01	P /Subchronic	-		1.00E+06	-	3.51E+04
Selenium	7782-49-2	No	No	Inorganics	-		-		5.00E-03	H /Subchronic	2.00E-02	C /Chronic	1.00E+06	-	1.66E+03
Silver	7440-22-4	No	No	Inorganics	-		-		5.00E-03	H /Subchronic	-		1.00E+06	-	1.70E+03
Thallium (Soluble Salts)	7440-28-0	No	No	Inorganics	-		-		4.00E-05	X /Subchronic	-		1.00E+06	-	1.36E+01
Vanadium and Compounds	7440-62-2	No	No	Inorganics	-		-		1.00E-02	A /Subchronic	1.00E-04	A /Chronic	1.00E+06	-	3.74E+02
Zinc and Compounds	7440-66-6	No	No	Inorganics	-		-		3.00E-01	A /Subchronic	-		1.00E+06	-	1.02E+05

GSI ENVIRONMENTAL

APPENDIX B TABLE B-14. LEADSPREAD 9 LEAD RISK ASSESSMENT SPREADSHEET
CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Santa Fe Trackbed to Park

Berkeley, California

USERS GUIDE to Leadspread Version 9

INPUT

MEDIUM	LEVEL
Lead in Soil/Dust (µg/g)	80
Respirable Dust (µg/cubic m)	1.5

EXPOSURE PARAMETERS

Parameter	units	adults	children
Days per week	days/wk	7	
Days per week, occupational	-	5	
Geometric Standard Deviation	-	1.6	
Blood lead level of concern	(µg/dl)	1.1	1
Skin area, residential	square cm	6032	2373
Skin area occupational	square cm	6032	
Soil adherence	µg/square cm	800	200
Dermal uptake constant	(µg/dl)/(µg/day)	0.00027	0.00048
Soil ingestion	mg/day	100	80
Soil ingestion, pica	mg/day		1000
Ingestion constant	(µg/dl)/(µg/day)	0.09	0.16
Bioavailability	unitless	0.6	
Breathing rate	cubic meter/day	20	10
Inhalation constant	(µg/dl)/(µg/day)	0.082	0.192

Click here for REFERENCES

OUTPUT

ENDPOINT and RECEPTOR	50th Percentile Change in Blood Pb (µg/dl)	90th Percentile Change in Blood Pb (µg/dl)	95th Percentile Change in Blood Pb (µg/dl)	PRG-90 (µg/g)	PRG-95 (µg/g)
BLOOD Pb, ADULT	0.5	0.9	1.1	97	82
BLOOD Pb, CHILD	0.6	1.1	1.4	70	59
BLOOD Pb, PICA CHILD	7.7	14.0	16.6	6	5
BLOOD Pb, OCCUPATIONAL	0.4	0.6	0.8	136	115

PATHWAYS

ADULTS	Residential Pathway Contribution	Residential Pathway Contribution	Residential Pathway Contribution	Occupational Pathway contribution	Occupational Pathway contribution	Occupational Pathway contribution
Pathway	PEF*	µg/dl	percent	PEF	µg/dl	percent
Soil Contact	7.8E-4	0.06	13%	5.6E-4	0.04	13%
Soil Ingestion	5.4E-3	0.43	87%	3.9E-3	0.31	87%
Inhalation	2.5E-6	0.00	0.0%	1.8E-6	0.00	0.0%
CHILDREN	**Typical Pathway contribution**	**Typical Pathway contribution**	**Typical Pathway contribution**	**with pica Pathway contribution**	**with pica Pathway contribution**	**with pica Pathway contribution**
Pathway	PEF*	µg/dl	percent	PEF	µg/dl	percent
Soil Contact	1.4E-4	0.01	1.7%		0.01	0.1%
Soil Ingestion	7.7E-3	0.61	98%	9.6E-2	7.68	100%
Inhalation	2.9E-6	0.00	0.0%		0.00	0.0%

*Pathway Exposure Factor

Click here for Equations

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX C

Screening Level Risk Assessment Calculations

GSI ENVIRONMENTAL

APPENDIX C TABLE C-1: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons							
TPH-d	**14**	--	--	260	SFBRWQCB, 2019	--	5E-02
TPH-mo	**22**	--	--	12,000	SFBRWQCB, 2019	--	2E-03
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	**0.015**	--	--	3,600	DTSC, 2025	--	4E-06
Acenaphthylene	0.020	--	--	--	--	--	--
Anthracene	**0.029**	--	--	18,000	USEPA, 2024	--	2E-06
Benzo(a)anthracene	**0.14**	1.1	USEPA, 2024	--	--	1E-07	--
Benzo(a) pyrene	**0.19**	0.11	USEPA, 2024	18	USEPA, 2024	2E-06	1E-02
Benzo(b) fluoranthene	**0.15**	1.1	USEPA, 2024	--	--	1E-07	--
Benzo(g,h,i) perylene	**0.11**	--	--	--	--	--	--
Benzo(k) fluoranthene	**0.15**	11	USEPA, 2024	--	--	1E-08	--
Chrysene	**0.17**	110	USEPA, 2024	--	--	2E-09	--
Dibenz(a,h) anthracene	**0.027**	0.028	DTSC, 2025	--	--	1E-06	--
Fluoranthene	**0.15**	--	--	2,400	USEPA, 2024	--	6E-05
Fluorene	0.020	--	--	2,400	USEPA, 2024	--	8E-06
Indeno (1,2,3-cd) pyrene	**0.15**	1.1	USEPA, 2024	--	--	1E-07	--
1-Methylnaphthalene	**0.022**	5.6	DTSC, 2025	0.18	USEPA, 2024	4E-09	1E-01
2-Methylnaphthalene	**0.032**	--	--	190	DTSC, 2025	--	2E-04
Naphthalene	**0.05**	2	DTSC, 2025	130	USEPA, 2024	3E-08	4E-04
Phenanthrene	**0.071**	--	--	--	--	--	--
Pyrene	**0.19**	--	--	1,800	USEPA, 2024	--	1E-04
BaPe[a]	**0.26**	0.9	DTSC, 2009	--	--	--	--
Pesticides							
Aldrin	0.0099	0.039	USEPA, 2024	2.3	USEPA, 2024	3E-07	4E-03
Alpha-BHC	0.0099	0.086	USEPA, 2024	57	USEPA, 2024	1E-07	2E-04
Beta-BHC	0.0099	0.3	USEPA, 2024	**--**	**--**	3E-08	--
Delta-BHC	0.0099	--	USEPA, 2024	0.0038	USEPA, 2024	--	3E+00
Gamma-BHC	0.0099	0.057	USEPA, 2024	21	USEPA, 2024	2E-07	5E-04
Chlordane	**0.057**	1.7	USEPA, 2024	35	USEPA, 2024	3E-08	2E-03
4,4'-DDD	0.0099	2.3	USEPA, 2024	32	USEPA, 2024	4E-09	3E-04
4,4'-DDE	0.0099	2.0	USEPA, 2024	39	USEPA, 2024	5E-09	3E-04
4,4'-DDT	0.0099	1.9	USEPA, 2024	37	USEPA, 2024	5E-09	3E-04
Dieldrin	0.0099	0.034	USEPA, 2024	3.2	USEPA, 2024	3E-07	3E-03
Endosulfan I	0.0099	--	--	470	USEPA, 2024	--	2E-05
Endosulfan II	0.0099	--	--	470	Surrogate[2]	--	2E-05
Endosulfan sulfate	0.0099	--	--	380	USEPA, 2024	--	3E-05
Endrin	0.0099	--	--	19	USEPA, 2024	--	5E-04
Endrin aldehyde	0.0099	--	--	19	Surrogate[3]	--	5E-04
Endrin ketone	0.0099	--	--	19	Surrogate[3]	--	5E-04
Heptachlor	0.0099	0.13	USEPA, 2024	7.8	USEPA, 2024	8E-08	1E-03
Heptachlor epoxide	0.0099	0.07	USEPA, 2024	1	USEPA, 2024	1E-07	1E-02
Methoxychlor	0.020	--	--	320	USEPA, 2024	--	6E-05
Toxaphene	0.20	0.45	DTSC, 2025	5.7	USEPA, 2024	4E-07	4E-02

GSI ENVIRONMENTAL

APPENDIX C TABLE C-1: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals							
Antimony	**2.7**	--	--	31	USEPA, 2024	--	9E-02
Arsenic	**150**	0.032	DTSC, 2025	0.41	DTSC, 2025	5E-03	4E+02
Barium	**300**	--	--	15,000	USEPA, 2024	--	2E-02
Beryllium	**0.73**	1,600	USEPA, 2024	16	DTSC, 2025	5E-10	5E-02
Cadmium	**0.71**	910	DTSC, 2025	7.1	USEPA, 2024	8E-10	1E-01
Chromium (Total)	**70**	--	--	85000	Surrogate[4]	--	8E-04
Cobalt	**23**	420	USEPA, 2024	23	USEPA, 2024	5E-08	1E+00
Copper	**37**	--	--	3,100	USEPA, 2024	--	1E-02
Lead[b]	**54**	--	--	80	DTSC, 2025	--	--
Mercury	**0.30**	--	--	0.67	DTSC, 2025	--	4E-01
Molybdenum	**1.5**	--	--	390	USEPA, 2024	--	4E-03
Nickel	**67**	15,000	DTSC, 2025	820	DTSC, 2025	4E-09	8E-02
Selenium	**1.3**	--	--	390	USEPA, 2024	--	3E-03
Silver	**0.51**	--	--	390	USEPA, 2024	--	1E-03
Thallium	2.9	--	--	0.78	USEPA, 2024	--	4E+00
Vanadium	**74**	--	--	390	USEPA, 2024	--	2E-01
Zinc	**100**	--	--	23,000	USEPA, 2024	--	4E-03
					TOTAL	5E-03	374

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.

2. The USEPA RSL for endosulfan I was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or "hot work" on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
PAH = polycyclic aromatic hydrocarbon
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency
background = consistent with background levels
ND = not detected in soil samples collected at the Site

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.

Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).

USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-2: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 2
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons							
TPH-d	**47**	--	--	260	SFBRWQCB, 2019	--	2E-01
TPH-mo	**89**	--	--	12,000	SFBRWQCB, 2019	--	7E-03
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.040	--	--	3,600	DTSC, 2025	--	1E-05
Acenaphthylene	0.10	--	--	--	--	--	--
Anthracene	0.040	--	--	18,000	USEPA, 2024	--	2E-06
Benzo(a)anthracene	**0.13**	1.1	USEPA, 2024	--	--	1E-07	--
Benzo(a)pyrene	**0.24**	0.11	USEPA, 2024	18	USEPA, 2024	2E-06	1E-02
Benzo(b)fluoranthene	**0.18**	1.1	USEPA, 2024	--	--	2E-07	--
Benzo(g,h,i)perylene	**0.21**	--	--	--	--	--	--
Benzo(k)fluoranthene	**0.18**	11	USEPA, 2024	--	--	2E-08	--
Chrysene	**0.14**	110	USEPA, 2024	--	--	1E-09	--
Dibenz(a,h)anthracene	0.040	0.028	DTSC, 2025	--	--	1E-06	--
Fluoranthene	**0.12**	--	--	2,400	USEPA, 2024	--	5E-05
Fluorene	0.040	--	--	2,400	USEPA, 2024	--	2E-05
Indeno(1,2,3-cd)pyrene	**0.25**	1.1	USEPA, 2024	--	--	2E-07	--
1-Methylnaphthalene	0.040	5.6	DTSC, 2025	0.18	USEPA, 2024	7E-09	2E-01
2-Methylnaphthalene	0.040	--	--	190	DTSC, 2025	--	2E-04
Naphthalene	0.040	2	DTSC, 2025	130	USEPA, 2024	2E-08	3E-04
Phenanthrene	**0.051**	--	--	--	--	--	--
Pyrene	**0.16**	--	--	1,800	USEPA, 2024	--	9E-05
BaPe[a]	**0.34**	0.9	DTSC, 2009	--	--	--	--
Pesticides							
Aldrin	0.010	0.039	USEPA, 2024	2.3	USEPA, 2024	3E-07	4E-03
Alpha-BHC	0.010	0.086	USEPA, 2024	57	USEPA, 2024	1E-07	2E-04
Beta-BHC	0.010	0.3	USEPA, 2024	**--**	**--**	3E-08	--
Delta-BHC	0.010	--	USEPA, 2024	0.0038	USEPA, 2024	--	3E+00
Gamma-BHC	0.010	0.057	USEPA, 2024	21	USEPA, 2024	2E-07	5E-04
Chlordane	0.10	1.7	USEPA, 2024	35	USEPA, 2024	6E-08	3E-03
4,4'-DDD	0.010	2.3	USEPA, 2024	32	USEPA, 2024	4E-09	3E-04
4,4'-DDE	**0.025**	2.0	USEPA, 2024	39	USEPA, 2024	1E-08	6E-04
4,4'-DDT	**0.024**	1.9	USEPA, 2024	37	USEPA, 2024	1E-08	6E-04
Dieldrin	**0.015**	0.034	USEPA, 2024	3.2	USEPA, 2024	4E-07	5E-03
Endosulfan I	0.010	--	--	470	USEPA, 2024	--	2E-05
Endosulfan II	0.010	--	--	470	Surrogate[2]	--	2E-05
Endosulfan sulfate	0.010	--	--	380	USEPA, 2024	--	3E-05
Endrin	0.010	--	--	19	USEPA, 2024	--	5E-04
Endrin aldehyde	0.010	--	--	19	Surrogate[3]	--	5E-04
Endrin ketone	0.010	--	--	19	Surrogate[3]	--	5E-04
Heptachlor	0.010	0.13	USEPA, 2024	7.8	USEPA, 2024	8E-08	1E-03
Heptachlor epoxide	0.010	0.07	USEPA, 2024	1	USEPA, 2024	1E-07	1E-02
Methoxychlor	0.020	--	--	320	USEPA, 2024	--	6E-05
Toxaphene	0.20	0.45	DTSC, 2025	5.7	USEPA, 2024	4E-07	4E-02

GSI ENVIRONMENTAL

APPENDIX C TABLE C-2: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 2
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals							
Antimony	**3.6**	--	--	31	USEPA, 2024	--	1E-01
Arsenic	**310**	0.032	DTSC, 2025	0.41	DTSC, 2025	1E-02	8E+02
Barium	**280**	--	--	15,000	USEPA, 2024	--	2E-02
Beryllium	**0.73**	1,600	USEPA, 2024	16	DTSC, 2025	5E-10	5E-02
Cadmium	0.50	910	DTSC, 2025	7.1	USEPA, 2024	5E-10	7E-02
Chromium (Total)[4]	**73**	--	--	85000	Surrogate[4]	--	9E-04
Cobalt	**14**	420	USEPA, 2024	23	USEPA, 2024	3E-08	6E-01
Copper	**81**	--	--	3,100	USEPA, 2024	--	3E-02
Lead[b]	**210**	--	--	80	DTSC, 2025	--	--
Mercury	**11**	--	--	0.67	DTSC, 2025	--	2E+01
Molybdenum	**0.72**	--	--	390	USEPA, 2024	--	2E-03
Nickel	**83**	15,000	DTSC, 2025	820	DTSC, 2025	6E-09	1E-01
Selenium	**1.6**	--	--	390	USEPA, 2024	--	4E-03
Silver	0.50	--	--	390	USEPA, 2024	--	1E-03
Thallium	0.50	--	--	0.78	USEPA, 2024	--	6E-01
Vanadium	**73**	--	--	390	USEPA, 2024	--	2E-01
Zinc	**190**	--	--	23,000	USEPA, 2024	--	8E-03
Baseline Scenario					**TOTAL**	1E-02	777

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.

2. The USEPA RSL for endosulfan I was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

APPENDIX C TABLE C-2: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 2
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
PAH = polycyclic aromatic hydrocarbon
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-3: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons							
TPH-d	**160**	--	--	260	SFBRWQCB, 2019	--	6E-01
TPH-mo	**490**	--	--	12,000	SFBRWQCB, 2019	--	4E-02
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.50	--	--	3,600	DTSC, 2025	--	1E-04
Acenaphthylene	0.50	--	--	--	--	--	--
Anthracene	0.50	--	--	18,000	USEPA, 2024	--	3E-05
Benzo(a)anthracene	**0.16**	1.1	USEPA, 2024	--	--	1E-07	--
Benzo(a)pyrene	**0.28**	0.11	USEPA, 2024	18	USEPA, 2024	3E-06	2E-02
Benzo(b)fluoranthene	**0.28**	1.1	USEPA, 2024	--	--	3E-07	--
Benzo(g,h,i)perylene	**0.22**	--	--	--	--	--	--
Benzo(k)fluoranthene	**0.24**	11	USEPA, 2024	--	--	2E-08	--
Chrysene	**0.22**	110	USEPA, 2024	--	--	2E-09	--
Dibenz(a,h)anthracene	0.50	0.028	DTSC, 2025	--	--	2E-05	--
Fluoranthene	**0.16**	--	--	2,400	USEPA, 2024	--	7E-05
Fluorene	0.50	--	--	2,400	USEPA, 2024	--	2E-04
Indeno(1,2,3-cd)pyrene	**0.27**	1.1	USEPA, 2024	--	--	2E-07	--
1-Methylnaphthalene	0.50	5.6	DTSC, 2025	0.18	USEPA, 2024	9E-08	3E+00
2-Methylnaphthalene	0.50	--	--	190	DTSC, 2025	--	3E-03
Naphthalene	0.50	2	DTSC, 2025	130	USEPA, 2024	3E-07	4E-03
Phenanthrene	0.50	--	--	--	--	--	--
Pyrene	**0.19**	--	--	1,800	USEPA, 2024	--	1E-04
BaPe[a]	**0.45**	0.9	DTSC, 2009	--	--	--	--
Pesticides							
Aldrin	0.025	0.039	USEPA, 2024	2.3	USEPA, 2024	6E-07	1E-02
Alpha-BHC	0.025	0.086	USEPA, 2024	57	USEPA, 2024	3E-07	4E-04
Beta-BHC	0.025	0.3	USEPA, 2024	--	--	8E-08	--
Delta-BHC	0.025	--	USEPA, 2024	0.0038	USEPA, 2024	--	7E+00
Gamma-BHC	0.025	0.057	USEPA, 2024	21	USEPA, 2024	4E-07	1E-03
Chlordane	0.25	1.7	USEPA, 2024	35	USEPA, 2024	1E-07	7E-03
4,4'-DDD	0.025	2.3	USEPA, 2024	32	USEPA, 2024	1E-08	8E-04
4,4'-DDE	**0.011**	2.0	USEPA, 2024	39	USEPA, 2024	6E-09	3E-04
4,4'-DDT	**0.040**	1.9	USEPA, 2024	37	USEPA, 2024	2E-08	1E-03
Dieldrin	**0.010**	0.034	USEPA, 2024	3.2	USEPA, 2024	3E-07	3E-03
Endosulfan I	0.025	--	--	470	USEPA, 2024	--	5E-05
Endosulfan II	0.025	--	--	470	Surrogate[2]	--	5E-05
Endosulfan sulfate	0.025	--	--	380	USEPA, 2024	--	7E-05
Endrin	0.025	--	--	19	USEPA, 2024	--	1E-03
Endrin aldehyde	0.025	--	--	19	Surrogate[3]	--	1E-03
Endrin ketone	0.025	--	--	19	Surrogate[3]	--	1E-03
Heptachlor	0.025	0.13	USEPA, 2024	7.8	USEPA, 2024	2E-07	3E-03
Heptachlor epoxide	0.025	0.07	USEPA, 2024	1	USEPA, 2024	4E-07	3E-02
Methoxychlor	0.050	--	--	320	USEPA, 2024	--	2E-04
Toxaphene	0.50	0.45	DTSC, 2025	5.7	USEPA, 2024	1E-06	9E-02

GSI ENVIRONMENTAL

APPENDIX C TABLE C-3: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals							
Antimony	3.0	--	--	31	USEPA, 2024	--	1E-01
Arsenic	**120**	0.032	DTSC, 2025	0.41	DTSC, 2025	4E-03	3E+02
Barium	**190**	--	--	15,000	USEPA, 2024	--	1E-02
Beryllium	**0.56**	1,600	USEPA, 2024	16	DTSC, 2025	4E-10	4E-02
Cadmium	**0.72**	910	DTSC, 2025	7.1	USEPA, 2024	8E-10	1E-01
Chromium (Total)[4]	**56**	--	--	85000	Surrogate[4]	--	7E-04
Cobalt	**15**	420	USEPA, 2024	23	USEPA, 2024	4E-08	7E-01
Copper	**60**	--	--	3,100	USEPA, 2024	--	2E-02
Lead[b]	**490**	--	--	80	DTSC, 2025	--	--
Mercury	**16**	--	--	0.67	DTSC, 2025	--	2E+01
Molybdenum	0.99	--	--	390	USEPA, 2024	--	3E-03
Nickel	**65**	15,000	DTSC, 2025	820	DTSC, 2025	4E-09	8E-02
Selenium	3.0	--	--	390	USEPA, 2024	--	8E-03
Silver	**0.56**	--	--	390	USEPA, 2024	--	1E-03
Thallium	3.0	--	--	0.78	USEPA, 2024	--	4E+00
Vanadium	**50**	--	--	390	USEPA, 2024	--	1E-01
Zinc	**150**	--	--	23,000	USEPA, 2024	--	7E-03
Baseline Scenario					**TOTAL**	4E-03	332

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.

2. The USEPA RSL for endosulfan I was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

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APPENDIX C TABLE C-3: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 3

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
PAH = polycyclic aromatic hydrocarbon
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

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APPENDIX C TABLE C-4: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons							
TPH-d	**45**	--	--	260	SFBRWQCB, 2019	--	2E-01
TPH-mo	**76**	--	--	12,000	SFBRWQCB, 2019	--	6E-03
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	**0.012**	--	--	3,600	DTSC, 2025	--	3E-06
Acenaphthylene	0.25	--	--	--	--	--	--
Anthracene	**0.048**	--	--	18,000	USEPA, 2024	--	3E-06
Benzo(a)anthracene	**1.7**	1.1	USEPA, 2024	--	--	2E-06	--
Benzo(a) pyrene	**3.5**	0.11	USEPA, 2024	18	USEPA, 2024	3E-05	2E-01
Benzo(b) fluoranthene	**2.4**	1.1	USEPA, 2024	--	--	2E-06	--
Benzo(g,h,i) perylene	**2.3**	--	--	--	--	--	--
Benzo(k) fluoranthene	**2.4**	11	USEPA, 2024	--	--	2E-07	--
Chrysene	**1.8**	110	USEPA, 2024	--	--	2E-08	--
Dibenz(a,h) anthracene	**0.54**	0.028	DTSC, 2025	--	--	2E-05	--
Fluoranthene	**1.1**	--	--	2,400	USEPA, 2024	--	5E-04
Fluorene	**0.021**	--	--	2,400	USEPA, 2024	--	9E-06
Indeno (1,2,3-cd) pyrene	**3.1**	1.1	USEPA, 2024	--	--	3E-06	--
1-Methylnaphthalene	0.25	5.6	DTSC, 2025	0.18	USEPA, 2024	4E-08	1E+00
2-Methylnaphthalene	0.25	--	--	190	DTSC, 2025	--	1E-03
Naphthalene	0.25	2.0	DTSC, 2025	130	USEPA, 2024	1E-07	2E-03
Phenanthrene	**0.26**	--	--	--	--	--	--
Pyrene	**1.5**	--	--	1,800	USEPA, 2024	--	8E-04
BaPe[a]	**4.8**	0.9	DTSC, 2009	--	--	--	--
Pesticides							
Aldrin	0.025	0.039	USEPA, 2024	2.3	USEPA, 2024	6E-07	1E-02
Alpha-BHC	0.025	0.086	USEPA, 2024	57	USEPA, 2024	3E-07	4E-04
Beta-BHC	0.025	0.3	USEPA, 2024	**--**	**--**	8E-08	--
Delta-BHC	0.025	--	USEPA, 2024	0.0038	USEPA, 2024	--	7E+00
Gamma-BHC	0.025	0.057	USEPA, 2024	21	USEPA, 2024	4E-07	1E-03
Chlordane	0.25	1.7	USEPA, 2024	35	USEPA, 2024	1E-07	7E-03
4,4'-DDD	0.025	2.3	USEPA, 2024	32	USEPA, 2024	1E-08	8E-04
4,4'-DDE	**0.037**	2.0	USEPA, 2024	39	USEPA, 2024	2E-08	9E-04
4,4'-DDT	**0.14**	1.9	USEPA, 2024	37	USEPA, 2024	7E-08	4E-03
Dieldrin	0.025	0.034	USEPA, 2024	3.2	USEPA, 2024	7E-07	8E-03
Endosulfan I	0.025	--	--	470	USEPA, 2024	--	5E-05
Endosulfan II	0.025	--	--	470	Surrogate[2]	--	5E-05
Endosulfan sulfate	0.025	--	--	380	USEPA, 2024	--	7E-05
Endrin	0.025	--	--	19	USEPA, 2024	--	1E-03
Endrin aldehyde	0.025	--	--	19	Surrogate[3]	--	1E-03
Endrin ketone	0.025	--	--	19	Surrogate[3]	--	1E-03
Heptachlor	0.025	0.13	USEPA, 2024	7.8	USEPA, 2024	2E-07	3E-03
Heptachlor epoxide	0.025	0.07	USEPA, 2024	1.0	USEPA, 2024	4E-07	3E-02
Methoxychlor	0.050	--	--	320	USEPA, 2024	--	2E-04
Toxaphene	0.50	0.45	DTSC, 2025	5.7	USEPA, 2024	1E-06	9E-02

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APPENDIX C TABLE C-4: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals							
Antimony	3.1	--	--	31	USEPA, 2024	--	1E-01
Arsenic	**140**	0.032	DTSC, 2025	0.41	DTSC, 2025	4E-03	3E+02
Barium	**200**	--	--	15,000	USEPA, 2024	--	1E-02
Beryllium	0.52	1,600	USEPA, 2024	16	DTSC, 2025	3E-10	3E-02
Cadmium	**1.9**	910	DTSC, 2025	7.1	USEPA, 2024	2E-09	3E-01
Chromium (Total)[4]	**75**	--	--	85000	Surrogate[4]	--	9E-04
Cobalt	**17**	420	USEPA, 2024	23	USEPA, 2024	4E-08	7E-01
Copper	**81**	--	--	3,100	USEPA, 2024	--	3E-02
Lead[b]	**280**	--	--	80	DTSC, 2025	--	--
Mercury	**4.8**	--	--	0.67	DTSC, 2025	--	7E+00
Molybdenum	1.0	--	--	390	USEPA, 2024	--	3E-03
Nickel	**120**	15,000	DTSC, 2025	820	DTSC, 2025	8E-09	1E-01
Selenium	3.1	--	--	390	USEPA, 2024	--	8E-03
Silver	0.52	--	--	390	USEPA, 2024	--	1E-03
Thallium	3.1	--	--	0.78	USEPA, 2024	--	4E+00
Vanadium	**42**	--	--	390	USEPA, 2024	--	1E-01
Zinc	**440**	--	--	23,000	USEPA, 2024	--	2E-02
Baseline Scenario					**TOTAL**	4E-03	363

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.
Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.

2. The USEPA RSL for endosulfan I was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

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APPENDIX C TABLE C-4: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
PAH = polycyclic aromatic hydrocarbon
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

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APPENDIX C TABLE C-5: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 1
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	**14**	--	--	--	1,100	SFBRWQCB, 2019	--	1E-02
TPH-mo	**22**	--	--	--	54,000	SFBRWQCB, 2019	--	4E-04
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	**0.015**	--	--	--	23,400	RSL Calculator	--	6E-07
Acenaphthylene	0.020	--	--	--	--	--	--	--
Anthracene	**0.029**	--	--	--	117,000	RSL Calculator	--	2E-07
Benzo(a)anthracene	**0.14**	Yes	80	RSL Calculator	--	--	2E-09	--
Benzo(a)pyrene	**0.19**	Yes	8.3	RSL Calculator	--	--	2E-08	--
Benzo(b)fluoranthene	**0.15**	Yes	83	RSL Calculator	--	--	2E-09	--
Benzo(g,h,i) perylene	**0.11**	--	--	--	--	--	--	--
Benzo(k)fluoranthene	**0.15**	Yes	654	RSL Calculator	--	--	2E-10	--
Chrysene	**0.17**	Yes	6,540	RSL Calculator	--	--	3E-11	--
Dibenz(a,h) anthracene	**0.027**	Yes	2.1	RSL Calculator	--	--	1E-08	--
Fluoranthene	**0.15**	--	--	--	11,700	RSL Calculator	--	1E-05
Fluorene	0.020	--	--	--	94	RSL Calculator	--	2E-04
Indeno (1,2,3-cd) pyrene	**0.15**	Yes	83	RSL Calculator	--	--	2E-09	--
1-Methylnaphthalene	**0.022**	--	167	RSL Calculator	2	RSL Calculator	1E-10	1E-02
2-Methylnaphthalene	**0.032**	--	--	--	468	RSL Calculator	--	7E-05
Naphthalene	**0.050**	--	40	RSL Calculator	125	RSL Calculator	1E-09	4E-04
Phenanthrene	**0.071**	--	--	--	--	--	--	--
Pyrene	**0.19**	--	--	--	35,100	RSL Calculator	--	5E-06
BaPe[a]	**0.26**	--	0.9	DTSC, 2009	--	--	--	--
Pesticides								
Aldrin	0.0099	--	1.34	RSL Calculator	13.6	RSL Calculator	7E-09	7E-04
Alpha-BHC	0.0099	--	1.6	RSL Calculator	276	RSL Calculator	6E-09	4E-05
Beta-BHC	0.0099	--	5.5	RSL Calculator	83	RSL Calculator	2E-09	1E-04
Delta-BHC	0.0099	--	--	--	--	--	--	--
Gamma-BHC	0.0099	--	14	RSL Calculator	0.171	RSL Calculator	7E-10	6E-02
Chlordane	**0.057**	--	42	RSL Calculator	80	RSL Calculator	1E-09	7E-04
4,4'-DDD	0.0099	--	42	RSL Calculator	69	RSL Calculator	2E-10	1E-04
4,4'-DDE	0.0099	--	68	RSL Calculator	102	RSL Calculator	1E-10	1E-04
4,4'-DDT	0.0099	--	50	RSL Calculator	118	RSL Calculator	2E-10	8E-05
Dieldrin	0.0099	--	0.62	RSL Calculator	14	RSL Calculator	2E-08	7E-04
Endosulfan I	0.0099	--	--	--	414	Surrogate[3]	--	2E-05
Endosulfan II	0.0099	--	--	--	414	Surrogate[3]	--	2E-05
Endosulfan sulfate	0.0099	--	--	--	414	RSL Calculator	--	2E-05
Endrin	0.0099	--	--	--	83	RSL Calculator	--	1E-04
Endrin aldehyde	0.0099	--	--	--	83	Surrogate[4]	--	1E-04
Endrin ketone	0.0099	--	--	--	83	Surrogate[4]	--	1E-04
Heptachlor	0.0099	--	4.4	RSL Calculator	34	RSL Calculator	2E-09	3E-04
Heptachlor epoxide	0.0099	--	2.4	RSL Calculator	4.4	RSL Calculator	4E-09	2E-03
Methoxychlor	0.020	--	--	--	689	RSL Calculator	--	3E-05
Toxaphene	0.20	Yes	9.1	RSL Calculator	41	RSL Calculator	2E-08	5E-03

GSI ENVIRONMENTAL

APPENDIX C TABLE C-5: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	**2.7**	--	--	--	132	RSL Calculator	--	2E-02
Arsenic	**150**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	6E-05	1E+02
Barium	**300**	--	--	--	16,000	RSL Calculator	--	2E-02
Beryllium	**0.73**	Yes	128	RSL Calculator	68	RSL Calculator	6E-09	1E-02
Cadmium	**0.71**	Yes	73	RSL Calculator	107	RSL Calculator	1E-08	7E-03
Chromium (Total)	**70**	--	--	--	--	--	--	--
Cobalt	**23**	--	34	RSL Calculator	78	RSL Calculator	7E-07	3E-01
Copper	**37**	--	--	--	6,790	RSL Calculator	--	5E-03
Lead[b]	**54**	--	--	--	136	LeadSpread 9	--	--
Mercury	**0.30**	Yes	--	--	54.3	RSL Calculator	--	6E-03
Molybdenum	**1.5**	--	--	--	5,950	RSL Calculator	--	3E-04
Nickel	**67**	Yes	1,180	RSL Calculator	3730	RSL Calculator	6E-08	2E-02
Selenium	**1.3**	--	--	--	1,660	RSL Calculator	--	8E-04
Silver	**0.51**	--	--	--	1,700	RSL Calculator	--	3E-04
Thallium	2.9	--	--	--	14	RSL Calculator	--	2E-01
Vanadium	**74**	--	--	--	374	RSL Calculator	--	2E-01
Zinc	**100**	--	--	--	102,000	RSL Calculator	--	1E-03
Baseline Scenario						**TOTAL**	6E-05	132

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.

2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.

3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria published for these chemicals.

4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no toxicity criteria published for these chemicals.

APPENDIX C TABLE C-5: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 1
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

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APPENDIX C TABLE C-6: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 2
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	**47**	--	--	--	1,100	SFBRWQCB, 2019	--	4E-02
TPH-mo	**89**	--	--	--	54,000	SFBRWQCB, 2019	--	2E-03
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.040	--	--	--	23,400	RSL Calculator	--	2E-06
Acenaphthylene	0.10	--	--	--	--	--	--	--
Anthracene	0.040	--	--	--	117,000	RSL Calculator	--	3E-07
Benzo(a)anthracene	**0.13**	Yes	80	RSL Calculator	--	--	2E-09	--
Benzo(a)pyrene	**0.24**	Yes	8.3	RSL Calculator	--	--	3E-08	--
Benzo(b)fluoranthene	**0.18**	Yes	83	RSL Calculator	--	--	2E-09	--
Benzo(g,h,i) perylene	**0.21**	--	--	--	--	--	--	--
Benzo(k)fluoranthene	**0.18**	Yes	654	RSL Calculator	--	--	3E-10	--
Chrysene	**0.14**	Yes	6,540	RSL Calculator	--	--	2E-11	--
Dibenz(a,h) anthracene	0.040	Yes	2.1	RSL Calculator	--	--	2E-08	--
Fluoranthene	**0.12**	--	--	--	11,700	RSL Calculator	--	1E-05
Fluorene	0.040	--	--	--	94	RSL Calculator	--	4E-04
Indeno (1,2,3-cd) pyrene	**0.25**	Yes	83	RSL Calculator	--	--	3E-09	--
1-Methylnaphthalene	0.040	--	167	RSL Calculator	2	RSL Calculator	2E-10	3E-02
2-Methylnaphthalene	0.040	--	--	--	468	RSL Calculator	--	9E-05
Naphthalene	0.040	--	40	RSL Calculator	125	RSL Calculator	1E-09	3E-04
Phenanthrene	**0.051**	--	--	--	--	--	--	--
Pyrene	**0.16**	--	--	--	35,100	RSL Calculator	--	5E-06
BaPe[a]	**0.34**	--	0.9	DTSC, 2009	--	--	--	--
Pesticides								
Aldrin	0.010	--	1.34	RSL Calculator	13.6	RSL Calculator	7E-09	7E-04
Alpha-BHC	0.010	--	1.6	RSL Calculator	276	RSL Calculator	6E-09	4E-05
Beta-BHC	0.010	--	5.5	RSL Calculator	83	RSL Calculator	2E-09	1E-04
Delta-BHC	0.010	--	--	--	--	--	--	--
Gamma-BHC	0.010	--	14	RSL Calculator	0.171	RSL Calculator	7E-10	6E-02
Chlordane	0.10	--	42	RSL Calculator	80	RSL Calculator	2E-09	1E-03
4,4'-DDD	0.010	--	42	RSL Calculator	69	RSL Calculator	2E-10	1E-04
4,4'-DDE	**0.025**	--	68	RSL Calculator	102	RSL Calculator	4E-10	2E-04
4,4'-DDT	**0.024**	--	50	RSL Calculator	118	RSL Calculator	5E-10	2E-04
Dieldrin	**0.015**	--	0.62	RSL Calculator	14	RSL Calculator	2E-08	1E-03
Endosulfan I	0.010	--	--	--	414	Surrogate[3]	--	2E-05
Endosulfan II	0.010	--	--	--	414	Surrogate[3]	--	2E-05
Endosulfan sulfate	0.010	--	--	--	414	RSL Calculator	--	2E-05
Endrin	0.010	--	--	--	83	RSL Calculator	--	1E-04
Endrin aldehyde	0.010	--	--	--	83	Surrogate[4]	--	1E-04
Endrin ketone	0.010	--	--	--	83	Surrogate[4]	--	1E-04
Heptachlor	0.010	--	4.4	RSL Calculator	34	RSL Calculator	2E-09	3E-04
Heptachlor epoxide	0.010	--	2.4	RSL Calculator	4.4	RSL Calculator	4E-09	2E-03
Methoxychlor	0.020	--	--	--	689	RSL Calculator	--	3E-05
Toxaphene	0.20	Yes	9.1	RSL Calculator	41	RSL Calculator	2E-08	5E-03

GSI ENVIRONMENTAL

APPENDIX C TABLE C-6: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 2
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	**3.6**	--	--	--	132	RSL Calculator	--	3E-02
Arsenic	**310**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	1E-04	3E+02
Barium	**280**	--	--	--	16,000	RSL Calculator	--	2E-02
Beryllium	**0.73**	Yes	128	RSL Calculator	68	RSL Calculator	6E-09	1E-02
Cadmium	0.50	Yes	73	RSL Calculator	107	RSL Calculator	7E-09	5E-03
Chromium (Total)	**73**	--	--	--	--	--	--	--
Cobalt	**14**	--	34	RSL Calculator	78	RSL Calculator	4E-07	2E-01
Copper	**81**	--	--	--	6,790	RSL Calculator	--	1E-02
Lead[b]	**210**	--	--	--	136	LeadSpread 9	--	--
Mercury	**11**	Yes	--	--	54.3	RSL Calculator	--	2E-01
Molybdenum	**0.72**	--	--	--	5,950	RSL Calculator	--	1E-04
Nickel	**83**	Yes	1,180	RSL Calculator	3730	RSL Calculator	7E-08	2E-02
Selenium	**1.6**	--	--	--	1,660	RSL Calculator	--	1E-03
Silver	0.50	--	--	--	1,700	RSL Calculator	--	3E-04
Thallium	0.50	--	--	--	14	RSL Calculator	--	4E-02
Vanadium	**73**	--	--	--	374	RSL Calculator	--	2E-01
Zinc	**190**	--	--	--	102,000	RSL Calculator	--	2E-03
Baseline Scenario						**TOTAL**	1E-04	273

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.
2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.
3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria published for these chemicals.
4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no toxicity criteria published for these chemicals.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-6: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 2

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-7: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 3
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	**160**	--	--	--	1,100	SFBRWQCB, 2019	--	1E-01
TPH-mo	**490**	--	--	--	54,000	SFBRWQCB, 2019	--	9E-03
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.50	--	--	--	23,400	RSL Calculator	--	2E-05
Acenaphthylene	0.50	--	--	--	--	--	--	--
Anthracene	0.50	--	--	--	117,000	RSL Calculator	--	4E-06
Benzo(a)anthracene	**0.16**	Yes	80	RSL Calculator	--	--	2E-09	--
Benzo(a)pyrene	**0.28**	Yes	8.3	RSL Calculator	--	--	3E-08	--
Benzo(b)fluoranthene	**0.28**	Yes	83	RSL Calculator	--	--	3E-09	--
Benzo(g,h,i) perylene	**0.22**	--	--	--	--	--	--	--
Benzo(k)fluoranthene	**0.24**	Yes	654	RSL Calculator	--	--	4E-10	--
Chrysene	**0.22**	Yes	6,540	RSL Calculator	--	--	3E-11	--
Dibenz(a,h) anthracene	0.50	Yes	2.1	RSL Calculator	--	--	2E-07	--
Fluoranthene	**0.16**	--	--	--	11,700	RSL Calculator	--	1E-05
Fluorene	0.50	--	--	--	94	RSL Calculator	--	5E-03
Indeno (1,2,3-cd) pyrene	**0.27**	Yes	83	RSL Calculator	--	--	3E-09	--
1-Methylnaphthalene	0.50	--	167	RSL Calculator	2	RSL Calculator	3E-09	3E-01
2-Methylnaphthalene	0.50	--	--	--	468	RSL Calculator	--	1E-03
Naphthalene	0.50	--	40	RSL Calculator	125	RSL Calculator	1E-08	4E-03
Phenanthrene	0.50	--	--	--	--	--	--	--
Pyrene	**0.19**	--	--	--	35,100	RSL Calculator	--	5E-06
BaPe[a]	**0.45**	--	0.9	DTSC, 2009	--	--	--	--
Pesticides								
Aldrin	0.025	--	1.34	RSL Calculator	13.6	RSL Calculator	2E-08	2E-03
Alpha-BHC	0.025	--	1.6	RSL Calculator	276	RSL Calculator	2E-08	9E-05
Beta-BHC	0.025	--	5.5	RSL Calculator	83	RSL Calculator	5E-09	3E-04
Delta-BHC	0.025	--	--	--	--	--	--	--
Gamma-BHC	0.025	--	14	RSL Calculator	0.171	RSL Calculator	2E-09	1E-01
Chlordane	0.25	--	42	RSL Calculator	80	RSL Calculator	6E-09	3E-03
4,4'-DDD	0.025	--	42	RSL Calculator	69	RSL Calculator	6E-10	4E-04
4,4'-DDE	**0.011**	--	68	RSL Calculator	102	RSL Calculator	2E-10	1E-04
4,4'-DDT	**0.040**	--	50	RSL Calculator	118	RSL Calculator	8E-10	3E-04
Dieldrin	**0.010**	--	0.62	RSL Calculator	14	RSL Calculator	2E-08	7E-04
Endosulfan I	0.025	--	--	--	414	Surrogate[3]	--	6E-05
Endosulfan II	0.025	--	--	--	414	Surrogate[3]	--	6E-05
Endosulfan sulfate	0.025	--	--	--	414	RSL Calculator	--	6E-05
Endrin	0.025	--	--	--	83	RSL Calculator	--	3E-04
Endrin aldehyde	0.025	--	--	--	83	Surrogate[4]	--	3E-04
Endrin ketone	0.025	--	--	--	83	Surrogate[4]	--	3E-04
Heptachlor	0.025	--	4.4	RSL Calculator	34	RSL Calculator	6E-09	7E-04
Heptachlor epoxide	0.025	--	2.4	RSL Calculator	4.4	RSL Calculator	1E-08	6E-03
Methoxychlor	0.050	--	--	--	689	RSL Calculator	--	7E-05
Toxaphene	0.50	Yes	9.1	RSL Calculator	41	RSL Calculator	6E-08	1E-02

GSI ENVIRONMENTAL

APPENDIX C TABLE C-7: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 3
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	3.0	--	--	--	132	RSL Calculator	--	2E-02
Arsenic	**120**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	5E-05	1E+02
Barium	**190**	--	--	--	16,000	RSL Calculator	--	1E-02
Beryllium	**0.56**	Yes	128	RSL Calculator	68	RSL Calculator	4E-09	8E-03
Cadmium	**0.72**	Yes	73	RSL Calculator	107	RSL Calculator	1E-08	7E-03
Chromium (Total)	**56**	--	--	--	--	--	--	--
Cobalt	**15**	--	34	RSL Calculator	78	RSL Calculator	4E-07	2E-01
Copper	**60**	--	--	--	6,790	RSL Calculator	--	9E-03
Lead[b]	**490**	--	--	--	136	LeadSpread 9	--	--
Mercury	**16**	Yes	--	--	54.3	RSL Calculator	--	3E-01
Molybdenum	0.99	--	--	--	5,950	RSL Calculator	--	2E-04
Nickel	**65**	Yes	1,180	RSL Calculator	3730	RSL Calculator	6E-08	2E-02
Selenium	3.0	--	--	--	1,660	RSL Calculator	--	2E-03
Silver	**0.56**	--	--	--	1,700	RSL Calculator	--	3E-04
Thallium	3.0	--	--	--	14	RSL Calculator	--	2E-01
Vanadium	**50**	--	--	--	374	RSL Calculator	--	1E-01
Zinc	**150**	--	--	--	102,000	RSL Calculator	--	1E-03
Baseline Scenario						**TOTAL**	5E-05	107

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.
2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.
3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria published for these chemicals.
4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no toxicity criteria published for these chemicals.

APPENDIX C TABLE C-7: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 3
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

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APPENDIX C TABLE C-8: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 4
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	**45**	--	--	--	1,100	SFBRWQCB, 2019	--	4E-02
TPH-mo	**76**	--	--	--	54,000	SFBRWQCB, 2019	--	1E-03
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	**0.012**	--	--	--	23,400	RSL Calculator	--	5E-07
Acenaphthylene	0.25	--	--	--	--	--	--	--
Anthracene	**0.048**	--	--	--	117,000	RSL Calculator	--	4E-07
Benzo(a)anthracene	**1.7**	Yes	80	RSL Calculator	--	--	2E-08	--
Benzo(a)pyrene	**3.5**	Yes	8.3	RSL Calculator	--	--	4E-07	--
Benzo(b)fluoranthene	**2.4**	Yes	83	RSL Calculator	--	--	3E-08	--
Benzo(g,h,i) perylene	**2.3**	--	--	--	--	--	--	--
Benzo(k)fluoranthene	**2.4**	Yes	654	RSL Calculator	--	--	4E-09	--
Chrysene	**1.8**	Yes	6,540	RSL Calculator	--	--	3E-10	--
Dibenz(a,h) anthracene	**0.54**	Yes	2.1	RSL Calculator	--	--	3E-07	--
Fluoranthene	**1.1**	--	--	--	11,700	RSL Calculator	--	9E-05
Fluorene	**0.021**	--	--	--	94	RSL Calculator	--	2E-04
Indeno (1,2,3-cd) pyrene	**3.1**	Yes	83	RSL Calculator	--	--	4E-08	--
1-Methylnaphthalene	0.25	--	167	RSL Calculator	2	RSL Calculator	1E-09	2E-01
2-Methylnaphthalene	0.25	--	--	--	468	RSL Calculator	--	5E-04
Naphthalene	0.25	--	40	RSL Calculator	125	RSL Calculator	6E-09	2E-03
Phenanthrene	**0.26**	--	--	--	--	--	--	--
Pyrene	**1.5**	--	--	--	35,100	RSL Calculator	--	4E-05
BaPe[a]	**4.8**	--	0.9	DTSC, 2009	--	--	--	--
Pesticides								
Aldrin	0.025	--	1.34	RSL Calculator	13.6	RSL Calculator	2E-08	2E-03
Alpha-BHC	0.025	--	1.6	RSL Calculator	276	RSL Calculator	2E-08	9E-05
Beta-BHC	0.025	--	5.5	RSL Calculator	83	RSL Calculator	5E-09	3E-04
Delta-BHC	0.025	--	--	--	--	--	--	--
Gamma-BHC	0.025	--	14	RSL Calculator	0.171	RSL Calculator	2E-09	1E-01
Chlordane	0.25	--	42	RSL Calculator	80	RSL Calculator	6E-09	3E-03
4,4'-DDD	0.025	--	42	RSL Calculator	69	RSL Calculator	6E-10	4E-04
4,4'-DDE	**0.037**	--	68	RSL Calculator	102	RSL Calculator	5E-10	4E-04
4,4'-DDT	**0.14**	--	50	RSL Calculator	118	RSL Calculator	3E-09	1E-03
Dieldrin	0.025	--	0.62	RSL Calculator	14	RSL Calculator	4E-08	2E-03
Endosulfan I	0.025	--	--	--	414	Surrogate[3]	--	6E-05
Endosulfan II	0.025	--	--	--	414	Surrogate[3]	--	6E-05
Endosulfan sulfate	0.025	--	--	--	414	RSL Calculator	--	6E-05
Endrin	0.025	--	--	--	83	RSL Calculator	--	3E-04
Endrin aldehyde	0.025	--	--	--	83	Surrogate[4]	--	3E-04
Endrin ketone	0.025	--	--	--	83	Surrogate[4]	--	3E-04
Heptachlor	0.025	--	4.4	RSL Calculator	34	RSL Calculator	6E-09	7E-04
Heptachlor epoxide	0.025	--	2.4	RSL Calculator	4.4	RSL Calculator	1E-08	6E-03
Methoxychlor	0.050	--	--	--	689	RSL Calculator	--	7E-05
Toxaphene	0.50	Yes	9.1	RSL Calculator	41	RSL Calculator	6E-08	1E-02

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APPENDIX C TABLE C-8: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	3.1	--	--	--	132	RSL Calculator	--	2E-02
Arsenic	**140**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	6E-05	1E+02
Barium	**200**	--	--	--	16,000	RSL Calculator	--	1E-02
Beryllium	0.52	Yes	128	RSL Calculator	68	RSL Calculator	4E-09	8E-03
Cadmium	**1.9**	Yes	73	RSL Calculator	107	RSL Calculator	3E-08	2E-02
Chromium (Total)	**75**	--	--	--	--	--	--	--
Cobalt	**17**	--	34	RSL Calculator	78	RSL Calculator	5E-07	2E-01
Copper	**81**	--	--	--	6,790	RSL Calculator	--	1E-02
Lead[b]	**280**	--	--	--	136	LeadSpread 9	--	--
Mercury	**4.8**	Yes	--	--	54.3	RSL Calculator	--	9E-02
Molybdenum	1.0	--	--	--	5,950	RSL Calculator	--	2E-04
Nickel	**120**	Yes	1,180	RSL Calculator	3730	RSL Calculator	1E-07	3E-02
Selenium	3.1	--	--	--	1,660	RSL Calculator	--	2E-03
Silver	0.52	--	--	--	1,700	RSL Calculator	--	3E-04
Thallium	3.1	--	--	--	14	RSL Calculator	--	2E-01
Vanadium	**42**	--	--	--	374	RSL Calculator	--	1E-01
Zinc	**440**	--	--	--	102,000	RSL Calculator	--	4E-03
Baseline Scenario						**TOTAL**	6E-05	124

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.
2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.
3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria published for these chemicals.
4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no toxicity criteria published for these chemicals.

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APPENDIX C TABLE C-8: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 4
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

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APPENDIX C TABLE C-9: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons										
TPH-d	10	--	--	--	260	SFBRWQCB, 2019	--	4E-02	--	4E-02
TPH-mo	20	--	--	--	12,000	SFBRWQCB, 2019	--	2E-03	--	2E-03
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	0.010	--	--	--	3,600	DTSC, 2025	--	3E-06	--	3E-06
Acenaphthylene	0.010	--	--	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	18,000	USEPA, 2024	--	6E-07	--	6E-07
Benzo(a)anthracene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(a) pyrene	0.010	Background	0.11	USEPA, 2024	18	USEPA, 2024	9E-08	6E-04	--	--
Benzo(b) fluoranthene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(g,h,i) perylene	0.010	--	--	--	--	--	--	--	--	--
Benzo(k) fluoranthene	0.010	Background	11	USEPA, 2024	--	--	9E-10	--	--	--
Chrysene	0.010	Background	110	USEPA, 2024	--	--	9E-11	--	--	--
Dibenz(a,h) anthracene	0.010	Background	0.028	DTSC, 2025	--	--	4E-07	--	--	--
Fluoranthene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Fluorene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Indeno (1,2,3-cd) pyrene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
1-Methylnaphthalene	0.010	--	5.6	DTSC, 2025	0.18	USEPA, 2024	2E-09	6E-02	2E-09	6E-02
2-Methylnaphthalene	0.010	--	--	--	190	DTSC, 2025	--	5E-05	--	5E-05
Naphthalene	0.010		2	DTSC, 2025	130	USEPA, 2024	5E-09	8E-05	5E-09	8E-05
Phenanthrene	0.010		--	--	--	--	--	--	--	--
Pyrene	0.010		--	--	1,800	USEPA, 2024	--	6E-06	--	6E-06
BaPe[a]	*0.0175*	**--**	*0.9*	*DTSC, 2009*	--	--	--	--	--	--
Pesticides										
Aldrin	0.0051	not detected at Site	0.039	USEPA, 2024	2.3	USEPA, 2024	1E-07	2E-03	--	--
Alpha-BHC	0.0051	not detected at Site	0.086	USEPA, 2024	57	USEPA, 2024	6E-08	9E-05	--	--
Beta-BHC	0.0051	not detected at Site	0.3	USEPA, 2024	**--**	**--**	2E-08	--	--	--
Delta-BHC	0.0051	not detected at Site	--	USEPA, 2024	0.0038	USEPA, 2024	--	1E+00	--	--
Gamma-BHC	0.0051	**--**	0.057	USEPA, 2024	21	USEPA, 2024	9E-08	2E-04	9E-08	2E-04
Chlordane	0.050	**--**	1.7	USEPA, 2024	35	USEPA, 2024	3E-08	1E-03	3E-08	1E-03
4,4'-DDD	0.0051	not detected at Site	2.3	USEPA, 2024	32	USEPA, 2024	2E-09	2E-04	--	--
4,4'-DDE	0.0051	**--**	2.0	USEPA, 2024	39	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
4,4'-DDT	0.0051	**--**	1.9	USEPA, 2024	37	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
Dieldrin	0.0051	**--**	0.034	USEPA, 2024	3.2	USEPA, 2024	2E-07	2E-03	2E-07	2E-03
Endosulfan I	0.0051	not detected at Site	--	--	470	USEPA, 2024	--	1E-05	--	--
Endosulfan II	0.0051	not detected at Site	--	--	470	Surrogate[2]	--	1E-05	--	--
Endosulfan sulfate	0.0051	not detected at Site	--	--	380	USEPA, 2024	--	1E-05	--	--
Endrin	0.0051	not detected at Site	--	--	19	USEPA, 2024	--	3E-04	--	--
Endrin aldehyde	0.0051	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Endrin ketone	0.0051	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Heptachlor	0.0051	not detected at Site	0.13	USEPA, 2024	7.8	USEPA, 2024	4E-08	7E-04	--	--
Heptachlor epoxide	0.0051	not detected at Site	0.07	USEPA, 2024	1	USEPA, 2024	7E-08	5E-03	--	--
Methoxychlor	0.010	not detected at Site	--	--	320	USEPA, 2024	--	3E-05	--	--
Toxaphene	0.10	not detected at Site	0.45	DTSC, 2025	5.7	USEPA, 2024	2E-07	2E-02	--	--

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APPENDIX C TABLE C-9: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals										
Antimony	2.9	--	--	--	31	USEPA, 2024	--	9E-02	--	9E-02
Arsenic	**10**	Background	0.032	DTSC, 2025	0.41	DTSC, 2025	3E-04	2E+01	--	--
Barium	**200**	--	--	--	15,000	USEPA, 2024	--	1E-02	--	1E-02
Beryllium	**0.65**	--	1,600	USEPA, 2024	16	DTSC, 2025	4E-10	4E-02	4E-10	4E-02
Cadmium	**0.71**	--	910	DTSC, 2025	7.1	USEPA, 2024	8E-10	1E-01	8E-10	1E-01
Chromium (Total)	**70**	--	--	--	85000	Surrogate[4]	--	8E-04	--	8E-04
Cobalt	**23**	Background	420	USEPA, 2024	23	USEPA, 2024	5E-08	1E+00	--	--
Copper	**35**	--	--	--	3,100	USEPA, 2024	--	1E-02	--	1E-02
Lead[b]	**54**	--	--	--	80	DTSC, 2025	--	7E-01	--	b
Mercury	0.16	--	--	--	0.67	DTSC, 2025	--	2E-01	--	2E-01
Molybdenum	**1.5**	--	--	--	390	USEPA, 2024	--	4E-03	--	4E-03
Nickel	**67**	--	15,000	DTSC, 2025	820	DTSC, 2025	4E-09	8E-02	4E-09	8E-02
Selenium	**1.3**	--	--	--	390	USEPA, 2024	--	3E-03	--	3E-03
Silver	**0.51**	--	--	--	390	USEPA, 2024	--	1E-03	--	1E-03
Thallium	2.9	not detected at Site	--	--	0.78	USEPA, 2024	--	4E+00	--	--
Vanadium	**74**	--	--	--	390	USEPA, 2024	--	2E-01	--	2E-01
Zinc	**100**	--	--	--	23,000	USEPA, 2024	--	4E-03	--	4E-03
						TOTAL	3E-04	26	3E-07	0.9
						TOTAL (Excluding metals consistent with background)	1E-06	2E+00		

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate concentration.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. The USEPA RSL for endosulfan I was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
ND = non-detect
RAW = Remedial Action Work Plan
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency
NA = not applicable

References

DTSC. 2009. Use of the Northern and Southern CaliforniaPolynuclear Aromatic Hydrocarbon (PAH) Studies in theManufactured Gas Plant Site Cleanup Process. California Environmental Protection Agency. July 1.
DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

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APPENDIX C TABLE C-10: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 2
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons										
TPH-d	10	--	--	--	260	SFBRWQCB, 2019	--	4E-02	--	4E-02
TPH-mo	20	--	--	--	12,000	SFBRWQCB, 2019	--	2E-03	--	2E-03
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	0.010	--	--	--	3,600	DTSC, 2025	--	3E-06	--	3E-06
Acenaphthylene	0.010	--	--	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	18,000	USEPA, 2024	--	6E-07	--	6E-07
Benzo(a)anthracene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(a)pyrene	0.010	Background	0.11	USEPA, 2024	18	USEPA, 2024	9E-08	6E-04	--	--
Benzo(b)fluoranthene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(g,h,i)perylene	0.010	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.010	Background	11	USEPA, 2024	--	--	9E-10	--	--	--
Chrysene	0.010	Background	110	USEPA, 2024	--	--	9E-11	--	--	--
Dibenz(a,h)anthracene	0.010	Background	0.028	DTSC, 2025	--	--	4E-07	--	--	--
Fluoranthene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Fluorene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Indeno(1,2,3-cd)pyrene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
1-Methylnaphthalene	0.010	--	5.6	DTSC, 2025	0.18	USEPA, 2024	2E-09	6E-02	2E-09	6E-02
2-Methylnaphthalene	0.010		--	--	190	DTSC, 2025	--	5E-05	--	5E-05
Naphthalene	0.010		2	DTSC, 2025	130	USEPA, 2024	5E-09	8E-05	5E-09	8E-05
Phenanthrene	0.010		--	--	--	--	--	--	--	--
Pyrene	0.010		--	--	1,800	USEPA, 2024	--	6E-06	--	6E-06
BaPe[a]	*0.0175*	**--**	*0.9*	*DTSC, 2009*	--	--	--	--	--	--
Pesticides										
Aldrin	0.0050	not detected at Site	0.039	USEPA, 2024	2.3	USEPA, 2024	1E-07	2E-03	--	--
Alpha-BHC	0.0050	not detected at Site	0.086	USEPA, 2024	57	USEPA, 2024	6E-08	9E-05	--	--
Beta-BHC	0.0050	not detected at Site	0.3	USEPA, 2024	**--**	**--**	2E-08	--	--	--
Delta-BHC	0.0050	not detected at Site	--	USEPA, 2024	0.0038	USEPA, 2024	--	1E+00	--	--
Gamma-BHC	0.0050	**--**	0.057	USEPA, 2024	21	USEPA, 2024	9E-08	2E-04	9E-08	2E-04
Chlordane	0.050	**--**	1.7	USEPA, 2024	35	USEPA, 2024	3E-08	1E-03	3E-08	1E-03
4,4'-DDD	0.0050	not detected at Site	2.3	USEPA, 2024	32	USEPA, 2024	2E-09	2E-04	--	--
4,4'-DDE	0.0050	**--**	2.0	USEPA, 2024	39	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
4,4'-DDT	0.0050	**--**	1.9	USEPA, 2024	37	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
Dieldrin	0.0050	**--**	0.034	USEPA, 2024	3.2	USEPA, 2024	1E-07	2E-03	1E-07	2E-03
Endosulfan I	0.0050	not detected at Site	--	--	470	USEPA, 2024	--	1E-05	--	--
Endosulfan II	0.0050	not detected at Site	--	--	470	Surrogate[2]	--	1E-05	--	--
Endosulfan sulfate	0.0050	not detected at Site	--	--	380	USEPA, 2024	--	1E-05	--	--
Endrin	0.0050	not detected at Site	--	--	19	USEPA, 2024	--	3E-04	--	--
Endrin aldehyde	0.0050	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Endrin ketone	0.0050	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Heptachlor	0.0050	not detected at Site	0.13	USEPA, 2024	7.8	USEPA, 2024	4E-08	6E-04	--	--
Heptachlor epoxide	0.0050	not detected at Site	0.07	USEPA, 2024	1	USEPA, 2024	7E-08	5E-03	--	--
Methoxychlor	0.0099	not detected at Site	--	--	320	USEPA, 2024	--	3E-05	--	--
Toxaphene	0.099	not detected at Site	0.45	DTSC, 2025	5.7	USEPA, 2024	2E-07	2E-02	--	--

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APPENDIX C TABLE C-10: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 2
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals										
Antimony	--	--	--	--	31	USEPA, 2024	--	--	--	--
Arsenic	**10**	Background	0.032	DTSC, 2025	0.41	DTSC, 2025	3E-04	2E+01	--	--
Barium	--	--	--	--	15,000	USEPA, 2024	--	--	--	--
Beryllium	--	--	1,600	USEPA, 2024	16	DTSC, 2025	--	--	--	--
Cadmium	--	--	910	DTSC, 2025	7.1	USEPA, 2024	--	--	--	--
Chromium (Total)	--	--	--	--	85000	Surrogate[4]	--	--	--	--
Cobalt	--	Background	420	USEPA, 2024	23	USEPA, 2024	--	--	--	--
Copper	--	--	--	--	3,100	USEPA, 2024	--	--	--	--
Lead[b]	**71**	--	--	--	80	DTSC, 2025	--	--	--	b
Mercury	**0.46**	--	--	--	0.67	DTSC, 2025	--	7E-01	--	7E-01
Molybdenum	--	--	--	--	390	USEPA, 2024	--	--	--	--
Nickel	--	--	15,000	DTSC, 2025	820	DTSC, 2025	--	--	--	--
Selenium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Silver	--	--	--	--	390	USEPA, 2024	--	--	--	--
Thallium	--	not detected at Site	--	--	0.78	USEPA, 2024	--	--	--	--
Vanadium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Zinc	--	--	--	--	23,000	USEPA, 2024	--	--	--	--
						TOTAL	3E-04	27	3E-07	0.8
					TOTAL (Excluding metals consistent with background)		1E-06	2E+00		

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate concentration.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. The USEPA RSL for endosulfan was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
ND = non-detect
RAW = Remedial Action Work Plan
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency
NA = not applicable

References

DTSC. 2009. Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process. California Environmental Protection Agency. July 1.
DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-11: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, 1-methyl naphthalene non-detect results, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons										
TPH-d	10	--	--	--	260	SFBRWQCB, 2019	--	4E-02	--	4E-02
TPH-mo	20	--	--	--	12,000	SFBRWQCB, 2019	--	2E-03	--	2E-03
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	0.25	--	--	--	3,600	DTSC, 2025	--	7E-05	--	7E-05
Acenaphthylene	0.25	--	--	--	--	--	--	--	--	--
Anthracene	0.25	--	--	--	18,000	USEPA, 2024	--	1E-05	--	1E-05
Benzo(a)anthracene	0.25	Background	1.1	USEPA, 2024	--	--	2E-07	--	--	--
Benzo(a)pyrene	0.25	Background	0.11	USEPA, 2024	18	USEPA, 2024	2E-06	1E-02	--	--
Benzo(b)fluoranthene	0.25	Background	1.1	USEPA, 2024	--	--	2E-07	--	--	--
Benzo(g,h,i)perylene	0.25	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.25	Background	11	USEPA, 2024	--	--	2E-08	--	--	--
Chrysene	0.25	Background	110	USEPA, 2024	--	--	2E-09	--	--	--
Dibenz(a,h)anthracene	0.25	Background	0.028	DTSC, 2025	--	--	9E-06	--	--	--
Fluoranthene	0.25	--	--	--	2,400	USEPA, 2024	--	1E-04	--	1E-04
Fluorene	0.25	--	--	--	2,400	USEPA, 2024	--	1E-04	--	1E-04
Indeno(1,2,3-cd)pyrene	0.25	Background	1.1	USEPA, 2024	--	--	2E-07	--	--	--
1-Methylnaphthalene	0.25	--	5.6	DTSC, 2025	0.18	USEPA, 2024	4E-08	1E+00	--	--
2-Methylnaphthalene	0.25	not detected at Parcel 3	--	--	190	DTSC, 2025	--	1E-03	--	1E-03
Naphthalene	0.25	--	2.0	DTSC, 2025	130	USEPA, 2024	1E-07	2E-03	1E-07	2E-03
Phenanthrene	0.25	--	--	--	--	--	--	--	--	--
Pyrene	0.25	--	--	--	1,800	USEPA, 2024	--	1E-04	--	1E-04
BaPe[a]	*0.4375*	**--**	*0.9*	*DTSC, 2009*	--	--	--	--	--	--
Pesticides										
Aldrin	0.025	not detected at Site	0.039	USEPA, 2024	2.3	USEPA, 2024	6E-07	1E-02	--	--
Alpha-BHC	0.025	not detected at Site	0.086	USEPA, 2024	57	USEPA, 2024	3E-07	4E-04	--	--
Beta-BHC	0.025	not detected at Site	0.3	USEPA, 2024	**--**	**--**	8E-08	--	--	--
Delta-BHC	0.025	not detected at Site	--	USEPA, 2024	0.0038	USEPA, 2024	--	7E+00	--	--
Gamma-BHC	0.025	**--**	0.057	USEPA, 2024	21	USEPA, 2024	4E-07	1E-03	--	--
Chlordane	0.25	**--**	1.7	USEPA, 2024	35	USEPA, 2024	1E-07	7E-03	1E-07	7E-03
4,4'-DDD	0.025	not detected at Site	2.3	USEPA, 2024	32	USEPA, 2024	1E-08	8E-04	--	--
4,4'-DDE	0.025	**--**	2.0	USEPA, 2024	39	USEPA, 2024	1E-08	6E-04	1E-08	6E-04
4,4'-DDT	0.025	**--**	1.9	USEPA, 2024	37	USEPA, 2024	1E-08	7E-04	1E-08	7E-04
Dieldrin	0.025	**--**	0.034	USEPA, 2024	3.2	USEPA, 2024	7E-07	8E-03	7E-07	8E-03
Endosulfan I	0.025	not detected at Site	--	--	470	USEPA, 2024	--	5E-05	--	--
Endosulfan II	0.025	not detected at Site	--	--	470	Surrogate[2]	--	5E-05	--	--
Endosulfan sulfate	0.025	not detected at Site	--	--	380	USEPA, 2024	--	7E-05	--	--
Endrin	0.025	not detected at Site	--	--	19	USEPA, 2024	--	1E-03	--	--
Endrin aldehyde	0.025	not detected at Site	--	--	19	Surrogate[3]	--	1E-03	--	--
Endrin ketone	0.025	not detected at Site	--	--	19	Surrogate[3]	--	1E-03	--	--
Heptachlor	0.025	not detected at Site	0.13	USEPA, 2024	7.8	USEPA, 2024	2E-07	3E-03	--	--
Heptachlor epoxide	0.025	not detected at Site	0.07	USEPA, 2024	1	USEPA, 2024	4E-07	3E-02	--	--
Methoxychlor	0.049	not detected at Site	--	--	320	USEPA, 2024	--	2E-04	--	--
Toxaphene	0.49	not detected at Site	0.45	DTSC, 2025	5.7	USEPA, 2024	1E-06	9E-02	--	--

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APPENDIX C TABLE C-11: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, 1-methyl naphthalene non-detect results, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals										
Antimony	--	--	--	--	31	USEPA, 2024	--	--	--	--
Arsenic	**11**	Background	0.032	DTSC, 2025	0.41	DTSC, 2025	3E-04	3E+01	--	--
Barium	--	--	--	--	15,000	USEPA, 2024	--	--	--	--
Beryllium	--	--	1,600	USEPA, 2024	16	DTSC, 2025	--	--	--	--
Cadmium	--	--	910	DTSC, 2025	7.1	USEPA, 2024	--	--	--	--
Chromium (Total)	--	--	--	--	85000	Surrogate[4]	--	--	--	--
Cobalt	--	Background	420	USEPA, 2024	23	USEPA, 2024	--	--	--	--
Copper	--	--	--	--	3,100	USEPA, 2024	--	--	--	--
Lead[b]	**60**	--	--	--	80	DTSC, 2025	--	--	--	--
Mercury	**0.52**	--	--	--	0.67	DTSC, 2025	--	8E-01	--	8E-01
Molybdenum	--	--	--	--	390	USEPA, 2024	--	--	--	--
Nickel	--	--	15,000	DTSC, 2025	820	DTSC, 2025	--	--	--	--
Selenium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Silver	--	--	--	--	390	USEPA, 2024	--	--	--	--
Thallium	--	not detected at Site	--	--	0.78	USEPA, 2024	--	--	--	--
Vanadium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Zinc	--	--	--	--	23,000	USEPA, 2024	--	--	--	--
						TOTAL	4E-04	36	1E-06	0.8
						TOTAL (Excluding metals consistent with background)	2E-05	9E+00		

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate concentration.

Shaded values exceed the target risk level ($1x10^{-5}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. The USEPA RSL for endosulfan was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
RAW = Remedial Action Work Plan
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency
NA = not applicable

References

DTSC. 2009. Use of the Northern and Southern CaliforniaPolynuclear Aromatic Hydrocarbon (PAH) Studies in theManufactured Gas Plant Site Cleanup Process. California Environmental Protection Agency. July 1.
DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
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USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-12: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons										
TPH-d	10	--	--	--	260	SFBRWQCB, 2019	--	4E-02	--	4E-02
TPH-mo	20	--	--	--	12,000	SFBRWQCB, 2019	--	2E-03	--	2E-03
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	0.010	--	--	--	3,600	DTSC, 2025	--	3E-06	--	3E-06
Acenaphthylene	0.010	--	--	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	18,000	USEPA, 2024	--	6E-07	--	6E-07
Benzo(a)anthracene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(a) pyrene	0.010	Background	0.11	USEPA, 2024	18	USEPA, 2024	9E-08	6E-04	--	--
Benzo(b) fluoranthene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(g,h,i) perylene	0.010	--	--	--	--	--	--	--	--	--
Benzo(k) fluoranthene	0.010	Background	11	USEPA, 2024	--	--	9E-10	--	--	--
Chrysene	0.010	Background	110	USEPA, 2024	--	--	9E-11	--	--	--
Dibenz(a,h) anthracene	0.010	Background	0.028	DTSC, 2025	--	--	4E-07	--	--	--
Fluoranthene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Fluorene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Indeno (1,2,3-cd) pyrene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
1-Methylnaphthalene	0.010	--	5.6	DTSC, 2025	0.18	USEPA, 2024	2E-09	6E-02	2E-09	6E-02
2-Methylnaphthalene	0.010		--	--	190	DTSC, 2025	--	5E-05	--	5E-05
Naphthalene	0.010		2	DTSC, 2025	130	USEPA, 2024	5E-09	8E-05	5E-09	8E-05
Phenanthrene	0.010		--	--	--	--	--	--	--	--
Pyrene	0.010		--	--	1,800	USEPA, 2024	--	6E-06	--	6E-06
BaPe[a]	*0.0175*	**--**	*0.9*	*DTSC, 2009*	--	--	--	--	--	--
Pesticides										
Aldrin	0.0051	not detected at Site	0.039	USEPA, 2024	2.3	USEPA, 2024	1E-07	2E-03	--	--
Alpha-BHC	0.0051	not detected at Site	0.086	USEPA, 2024	57	USEPA, 2024	6E-08	9E-05	--	--
Beta-BHC	0.0051	not detected at Site	0.3	USEPA, 2024	**--**	**--**	2E-08	--	--	--
Delta-BHC	0.0051	not detected at Site	--	USEPA, 2024	0.0038	USEPA, 2024	--	1E+00	--	--
Gamma-BHC	0.0051	**--**	0.057	USEPA, 2024	21	USEPA, 2024	9E-08	2E-04	9E-08	2E-04
Chlordane	0.050	**--**	1.7	USEPA, 2024	35	USEPA, 2024	3E-08	1E-03	3E-08	1E-03
4,4'-DDD	0.0051	not detected at Site	2.3	USEPA, 2024	32	USEPA, 2024	2E-09	2E-04	--	--
4,4'-DDE	0.0051	**--**	2.0	USEPA, 2024	39	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
4,4'-DDT	0.0051	**--**	1.9	USEPA, 2024	37	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
Dieldrin	0.0051	**--**	0.034	USEPA, 2024	3.2	USEPA, 2024	2E-07	2E-03	2E-07	2E-03
Endosulfan I	0.0051	not detected at Site	--	--	470	USEPA, 2024	--	1E-05	--	--
Endosulfan II	0.0051	not detected at Site	--	--	470	Surrogate[2]	--	1E-05	--	--
Endosulfan sulfate	0.0051	not detected at Site	--	--	380	USEPA, 2024	--	1E-05	--	--
Endrin	0.0051	not detected at Site	--	--	19	USEPA, 2024	--	3E-04	--	--
Endrin aldehyde	0.0051	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Endrin ketone	0.0051	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Heptachlor	0.0051	not detected at Site	0.13	USEPA, 2024	7.8	USEPA, 2024	4E-08	7E-04	--	--
Heptachlor epoxide	0.0051	not detected at Site	0.07	USEPA, 2024	1	USEPA, 2024	7E-08	5E-03	--	--
Methoxychlor	0.0010	not detected at Site	--	--	320	USEPA, 2024	--	3E-06	--	--
Toxaphene	0.10	not detected at Site	0.45	DTSC, 2025	5.7	USEPA, 2024	2E-07	2E-02	--	--

GSI ENVIRONMENTAL

APPENDIX C TABLE C-12: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals										
Antimony	--	--	--	--	31	USEPA, 2024	--	--	--	--
Arsenic	**11**	Background	0.032	DTSC, 2025	0.41	DTSC, 2025	3E-04	3E+01	--	--
Barium	--	--	--	--	15,000	USEPA, 2024	--	--	--	--
Beryllium	--	--	1,600	USEPA, 2024	16	DTSC, 2025	--	--	--	--
Cadmium	--	--	910	DTSC, 2025	7.1	USEPA, 2024	--	--	--	--
Chromium (Total)	--	--	--	--	85000	Surrogate[4]	--	--	--	--
Cobalt	--	Background	420	USEPA, 2024	23	USEPA, 2024	--	--	--	--
Copper	--	--	--	--	3,100	USEPA, 2024	--	--	--	--
Lead[b]	**23**	--	--	--	80	DTSC, 2025	--	--	--	--
Mercury	**0.41**	--	--	--	0.67	DTSC, 2025	--	6E-01	--	6E-01
Molybdenum	--	--	--	--	390	USEPA, 2024	--	--	--	--
Nickel	--	--	15,000	DTSC, 2025	820	DTSC, 2025	--	--	--	--
Selenium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Silver	--	--	--	--	390	USEPA, 2024	--	--	--	--
Thallium	--	not detected at Site	--	--	0.78	USEPA, 2024	--	--	--	--
Vanadium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Zinc	--	--	--	--	23,000	USEPA, 2024	--	--	--	--
						TOTAL	3E-04	29	3E-07	0.7
						TOTAL (Excluding metals consistent with background)	1E-06	2E+00		

Notes:
Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate concentration.
Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. The USEPA RSL for endosulfan was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
RAW = Remedial Action Work Plan
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency
NA = not applicable

References

DTSC. 2009. Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process. California Environmental Protection Agency. July 1.
DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

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APPENDIX C TABLE C-13: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 1

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	10	--	--	--	1,100	SFBRWQCB, 2019	--	9E-03
TPH-mo	20	--	--	--	54,000	SFBRWQCB, 2019	--	4E-04
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.010	--	--	--	23,400	RSL Calculator	--	4E-07
Acenaphthylene	0.010	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	117,000	RSL Calculator	--	9E-08
Benzo(a)anthracene	0.010	Yes	80	RSL Calculator	--	--	1E-10	--
Benzo(a)pyrene	0.010	Yes	8.3	RSL Calculator	--	--	1E-09	--
Benzo(b)fluoranthene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
Benzo(g,h,i) perylene	0.010	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.010	Yes	654	RSL Calculator	--	--	2E-11	--
Chrysene	0.010	Yes	6,540	RSL Calculator	--	--	2E-12	--
Dibenz(a,h) anthracene	0.010	Yes	2.1	RSL Calculator	--	--	5E-09	--
Fluoranthene	0.010	--	--	--	11,700	RSL Calculator	--	9E-07
Fluorene	0.010	--	--	--	94	RSL Calculator	--	1E-04
Indeno (1,2,3-cd) pyrene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
1-Methylnaphthalene	0.010	--	167	RSL Calculator	2	RSL Calculator	6E-11	6E-03
2-Methylnaphthalene	0.010	--	--	--	468	RSL Calculator	--	2E-05
Naphthalene	0.010	--	40	RSL Calculator	125	RSL Calculator	3E-10	8E-05
Phenanthrene	0.010	--	--	--	--	--	--	--
Pyrene	0.010	--	--	--	35,100	RSL Calculator	--	3E-07
BaPe[a]	*0.0175*	--	*0.9*	*DTSC, 2009*	**--**	*0.09*	--	--
Pesticides								
Aldrin	0.0051	--	1.34	RSL Calculator	13.6	RSL Calculator	4E-09	4E-04
Alpha-BHC	0.0051	--	1.6	RSL Calculator	276	RSL Calculator	3E-09	2E-05
Beta-BHC	0.0051	--	5.5	RSL Calculator	83	RSL Calculator	9E-10	6E-05
Delta-BHC	0.0051	--	--	--	--	--	--	--
Gamma-BHC	0.0051	--	14	RSL Calculator	0.171	RSL Calculator	4E-10	3E-02
Chlordane	0.050	--	42	RSL Calculator	80	RSL Calculator	1E-09	6E-04
4,4'-DDD	0.0051	--	42	RSL Calculator	69	RSL Calculator	1E-10	7E-05
4,4'-DDE	0.0051	--	68	RSL Calculator	102	RSL Calculator	8E-11	5E-05
4,4'-DDT	0.0051	--	50	RSL Calculator	118	RSL Calculator	1E-10	4E-05
Dieldrin	0.0051	--	0.62	RSL Calculator	14	RSL Calculator	8E-09	4E-04

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APPENDIX C TABLE C-13: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Endosulfan I	0.0051	--	--	--	414	Surrogate[3]	--	1E-05
Endosulfan II	0.0051	--	--	--	414	Surrogate[3]	--	1E-05
Endosulfan sulfate	0.0051	--	--	--	414	RSL Calculator	--	1E-05
Endrin	0.0051	--	--	--	83	RSL Calculator	--	6E-05
Endrin aldehyde	0.0051	--	--	--	83	Surrogate[4]	--	6E-05
Endrin ketone	0.0051	--	--	--	83	Surrogate[4]	--	6E-05
Heptachlor	0.0051	--	4.4	RSL Calculator	34	RSL Calculator	1E-09	2E-04
Heptachlor epoxide	0.0051	--	2.4	RSL Calculator	4.4	RSL Calculator	2E-09	1E-03
Methoxychlor	0.010	--	--	--	689	RSL Calculator	--	1E-05
Toxaphene	0.10	Yes	9.1	RSL Calculator	41	RSL Calculator	1E-08	2E-03
Metals								
Antimony	2.9	--	--	--	132	RSL Calculator	--	2E-02
Arsenic	**10**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	4E-06	9E+00
Barium	**200**	--	--	--	16,000	RSL Calculator	--	1E-02
Beryllium	**0.65**	Yes	128	RSL Calculator	68	RSL Calculator	5E-09	1E-02
Cadmium	**0.71**	Yes	73	RSL Calculator	107	RSL Calculator	1E-08	7E-03
Chromium (Total)	**70**	--	--	--	--	--	--	--
Cobalt	**23**	--	34	RSL Calculator	78	RSL Calculator	7E-07	3E-01
Copper	**35**	--	--	--	6,790	RSL Calculator	--	5E-03
Lead[b]	**54**	--	--	--	136	LeadSpread 9	--	--
Mercury	0.16	Yes	--	--	54.3	RSL Calculator	--	3E-03
Molybdenum	**1.5**	--	--	--	5,950	RSL Calculator	--	3E-04
Nickel	**67**	Yes	1,180	RSL Calculator	3730	RSL Calculator	6E-08	2E-02
Selenium	**1.3**	--	--	--	1,660	RSL Calculator	--	8E-04
Silver	**0.51**	--	--	--	1,700	RSL Calculator	--	3E-04
Thallium	2.9	--	--	--	14	RSL Calculator	--	2E-01
Vanadium	**74**	--	--	--	374	RSL Calculator	--	2E-01
Zinc	**100**	--	--	--	102,000	RSL Calculator	--	1E-03
						TOTAL	5E-06	10
						Total (excluding arsenic and BaPe at background levels)	8E-07	0.8

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APPENDIX C TABLE C-13: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 1

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.

3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria for these chemicals.

4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RAW = Remedial Action Work Plan
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

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APPENDIX C TABLE C-14: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 2

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	10	--	--	--	1,100	SFBRWQCB, 2019	--	9E-03
TPH-mo	20	--	--	--	54,000	SFBRWQCB, 2019	--	4E-04
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.010	--	--	--	23,400	RSL Calculator	--	4E-07
Acenaphthylene	0.010	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	117,000	RSL Calculator	--	9E-08
Benzo(a)anthracene	0.010	Yes	80	RSL Calculator	--	--	1E-10	--
Benzo(a)pyrene	0.010	Yes	8.3	RSL Calculator	--	--	1E-09	--
Benzo(b)fluoranthene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
Benzo(g,h,i) perylene	0.010	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.010	Yes	654	RSL Calculator	--	--	2E-11	--
Chrysene	0.010	Yes	6,540	RSL Calculator	--	--	2E-12	--
Dibenz(a,h) anthracene	0.010	Yes	2.1	RSL Calculator	--	--	5E-09	--
Fluoranthene	0.010	--	--	--	11,700	RSL Calculator	--	9E-07
Fluorene	0.010	--	--	--	94	RSL Calculator	--	1E-04
Indeno (1,2,3-cd) pyrene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
1-Methylnaphthalene	0.010	--	167	RSL Calculator	2	RSL Calculator	6E-11	6E-03
2-Methylnaphthalene	0.010	--	--	--	468	RSL Calculator	--	2E-05
Naphthalene	0.010	--	40	RSL Calculator	125	RSL Calculator	3E-10	8E-05
Phenanthrene	0.010	--	--	--	--	--	--	--
Pyrene	0.010	--	--	--	35,100	RSL Calculator	--	3E-07
BaPe[a]	*0.0175*	--	*0.9*	*DTSC, 2009*	--	--	--	--
Pesticides								
Aldrin	0.0050	--	1.34	RSL Calculator	13.6	RSL Calculator	4E-09	4E-04
Alpha-BHC	0.0050	--	1.6	RSL Calculator	276	RSL Calculator	3E-09	2E-05
Beta-BHC	0.0050	--	5.5	RSL Calculator	83	RSL Calculator	9E-10	6E-05
Delta-BHC	0.0050	--	--	--	--	--	--	--
Gamma-BHC	0.0050	--	14	RSL Calculator	0.171	RSL Calculator	4E-10	3E-02
Chlordane	0.050	--	42	RSL Calculator	80	RSL Calculator	1E-09	6E-04
4,4'-DDD	0.0050	--	42	RSL Calculator	69	RSL Calculator	1E-10	7E-05
4,4'-DDE	0.0050	--	68	RSL Calculator	102	RSL Calculator	7E-11	5E-05
4,4'-DDT	0.0050	--	50	RSL Calculator	118	RSL Calculator	1E-10	4E-05
Dieldrin	0.0050	--	0.62	RSL Calculator	14	RSL Calculator	8E-09	4E-04

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APPENDIX C TABLE C-14: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 2
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Endosulfan I[3]	0.0050	--	--	--	414	Surrogate	--	1E-05
Endosulfan II[3]	0.0050	--	--	--	414	Surrogate	--	1E-05
Endosulfan sulfate	0.0050	--	--	--	414	RSL Calculator	--	1E-05
Endrin	0.0050	--	--	--	83	RSL Calculator	--	6E-05
Endrin aldehyde[4]	0.0050	--	--	--	83	Surrogate	--	6E-05
Endrin ketone[4]	0.0050	--	--	--	83	Surrogate	--	6E-05
Heptachlor	0.0050	--	4.4	RSL Calculator	34	RSL Calculator	1E-09	1E-04
Heptachlor epoxide	0.0050	--	2.4	RSL Calculator	4.4	RSL Calculator	2E-09	1E-03
Methoxychlor	0.0099	--	--	--	689	RSL Calculator	--	1E-05
Toxaphene	0.099	Yes	9.1	RSL Calculator	41	RSL Calculator	1E-08	2E-03
Metals								
Antimony	--	--	--	--	132	RSL Calculator	--	--
Arsenic	**10**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	4E-06	9E+00
Barium	--	--	--	--	16,000	RSL Calculator	--	--
Beryllium	--	Yes	128	RSL Calculator	68	RSL Calculator	--	--
Cadmium	--	Yes	73	RSL Calculator	107	RSL Calculator	--	--
Chromium (Total)	--	--	--	--	--	--	--	--
Cobalt	--	--	34	RSL Calculator	78	RSL Calculator	--	--
Copper	--	--	--	--	6,790	RSL Calculator	--	--
Lead[b]	**71**	--	--	--	136	LeadSpread 9	--	--
Mercury	**0.46**	Yes	--	--	54.3	RSL Calculator	--	8E-03
Molybdenum	--	--	--	--	5,950	RSL Calculator	--	--
Nickel	--	Yes	1,180	RSL Calculator	3730	RSL Calculator	--	--
Selenium	--	--	--	--	1,660	RSL Calculator	--	--
Silver	--	--	--	--	1,700	RSL Calculator	--	--
Thallium	--	--	--	--	14	RSL Calculator	--	--
Vanadium	--	--	--	--	374	RSL Calculator	--	--
Zinc	--	--	--	--	102,000	RSL Calculator	--	--
						TOTAL	4E-06	9
						Total (excluding arsenic and BaPe at background levels)	3E-08	0.06

APPENDIX C TABLE C-14: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 2

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.

3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria for these chemicals.

4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RAW = Remedial Action Work Plan
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

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APPENDIX C TABLE C-15: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 3
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	10	--	--	--	1,100	SFBRWQCB, 2019	--	9E-03
TPH-mo	20	--	--	--	54,000	SFBRWQCB, 2019	--	4E-04
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.25	--	--	--	23,400	RSL Calculator	--	1E-05
Acenaphthylene	0.25	--	--	--	--	--	--	--
Anthracene	0.25	--	--	--	117,000	RSL Calculator	--	2E-06
Benzo(a)anthracene	0.25	Yes	80	RSL Calculator	--	--	3E-09	--
Benzo(a)pyrene	0.25	Yes	8.3	RSL Calculator	--	--	3E-08	--
Benzo(b)fluoranthene	0.25	Yes	83	RSL Calculator	--	--	3E-09	--
Benzo(g,h,i) perylene	0.25	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.25	Yes	654	RSL Calculator	--	--	4E-10	--
Chrysene	0.25	Yes	6,540	RSL Calculator	--	--	4E-11	--
Dibenz(a,h) anthracene	0.25	Yes	2.1	RSL Calculator	--	--	1E-07	--
Fluoranthene	0.25	--	--	--	11,700	RSL Calculator	--	2E-05
Fluorene	0.25	--	--	--	94	RSL Calculator	--	3E-03
Indeno (1,2,3-cd) pyrene	0.25	Yes	83	RSL Calculator	--	--	3E-09	--
1-Methylnaphthalene	0.25	--	167	RSL Calculator	2	RSL Calculator	1E-09	2E-01
2-Methylnaphthalene	0.25	--	--	--	468	RSL Calculator	--	5E-04
Naphthalene	0.25	--	40	RSL Calculator	125	RSL Calculator	6E-09	2E-03
Phenanthrene	0.25	--	--	--	--	--	--	--
Pyrene	0.25	--	--	--	35,100	RSL Calculator	--	7E-06
BaPe[a]	*0.4375*	--	*0.9*	*DTSC, 2009*	--	--	--	--
Pesticides								
Aldrin	0.025	--	1.34	RSL Calculator	13.6	RSL Calculator	2E-08	2E-03
Alpha-BHC	0.025	--	1.6	RSL Calculator	276	RSL Calculator	2E-08	9E-05
Beta-BHC	0.025	--	5.5	RSL Calculator	83	RSL Calculator	5E-09	3E-04
Delta-BHC	0.025	--	--	--	--	--	--	--
Gamma-BHC	0.025	--	14	RSL Calculator	0.171	RSL Calculator	2E-09	1E-01
Chlordane	0.25	--	42	RSL Calculator	80	RSL Calculator	6E-09	3E-03
4,4'-DDD	0.025	--	42	RSL Calculator	69	RSL Calculator	6E-10	4E-04
4,4'-DDE	0.025	--	68	RSL Calculator	102	RSL Calculator	4E-10	2E-04
4,4'-DDT	0.025	--	50	RSL Calculator	118	RSL Calculator	5E-10	2E-04
Dieldrin	0.025	--	0.62	RSL Calculator	14	RSL Calculator	4E-08	2E-03
Endosulfan I[3]	0.025	--	--	--	414	Surrogate	--	6E-05
Endosulfan II[3]	0.025	--	--	--	414	Surrogate	--	6E-05
Endosulfan sulfate	0.025	--	--	--	414	RSL Calculator	--	6E-05
Endrin	0.025	--	--	--	83	RSL Calculator	--	3E-04
Endrin aldehyde[4]	0.025	--	--	--	83	Surrogate	--	3E-04
Endrin ketone[4]	0.025	--	--	--	83	Surrogate	--	3E-04
Heptachlor	0.025	--	4.4	RSL Calculator	34	RSL Calculator	6E-09	7E-04
Heptachlor epoxide	0.025	--	2.4	RSL Calculator	4.4	RSL Calculator	1E-08	6E-03
Methoxychlor	0.049	--	--	--	689	RSL Calculator	--	7E-05
Toxaphene	0.49	Yes	9.1	RSL Calculator	41	RSL Calculator	5E-08	1E-02

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APPENDIX C TABLE C-15: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	--	--	--	--	132	RSL Calculator	--	--
Arsenic	**11**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	5E-06	1E+01
Barium	--	--	--	--	16,000	RSL Calculator	--	--
Beryllium	--	Yes	128	RSL Calculator	68	RSL Calculator	--	--
Cadmium	--	Yes	73	RSL Calculator	107	RSL Calculator	--	--
Chromium (Total)	--	--	--	--	--	--	--	--
Cobalt	--	--	34	RSL Calculator	78	RSL Calculator	--	--
Copper	--	--	--	--	6,790	RSL Calculator	--	--
Lead[b]	**60**	--	--	--	136	LeadSpread 9	--	--
Mercury	**0.52**	Yes	--	--	54.3	RSL Calculator	--	1E-02
Molybdenum	--	--	--	--	5,950	RSL Calculator	--	--
Nickel	--	Yes	1,180	RSL Calculator	3730	RSL Calculator	--	--
Selenium	--	--	--	--	1,660	RSL Calculator	--	--
Silver	--	--	--	--	1,700	RSL Calculator	--	--
Thallium	--	--	--	--	14	RSL Calculator	--	--
Vanadium	--	--	--	--	374	RSL Calculator	--	--
Zinc	--	--	--	--	102,000	RSL Calculator	--	--
						TOTAL	5E-06	10
						Total (excluding arsenic and BaPe at background levels)	2E-07	0.4

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.

3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria for these chemicals.

4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-15: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 3

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RAW = Remedial Action Work Plan
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

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APPENDIX C TABLE C-16: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 4
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	10	--	--	--	1,100	SFBRWQCB, 2019	--	9E-03
TPH-mo	20	--	--	--	54,000	SFBRWQCB, 2019	--	4E-04
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.010	--	--	--	23,400	RSL Calculator	--	4E-07
Acenaphthylene	0.010	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	117,000	RSL Calculator	--	9E-08
Benzo(a)anthracene	0.010	Yes	80	RSL Calculator	--	--	1E-10	--
Benzo(a)pyrene	0.010	Yes	8.3	RSL Calculator	--	--	1E-09	--
Benzo(b)fluoranthene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
Benzo(g,h,i) perylene	0.010	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.010	Yes	654	RSL Calculator	--	--	2E-11	--
Chrysene	0.010	Yes	6,540	RSL Calculator	--	--	2E-12	--
Dibenz(a,h) anthracene	0.010	Yes	2.1	RSL Calculator	--	--	5E-09	--
Fluoranthene	0.010	--	--	--	11,700	RSL Calculator	--	9E-07
Fluorene	0.010	--	--	--	94	RSL Calculator	--	1E-04
Indeno (1,2,3-cd) pyrene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
1-Methylnaphthalene	0.010	--	167	RSL Calculator	2	RSL Calculator	6E-11	6E-03
2-Methylnaphthalene	0.010	--	--	--	468	RSL Calculator	--	2E-05
Naphthalene	0.010	--	40	RSL Calculator	125	RSL Calculator	3E-10	8E-05
Phenanthrene	0.010	--	--	--	--	--	--	--
Pyrene	0.010	--	--	--	35,100	RSL Calculator	--	3E-07
BaPe[a]	*0.0175*	--	*0.9*	*DTSC, 2009*	--	--	--	--
Pesticides								
Aldrin	0.0051	--	1.34	RSL Calculator	13.6	RSL Calculator	4E-09	4E-04
Alpha-BHC	0.0051	--	1.6	RSL Calculator	276	RSL Calculator	3E-09	2E-05
Beta-BHC	0.0051	--	5.5	RSL Calculator	83	RSL Calculator	9E-10	6E-05
Delta-BHC	0.0051	--	--	--	--	--	--	--
Gamma-BHC	0.0051	--	14	RSL Calculator	0.171	RSL Calculator	4E-10	3E-02
Chlordane	0.050	--	42	RSL Calculator	80	RSL Calculator	1E-09	6E-04
4,4'-DDD	0.0051	--	42	RSL Calculator	69	RSL Calculator	1E-10	7E-05
4,4'-DDE	0.0051	--	68	RSL Calculator	102	RSL Calculator	8E-11	5E-05
4,4'-DDT	0.0051	--	50	RSL Calculator	118	RSL Calculator	1E-10	4E-05
Dieldrin	0.0051	--	0.62	RSL Calculator	14	RSL Calculator	8E-09	4E-04
Endosulfan I[3]	0.0051	--	--	--	414	Surrogate	--	1E-05
Endosulfan II[3]	0.0051	--	--	--	414	Surrogate	--	1E-05
Endosulfan sulfate	0.0051	--	--	--	414	RSL Calculator	--	1E-05
Endrin	0.0051	--	--	--	83	RSL Calculator	--	6E-05
Endrin aldehyde[4]	0.0051	--	--	--	83	Surrogate	--	6E-05
Endrin ketone[4]	0.0051	--	--	--	83	Surrogate	--	6E-05
Heptachlor	0.0051	--	4.4	RSL Calculator	34	RSL Calculator	1E-09	2E-04
Heptachlor epoxide	0.0051	--	2.4	RSL Calculator	4.4	RSL Calculator	2E-09	1E-03
Methoxychlor	0.0010	--	--	--	689	RSL Calculator	--	1E-06
Toxaphene	0.10	Yes	9.1	RSL Calculator	41	RSL Calculator	1E-08	2E-03

GSI ENVIRONMENTAL

APPENDIX C TABLE C-16: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 4

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	--	--	--	--	132	RSL Calculator	--	--
Arsenic	**11**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	5E-06	1E+01
Barium	--	--	--	--	16,000	RSL Calculator	--	--
Beryllium	--	Yes	128	RSL Calculator	68	RSL Calculator	--	--
Cadmium	--	Yes	73	RSL Calculator	107	RSL Calculator	--	--
Chromium (Total)	--	--	--	--	--	--	--	--
Cobalt	--	--	34	RSL Calculator	78	RSL Calculator	--	--
Copper	--	--	--	--	6,790	RSL Calculator	--	--
Lead[b]	**23**	--	--	--	136	LeadSpread 9	--	--
Mercury	**0.41**	Yes	--	--	54.3	RSL Calculator	--	8E-03
Molybdenum	--	--	--	--	5,950	RSL Calculator	--	--
Nickel	--	Yes	1,180	RSL Calculator	3730	RSL Calculator	--	--
Selenium	--	--	--	--	1,660	RSL Calculator	--	--
Silver	--	--	--	--	1,700	RSL Calculator	--	--
Thallium	--	--	--	--	14	RSL Calculator	--	--
Vanadium	--	--	--	--	374	RSL Calculator	--	--
Zinc	--	--	--	--	102,000	RSL Calculator	--	--
						TOTAL	5E-06	10
					Total (excluding arsenic and BaPe at background levels)		3E-08	0.06

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.

3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria for these chemicals.

4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-16: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 4

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RAW = Remedial Action Work Plan
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX D

Ecological Risk Assessment Supporting Documentation

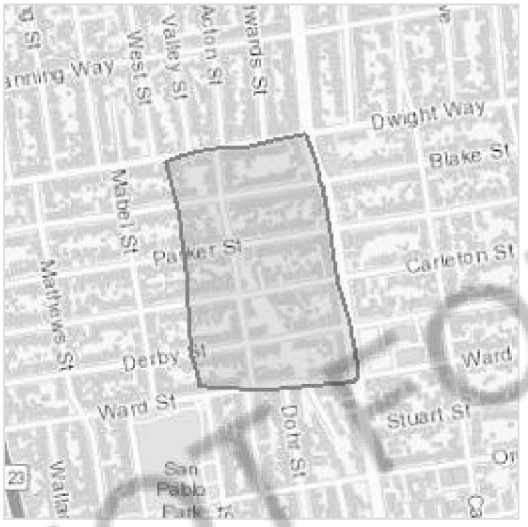
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Alameda County, California



Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse Reithrodontomys raviventris Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Least Tern Sternula antillarum browni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
California Ridgway''s Rail Rallus obsoletus obsoletus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4240	Endangered

Western Snowy Plover Charadrius nivosus nivosus — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/8035

Reptiles

NAME	STATUS

Alameda Whipsnake (=striped Racer) Masticophis lateralis euryxanthus — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/5524

Green Sea Turtle Chelonia mydas — Threatened

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6199

Northwestern Pond Turtle Actinemys marmorata — Proposed Threatened

Wherever found

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1111

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2891

Foothill Yellow-legged Frog Rana boylii — Threatened

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5133

Fishes

NAME	STATUS
Tidewater Goby Eucyclogobius newberryi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Santa Cruz Tarplant Holocarpha macradenia Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6832	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey

events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

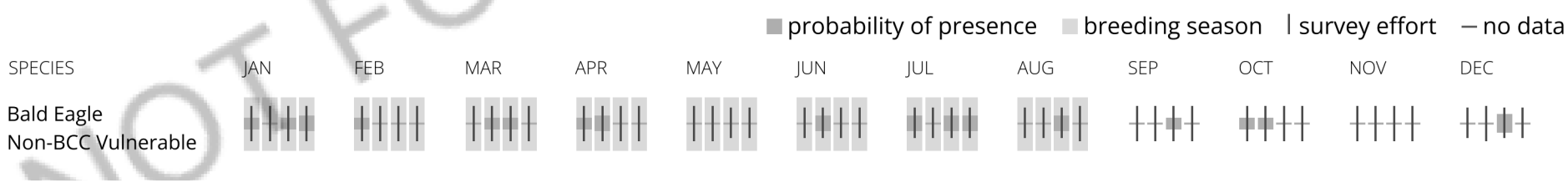
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

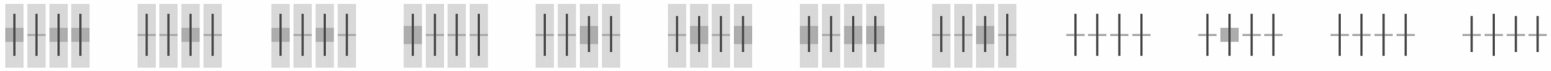
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Golden Eagle
Non-BCC Vulnerable



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON

Allen's Hummingbird Selasphorus sasin — Breeds Feb 1 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9637

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Belding's Savannah Sparrow Passerculus sandwichensis beldingi — Breeds Apr 1 to Aug 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8

Black Oystercatcher Haematopus bachmani — Breeds Apr 15 to Oct 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9591

Black Skimmer Rynchops niger — Breeds May 20 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

Black Turnstone Arenaria melanocephala — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Black-chinned Sparrow Spizella atrogularis — Breeds Apr 15 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9447

Brandt's Cormorant Urile penicillatus — Breeds Apr 15 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Bullock's Oriole Icterus bullockii — Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

California Gull Larus californicus — Breeds Mar 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Cassin's Finch Haemorhous cassinii — Breeds May 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9462

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Elegant Tern Thalasseus elegans — Breeds Apr 5 to Aug 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8561

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Heermann's Gull Larus heermanni — Breeds Mar 15 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Lawrence's Goldfinch Spinus lawrencei — Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Long-eared Owl asio otus

Breeds Mar 1 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3631

Marbled Godwit Limosa fedoa

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Northern Harrier Circus hudsonius

Breeds Apr 1 to Sep 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8350

Nuttall's Woodpecker Dryobates nuttallii

Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus

Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi

Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Red Knot Calidris canutus roselaari — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8880

Santa Barbara Song Sparrow Melospiza melodia graminea — Breeds Mar 1 to Sep 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/5513

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Western Gull Larus occidentalis — Breeds Apr 21 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Western Screech-owl Megascops kennicottii cardonensis — Breeds Mar 1 to Jun 30

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

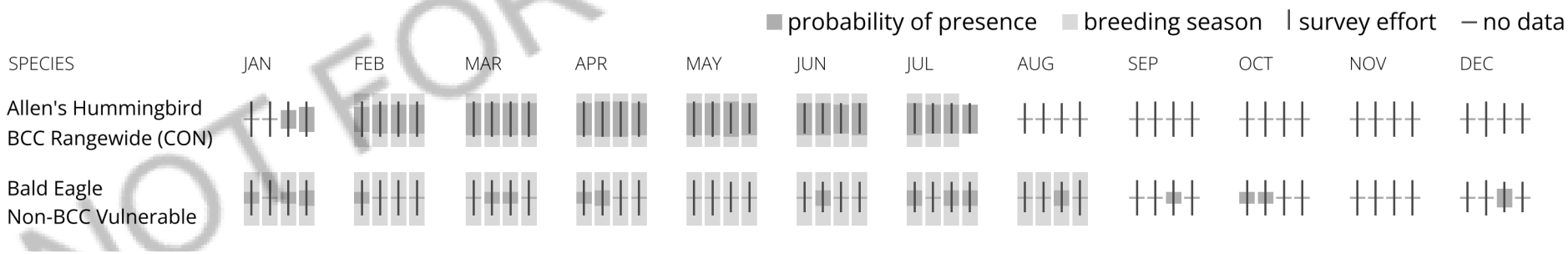
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

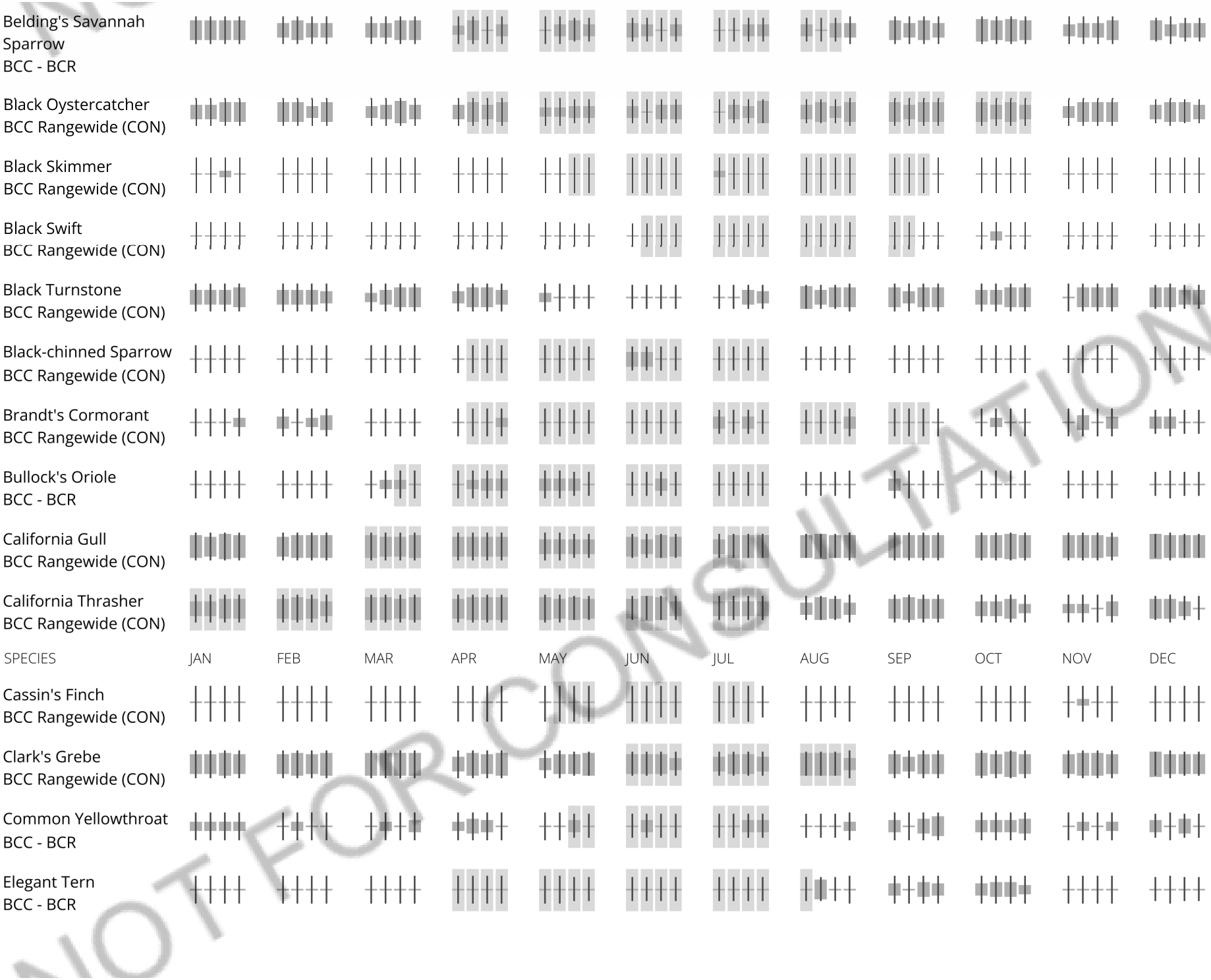
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

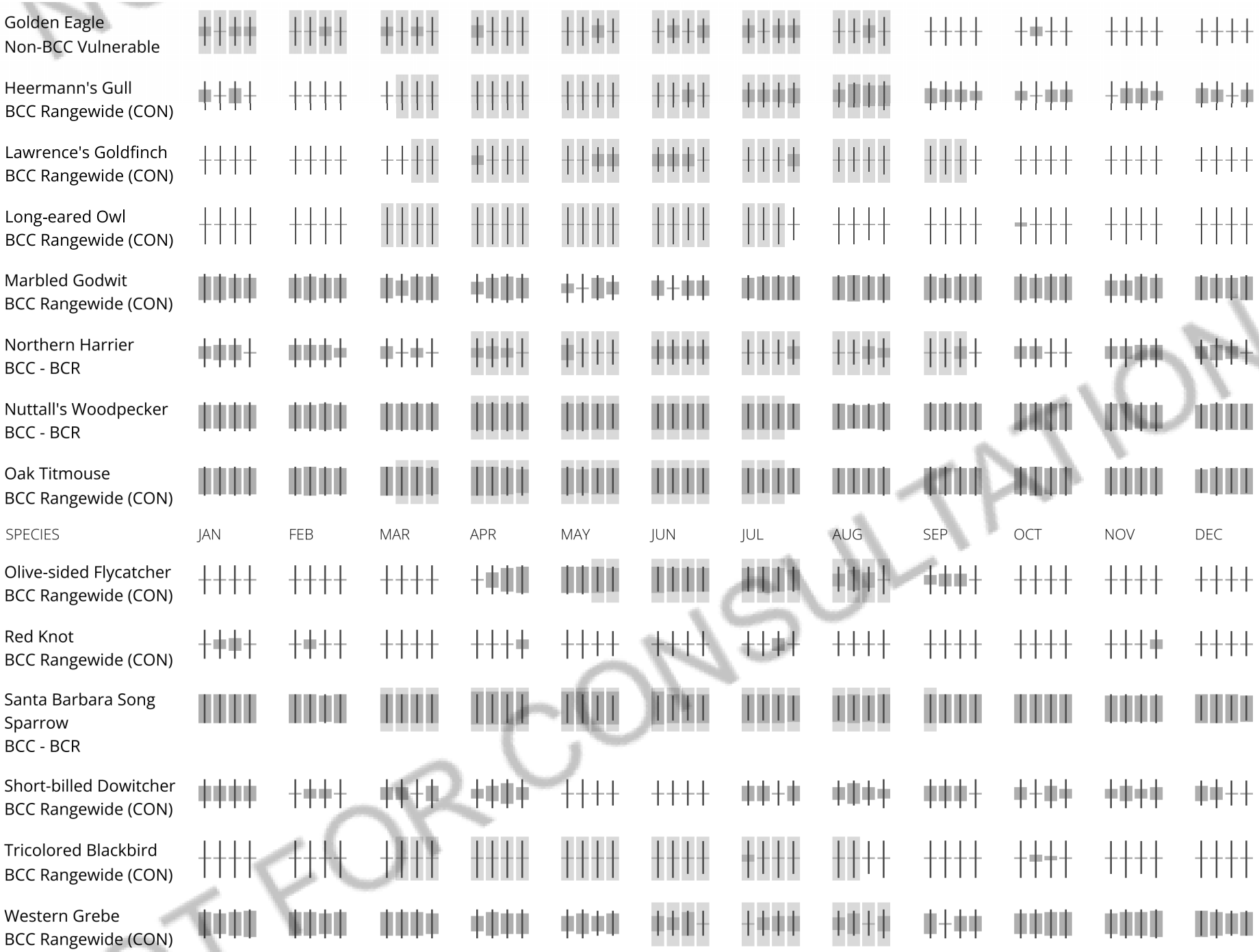
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

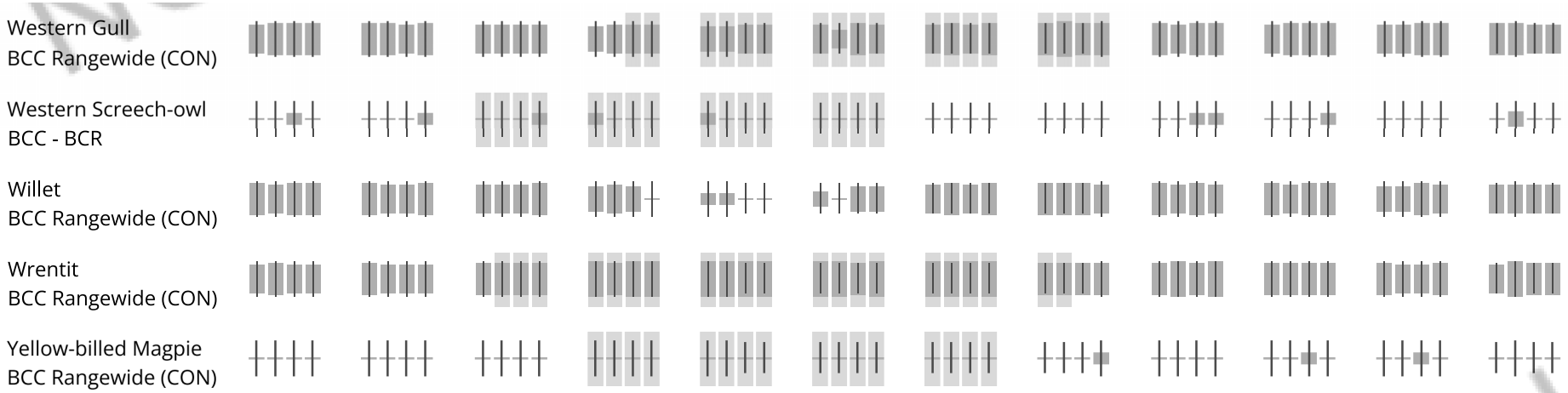
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.









Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX E

Site-Specific Health and Safety Plan

SITE SPECIFIC HEALTH AND SAFETY PLAN

REMEDIAL ACTION IMPLEMENTATION
SANTA FE TRACKBED TO PARK

Berkeley, California

Prepared for:
CITY OF BERKELEY
Department of Parks, Recreation, and Waterfront
1947 Center Street, 5th Floor
Berkeley, California 94704

Prepared by:
GSI ENVIRONMENTAL INC.
2000 Powell Street, Suite 820
Emeryville, California 94608
Phone: 510.463.8484
www.gsienv.com

GSI Job No: 6272
Issued: April 7, 2025

GSI Job No.: 6272
Issued: April 7, 2025

SITE SPECIFIC HEALTH AND SAFETY PLAN

REMEDIAL ACTION IMPLEMENTATION
SANTA FE TRACKBED TO PARK
Berkeley, California

GSI Job No.:	6272	Revision No.:	0
Plan Prepared By:	Tiffany George	Date:	March 28, 2025
Plan Reviewed By:	Jennifer Duffield	Date:	March 31, 2025

Plan Approved: Jennifer Duffield Date: March 31, 2025

ACKNOWLEDGEMENT

I, the undersigned, have been provided with a copy of this Site-Specific Health and Safety Plan. I have read the Plan and have had the opportunity to ask questions about health and safety issues relating to this project. I understand that it is my responsibility to abide by this Plan, and that physical injury, damage and other harm to myself or others could result from my failure to do so.

Name & Company (please print)	Signature	Date

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Implementation
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Implementation
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Implementation
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

TABLES

FIGURES

ATTACHMENTS

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Implementation
Santa Fe Trackbed to Park
Berkeley, California

1.0 SCOPE AND APPLICATION

This Site-Specific Health and Safety Plan (HASP) has been prepared in accordance with 29 CFR §1910.120, 8 CCR 5192 for the Santa Fe Trackbed to Park conversion project located in Berkeley, California (the Site; Figure 1). This HASP specifies the minimum health and safety protocols to be followed during implementation of project work by all Site personnel including employees, contractors, and subcontractors. In the event of conflicting standards between this plan or the client health and safety requirements, the more protective standard shall apply. This HASP is to be provided to all Site workers for their review. All personnel are required to comply with this HASP and to indicate their agreement to do so by signing the cover page.

GSI performed an initial soil investigation at the Santa Fe Trackbed to Park Site in July 2022 and detected concentrations of arsenic, lead, mercury, and polycyclic aromatic hydrocarbons (PAHs) that exceeded the human health screening criteria (GSI, 2022). The City of Berkeley Department of Parks, Recreation, and Waterfront (the City) entered into a voluntary cleanup agreement with the California Department of Toxic Substances (DTSC) to oversee environmental characterization and remediation of the Site. Since 2022, GSI completed further investigation and confirmed the extent of the impacts attributed to the historical use as the Santa Fe Railroad. Impacts to soil are limited primarily to shallow soil (upper 2 feet) but extend to 5.5 feet below ground surface (bgs) in some areas (GSI, 2024). The proposed remediation method for the Site is removing the impacted soil with targeted excavations to depths ranging from 2 to 6 feet bgs, as described in the Remedial Action Workplan dated April 2, 2025 (GSI, 2025). GSI prepared this site-specific HASP to complete the proposed remediation activities.

Site workers shall adhere to all applicable federal, state, and local regulations and codes relating to health and safety and all sections of California Occupational Safety and Health Administration regulations contained in Title 8 of the California Code of Regulations (8 CCR) as they apply to the Site activities. Applicable requirements may include but are not limited to the following:

- Injury and Illness Prevention Program (8 CCR 1509 and 8 CCR 3203).
- Hazardous Waste Operations and Emergency Response (8 CCR 5192).
- Hazard Communication (8 CCR 5194).
- Personal Protective Equipment (8 CCR Article 10).
- Respiratory Protective Equipment (8 CCR 5144).
- Control of Noise Exposure (8 CCR 5095-5100).
- Excavations (8 CCR 1503 and 8 CCR 1539- 1547).
- Fire Prevention and Suppression Procedures (8 CCR 4848).
- Portable Fire Extinguishers (8 CCR 6151).
- Cleaning, Repairing, Servicing, and Adjusting Prime Movers, Machinery, and Equipment Lockout/Tagout (8 CCR 3314).
- Medical Services and First Aid (8 CCR 3400).

As stated above, the protocols outlined in this HASP are considered minimum requirements and shall not be strictly relied upon. Instead, it is the responsibility of each subcontractor performing work at the Site to prepare its own HASP relative to the tasks its personnel will be conducting. Each subcontractor is responsible for the health and safety of those persons under its oversight, including its personnel and subcontractors.

2.0 PROJECT DESCRIPTION

2.1 General Information

Client	City of Berkeley
Site Owner	City of Berkeley
Project Name and General Description	Remediation - Historic Santa Fe Right-of-Way
Project Locations (Physical Address)	Santa Fe Trackbed to Park (the Site), Berkeley, California
Detailed Location Information	Four non-contiguous parcels that extend north-to-south from Blake Street to Ward Street, and east-to-west between Sacramento Street and Mabel Street.
Start Date/Duration/ Other Schedule Info.	The start date is to be determined and the work is estimated to take 15 to 25 business days to complete. Note: all work will be completed during daylight hours.

2.2 Site Description

The Site (Figure 1) is currently undeveloped land that was historically a railroad in Berkeley, California. It extends north-to-south between Blake Street and Ward Street and east-to-west between Sacramento and Mabel Streets. The Site is approximately 1.32 acres and consists of four parcels.

- Parcel 1 – located between Blake and Parker Streets
- Parcel 2 – located between Parker and Carleton Streets
- Parcel 3 – located between Carleton and Derby Streets
- Parcel 4 – located between Derby and Ward Streets#

2.3 Project Tasks

Work to be conducted includes excavation and backfilling at varying depths throughout the Site. Activities that may result in potential exposure to chemicals at the Site and other hazards associated with a construction project may include, but are not limited to:

- Staking the excavation locations;
- Excavating each grid cell to a minimum depth of 2 feet bgs and a maximum depth of 6 feet bgs (detailed excavation depths are presented in Figures 2 through 5);
- Off-hauling soil;
- Backfilling each excavation with clean import soil from the total depth excavated to ground surface; and
- Perimeter air monitoring.

Information pertaining to potential chemical hazards that may be encountered during Site activities, and general control measures are discussed in Section 5.0. Job Hazard Analyses (JHAs) for the above tasks as applicable to GSI's role of observing and documenting excavation activities are included in Attachment 1.

Hazards related to the work that is being conducted by the remediation contractor (e.g., use of heavy equipment or certain hand tools) will be identified by the contractor in its site-specific HASP.

In its HASP, the contractor will include a JHA for those tasks that may meet one of the following criteria:[1]

- tasks with a high likelihood of injury or illness, including those where a simple error could result in a severe accident or injury;
- tasks that are new to the contractor's operations or that have undergone changes in processes and procedures; and,
- tasks that are complex enough to require written instructions.

An example format for the JHA is included as Attachment 2.

3.0 EMERGENCY RESPONSE PROCEDURES

In an emergency call **911.**

Report all accidents immediately to:

Tiffany George (GSI): *510-858-0102 or 831-227-5144*
Stephen Sasaki (GSI): *713-522-6300*
Stacey Rutherford (City of Berkeley): *510-981-6738*

NOTE: Specific emergency contact information and applicable directions to the nearest medical facility are contained in Figures 6 and 7. Secure the safety of yourself and those working under your direction and then contact appropriate Site, GSI, and City of Berkeley representatives that are referenced above.

Non-Emergency Contacts:

Berkeley Police Department: *510-981-5900*
Berkeley Fire Department: *510-981-3473*

3.1 Emergency Actions

Location of emergency assembly area(s):

In case of the need to evacuate the Site, all personnel should assemble at the emergency muster points described below and shown on Figure 1:

- **Parcel 1** (between Blake Street and Parker Street) – assemble at the southwestern corner of the intersection of Blake Street and Acton Street.
- **Parcel 2** (between Parker and Carleton Streets) – assemble at the southeastern corner of the intersection of Acton and Parker Streets or the northeastern corner of the intersection of Acton and Carleton Streets.

[1] U.S. Department of Labor, Occupational Safety and Health Administration, OSHA 3071, 2002 (revised)

- **Parcel 3** (between Carleton and Derby Streets) – assemble on Carleton Street at the north side of Site or on Derby Street at the south side of Site.
- **Parcel 4** (between Derby Street and Ward Street) – assemble on Derby Street at the north side of Site or the north corner of the intersection of Ward Street and Sojourner Truth Court.

Other applicable emergency response measures to be taken (decontamination and/or medical treatment):

Should ocular chemical exposure occur, the eyes should be flushed immediately and constantly with water or saline solution. The victim should be immediately transported to the nearest emergency facility or urgent care facility depending on the severity of exposure (see below).

Location and phone number of nearest urgent care facility (see Figure 6)

Concentra Urgent Care

2850 Seventh Street, Suite 100
Berkeley, CA 94710
510-845-5170

Location and phone number of nearest hospital with emergency room (see Figure 7)

Sutter Health Alta Bates Summit Medical Center

2450 Ashby Avenue
Berkeley, CA 94705
510-204-1303

4.0 PROJECT ORGANIZATION, KEY PERSONNEL, & TRAINING REQUIREMENTS

4.1 Key Personnel and Responsibilities

Key project personnel are listed in the table below
.

Position	Name	Phone (Cell Phone)
GSI Project Manager	Jennifer Duffield	510-821-8925
GSI Project Safety Manager	Tiffany George	831-227-5144
GSI Site-Safety Officer (SSO)	To be determined (TBD)	TBD
GSI Corporate Health & Safety Coordinator	Stephen Sasaki	713-522-6300
Client Project Manager	Stacey Rutherford	510-981-6738
Owner Representative	Stacey Rutherford	510-981-6738
Contractor Site Manager	TBD	TBD

4.1.1 GSI Project Manager

The Project Manager has the overall responsibility for the success of the project, including implementation of this HASP. The Project Manager will have the authority to reallocate resources and personnel, as needed, to address health and safety components of the project and safely complete the fieldwork. The Project Manager will i) direct personnel involved in the field work, ii) make the Project Safety Manager and Site Safety Officer (SSO) aware of all project plans and work scope, iii) make available the resources necessary to maintain a safe working environment, and iv) and maintain communications with the client.

4.1.2 GSI Project Safety Manager

The GSI Project Safety Manager is responsible for daily management of Site operations during field work, including management of subcontractors. The Project Safety Manager will:

- verify that all personnel have received the required training, are aware of potential hazards, and have received and reviewed the HASP;
- ensure that required personal protective equipment (PPE), monitoring, and emergency equipment is provided and maintained in effective working condition; and
- modify the HASP as required based on accidents/incidents and findings regarding site hazards and work practices

Additionally, the Project Safety Manager will conduct periodic site audits and advise the SSO and project GSI personnel on the health and safety aspects of remedial and monitoring activities conducted at the Site. During site audits, the Project Safety Manager will observe field procedures with respect to health and safety and suspend work if an imminent health hazard is observed. Any observed accidents/incidents or unsafe work practiced will be reported to the Project Manager and SSO.

4.1.3 GSI Site Safety Officer

The SSO must be a qualified person, with knowledge, experience, and training commensurate with the responsibilities for the particular site and project.

The SSO is responsible for:

- communicating project health and safety requirements to project personnel, including subcontractors;
- conducting daily tailgate meetings and other safety briefings, as needed;
- implementing the HASP and reporting any observed differences from anticipated Site conditions to the Project Safety Manager when appropriate,
- ensuring that required personal protective equipment (PPE), monitoring, and emergency equipment is provided and maintained in effective working condition;
- verifying the safety training credentials [e.g., Occupational Safety and Health Administration (OSHA) training certificates] of subcontract personnel;
- observing subcontractor's procedures with respect to health and safety and suspend work if an imminent health hazard is observed;
- conducting inspection of the work site each day to identify hazards and mitigation measures before work commences and as work is on-going,

- completing the Daily Site Safety Record (Attachment 3) and related documentation; and
- communicating safety-related concerns to the client's designated safety representative and to the Project Safety Manager, as appropriate.

4.2 Training Requirements

Site personnel shall be trained and certified in environmental health and safety procedures pursuant to OSHA 29 CFR 1910.20, Hazardous Waste Operations and Emergency Response (HAZWOPER) training requirements. Such personnel are required to complete an initial 40-hour training course on safety and health for HAZWOPER, and an annual 8-hour refresher course, as required by 29 CFR 1910.120 ("the OSHA standard").

Following 40-hour training, field workers shall receive a minimum of 24 hours (three days) of on-the-job field training under the direct supervision of an experienced, qualified supervisor, as required by OSHA regulation (29 CFR 1910.120(e)(3)(i)). Additional training and/or on-site supervision shall be provided, as needed, to achieve demonstrated competence for the scope of work to be performed.

Additionally, all employees who perform fieldwork and may need to use PPE, possibly including respirators, participate in the medical monitoring program as required by 8 CCR 5192(f) and 29 CFR 1910.120. Employees required to be in the medical surveillance program shall undergo pre-assignment and annual physical examinations by a physician or licensed health care provider to ensure fitness to use PPE and a respirator.

4.3 Requirements for Respirator Use

Respirator use is not anticipated for the specified tasks because the chemicals of concern (COCs) are not volatile and dust control measures will be implemented to control generation of dust that may contain non-volatile constituents. Air quality monitoring for dust will be performed as described in section 6.0; if the action level is exceeded, work will be stopped and additional dust control measures will be implemented.

4.4 Personnel Documents

If applicable, field project personnel, including subcontractors, are to maintain training and medical records at their respective offices and provide them to GSI, if requested. OSHA 40-hour HAZWOPER training with 8-hour refresher courses is required of all field personnel performing work subject to the OSHA standard.

5.0 POTENTIAL HAZARDS & HAZARD CONTROL MEASURES

5.1 General Site Access Control

Field activities will be performed between 7:00 AM and 5:00 PM. Access to each parcel in the Site is provided through chain-link gates and will be coordinated with the Client Project Manager. While on Site each gate should remain closed, though not locked unless deemed necessary by the SSO. Cones will be placed in front of the gates while work is being conducted. The general public will not have access to the Site.

5.2 Work Zones

The work area will be divided into three zones: the exclusion zone, the contamination reduction zone (CRZ), and the support zone. The zones are characterized by the activities being performed and the possible presence of biological and chemical hazards.

5.2.1 Exclusion Zone

The exclusion zone constitutes the area where potentially hazardous contaminants and physical hazards may be found. Only authorized personnel will be permitted in the exclusion zone and no smoking, eating, or drinking is allowed. Egress from the exclusion zone is through the CRZ, unless other means of egress is warranted due to an imminent hazard or emergency.

5.2.2 Contaminant Reduction Zone

Equipment and personnel decontamination will be conducted in the CRZ, adjacent to the exclusion zone. PPE will be removed in this area, prior to entering the support zone.

5.2.3 Support Zone

The support zone is the clean area outside of the CRZ. There should be no contamination in the support zone.

5.3 Project Personnel Access Control

All personnel visiting the Site, including subcontractors and regulatory personnel, will be required to sign in and review the HASP.

5.4 Traffic Control

During soil transport activities, trucks will enter the Site via the road designated by the Contractor Site Manager. The roads used for soil transport activities will vary based on which parcel soil is being excavated from and which road is nearest the active work area. A flag person will be located at the site to assist the truck drivers to safely enter the Site. A Site trucking coordinator will be designated to maintain communication with on-Site trucks and coordinate transportation. In addition, all vehicles will be required to maintain slow speeds (i.e., less than 5 mph) for safety and for dust control purposes.

Prior to exiting the Site, vehicles will be brushed off to remove any extra soil from areas not covered or protected. Prior to the off-Site transport, the Contractor Site Manager will be responsible for inspecting each truck to ensure that the payloads are adequately covered, the trucks are cleaned of excess soil and properly placarded, and that the truck's manifest has been completed and signed by the generator (or its agent) and the transporter. As the trucks leave the Site, the flag person will assist the truck drivers so that they can safely merge with traffic. Personnel shall wear a high-visibility vest or other suitable garments marked with or made of reflectorized or high-visibility material per 8 CCR 1541(d) and Section 7.2.

5.5 Underground Utilities Clearance

Utility clearance will include at least a 2-day notification to Underground Service Alert (USA) of California, the state underground utility notification authority.

Below are the color designations typically used by the underground utilities' surveyors in California (note other states may differ):

WHITE – PROPOSED EXCAVATION

PINK – TEMPORARY SURVEY MARKINGS

RED – ELECTRIC POWER LINES, CABLES, CONDUIT AND LIGHTING CABLES

YELLOW – GAS, OIL, STEAM, PETROLEUM OR GASEOUS MATERIALS

ORANGE – COMMUNICATION, ALARM OR SIGNAL LINES, CABLES OR CONDUIT

BLUE – POTABLE WATER

PURPLE – RECLAIMED WATER, IRRIGATION AND SLURRY LINES

GREEN – SEWERS AND DRAIN LINES

5.6 General Work Hazards and Avoidance

General work hazards include slip, trip, and fall hazards, head or foot injuries from falling or dropped objects, strains from over-exertion or incorrect lifting, electrical shocks, etc. These hazards can be controlled by good housekeeping measures and safe work practices, as outlined below.

Housekeeping Measures:

- Excess brush or high vegetation should be cleared from the work area to the extent practical prior to start of the job.
- The job site must be kept clean and free of trash and debris. Trash will be placed in bags or other suitable containers when generated. Disposable PPE must be disposed of in designated containers upon removal.
- Materials shall be neatly stored in a designated area.
- Tools and equipment must be returned to the toolbox or designated area when no longer in use.

General Safe Work Practices:

- Use a buddy system.
- Stay alert at all times to activities in your surroundings. Watch for on-coming vehicles, other workers, and overhead hazards.
- Work at a deliberate pace; do not rush a job.
- Avoid heavy lifting and lift with knees bent.

- Use tools only for their intended use, and make sure tools are in good condition. Inspect power tools and extension cords prior to use.
- Maintain safe distance (at least 10 feet and an additional 4 inches for every 10 kilovolts (kV) over 50 kV) between overhead equipment and overhead lines.
- Avoid unauthorized entry to restricted areas including confined space areas.
- Proper PPE (specified below) must be worn at all times. PPE must be inspected regularly and properly maintained.
- Remove gloves and wash hands before handling food or tobacco products.

5.7 Fire and Explosion Hazard Mitigation

- All excavation locations must be properly cleared for the presence of underground utilities prior to digging. Utility clearance procedures are specified in Section 5.5.
- Gasoline and other fuels must be stored in steel safety cans with mesh flame arresters and spring-mounted relief vent mechanisms. Flammable and combustible materials including paints and solvents must be properly stored away from sources of ignition.
- Fire extinguishers must be present on all vehicles and in all areas where spark producing equipment is in use.
- Smoking permitted only in designated areas.

5.8 Heat-Related Disorders

The major varieties of heat-related disorders, their related symptoms and appropriate treatment are listed below in order of increasing severity.

Condition & Related Symptoms	Heat Stress	Heat Exhaustion or Heat Syncope	Heat Stroke
Cramping	May be present	May be present	Absent
Mental State	Faint, dizzy, fatigue	May be disoriented	Stupor or coma
Skin & Complexion	Cool, moist, flush; rash may be present	Cool, pale, moist	Red, hot, dry
Temperature	Normal	Normal to low	Very high (>105° F)
Pulse	Rapid (>110 beat /min)	Rapid, weak	Rapid, bounding
Blood Pressure	May be low	May be low	May be high in early stages
Treatment	Give water & electrolytes, loosen or remove clothing, move to shade	Give water & electrolytes, loosen or remove clothing, move to shade	Provide rapid cooling by immersion; cover in wet cloth and transport to emergency room

Prevention Measures: All heat disorders are caused by loss of fluids and the body's inability to cool itself. Measures to prevent heat illness include procedures related to acclimatization, training, and emergency responses. Additional preventative requirements include, but are not limited to the following measures:

- Pre-hydrate before going into the field: water or water-electrolyte drinks are preferable to caffeinated beverages or soft drinks. Refrain from alcohol the night before field work.
- Drink fluids frequently while in the field. Numerous small drinks at a tepid temperature are better than rapid, large volume intakes of iced drinks.

- Water shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. If, during the day, quantities have been reduced to unacceptable levels, one employee shall be tasked with going for more water. An inadequate supply of drinking water may require temporary suspension of work until water can be obtained [CalOSHA 8 CCR 3395(c)].
- Rest at least a few minutes every hour or two.
- Observe co-workers for signs of heat stress.
- Shade shall be present on the worksite when the temperature exceeds 80 degrees Fahrenheit. Below 80 degrees Fahrenheit, if shade is not already present on site, shade must be provided when requested by an employee. “Shade” means blockage of direct sunlight that can accommodate at least 25 percent of the employees on the shift at any time [CalOSHA 8 CCR 3395(d)].

OSHA identifies the following Risk Levels for given values of the heat index and recommends increasing Protective Measures to be implemented at each level.

Heat Index	Risk Level	Protective Measures
< 91° F	Lower (Caution)	Basic heat safety and planning
91° to 103° F	Moderate	Implement precautions and heighten awareness
103° to 115° F	High	Additional precautions to protect workers
> 115° F	Very High to Extreme	Aggressive measures (e.g., reschedule non-essential work)

5.9 Heavy Equipment Operations

The use of heavy equipment is anticipated for excavation, backfilling and hauling activities. All equipment must be in good condition. The equipment must be equipped with a back-up beeper. Barricades, caution tape and fencing at the Site should be used as needed to exclude unauthorized personnel from the work area.

All heavy equipment must employ the warning methods while the vehicle is backing up, as described in 8 CCR 1592, including:

- Automatic back-up alarm;
- Automatic braking device;
- A spotter directing the vehicle;
- Inspection of the entire perimeter of the vehicle prior to backing up; and/or
- Prohibiting foot traffic in the work area.

Equipment should be positioned to allow for adequate work room and the area kept free of trip and slip hazards. Care must be taken to avoid the catching of loose clothing in moving parts, and to keep hands free of pinch points. Proper PPE including hard hat, safety glasses, gloves, hearing protection, and safety shoes must be worn.

All vehicles or mechanical equipment that may have all or parts of its structure near energized overhead lines should maintain an operating distance as stipulated by CalOSHA requirements (8 CCR 2946). For boom-type lifting or hoisting equipment (i.e., drill rigs) required clearance distances are provided below:

Nominal Volage		Minimum Required Clearance (feet)
From	To	
600	50,000	10
Over 50,000	75,000	11
Over 75,000	125,000	13
Over 125,000	175,000	15
Over 175,000	250,000	17
Over 250,000	370,000	21
Over 370,000	550,000	27
Over 550,000	1,000,000	42

5.10 Confined Space and Excavation Safety

All personnel must obey all posted restrictions on entry to confined spaces. Excavations deeper than 4 feet should not be entered for any purpose unless 1) the excavation walls are properly shored or are sloped at a 1:1 slope, or less steep, and there is no danger of collapse or engulfment; 2) a suitable means of egress such as ramp, stairs or ladder is located so as to require no more than 25 feet of lateral travel to reach it; and 3) testing demonstrates a hazardous atmosphere is not present.

5.11 Potential Chemical Exposure Hazards

Primary constituents of concern, relevant exposure levels, and the maximum expected concentrations in soil and/or water, to the extent known, are presented below. Safety Data Sheets (SDSs) are included in Attachment 4.

Constituents of Concern (COCs)	Exposure Limits[1]			I.P.[3]	Max. Expected Concentration or Free-Phase (FP)		Health Hazard Target Organ Route of Entry
Chemical Name/ CAS No.	**PEL/ TLV (mg/m3)**	**STEL (mg/m3)**	**IDLH[2] (mg/m3)**	**(eV)**	**Soil (mg/kg)**	**Water (mg/L)**	Ca = Carcinogen Abs = Skin Absorption Con = Skin or Eye Contact Inh = Inhalation Ing = Ingestion
Arsenic 7440-38-2	0.01	NPV	5	NA	338	NE	Ca, Abs, Con, Inh, Ing
Lead 7439-92-1	0.05	NPV	100	NA	294	NE	Con, Inh, Ing
Mercury 7439-97-6	0.025	NPV	10	NA	2.1	NE	Con, Abs, Inh, Ing
Benzo(a)pyrene (as Coal Pitch Tar volatiles) 65996-93-2	0.2	NPV	80	NA	3.5	NE	Ca, Con, Inh

1 Unless otherwise noted, Permissible Exposure Limits (PEL) and Threshold Limit Values (TLVs) are permissible time-weighted average exposure limits (milligrams per cubic meter [mg/m^3] in air), which must not be exceeded for an 8-hour work-day/40-hour work week. Short-Term Exposure Limits (STELs) must not be exceeded over a 15-minute period. Some exposure limits are expressed in milligrams per cubic meter (mg/m^3).
2 IDLH = Immediately Dangerous to Life or Health; must not be exceeded at any time.
3 I.P. = Ionization Potential. A photoionization detector specified in Section 6.0 should have a lamp with an IP (i.e., 10.6 eV or 11.7 eV) that is greater than the largest IP of COCs from this table that may reasonably be expected to occur as volatiles.

4 NPV = No published value
5 Exposure limits, ionization potentials, and associated health hazards can be found in the NIOSH Pocket Guide to Chemical Hazards and the ACGIH Guide to TLVs and BEIs and Cal-OSHA 8 CCR 5155 Table AC-1.
6 NE = Not Established
7 NA = Not Applicable

Other metals, PAHs, and organochlorine pesticides may also be present in Site soil. However, these compounds are not included in the table above because the previous detections were below their respective residential screening levels in soil.

To minimize potential chemical exposure, the following measures will be taken:

- SDS must be provided for any chemical brought on-site for project use.
- Workers should remain upwind of contaminated materials to the extent practical.
- PPE specified below will be worn to prevent skin or eye contact with constituents.
- Air quality monitoring will be conducted, as described below.
- Eating, drinking, smoking, gum chewing and oral tobacco use are not permitted in areas where chemical exposure could occur.
- Workers must remove gloves in the work area and drink from a water source outside the immediate work zone.
- PPE must be removed, and hands thoroughly washed prior to breaking for meals.

5.11 Other Potential Hazards

Other potential hazards associated with the site and/or specific tasks and applicable hazard mitigation methods are described below.

If applicable, exercise extreme caution when working near or around heavy machinery. Make sure the equipment operator can see where you are, especially when the equipment is being moved from one location to the next.

6.0 AIR QUALITY MONITORING

Real-time perimeter air monitoring data for dust using direct-reading instruments will be conducted during removal of impacted soil. At least one upwind and two downwind sampling stations will be set up for continuous perimeter dust monitoring. At each station, dust monitoring devices will be set with the air intake set to 4 to 5 feet off the ground to monitor air representative of the breathing zone. Monitoring locations will be recorded in field notes and on Site plans. Air monitoring will be conducted using direct-reading instruments (e.g., a TSI DustTrak or similar) for measurement of total dust. Electronic data logs of real-time measurements will be used to determine the maximum and average dust concentrations at upwind and downwind perimeter monitoring locations.

Chemical-specific action levels for dust in work zone air were developed using Permissible Exposure Limits (PEL) published by the California Division of Occupational Safety and Health (Cal-OSHA; 2019). The resulting chemical-specific, work zone action levels are presented in Table 1. As presented in Table 1, the PEL for the respirable fraction of particulates (5 mg/m^3) is more conservative (i.e., lower) than every chemical-specific action level for work zone air. Therefore, the PEL for the respirable fraction of particulates (5 mg/m^3) was selected as the action level for perimeter dust monitoring. If this action level is exceeded, work will be temporarily stopped and additional engineering controls such as wetting the soil or installing wind barriers will be implemented to further reduce dust concentrations. Work will be stopped if engineering

controls cannot limit dust emissions to acceptable levels. Finally, no visible dust should be observed leaving the Site. If visible dust is observed leaving the Site, additional measures will be employed immediately to reduce dust emissions. Work will be stopped if engineering controls cannot limit dust emissions to acceptable levels.

7.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

7.1 Level D PPE

A minimum of Level D PPE is required for all site personnel at all times, upgraded as necessary depending on task and conditions. Basic Level D PPE shall include the following elements: **1) Hard Hat**; **2) Safety Glasses** (w/side shields); **3) Safety Shoes** (w/steel toes); **4) Body Covering** (long pants, shirt w/ sleeves, collar). Basic Level D equipment will be supplemented as follows:

7.2 Supplemental Level D PPE

	Item	When/Where to be Used
	Flame Retardant Clothing (FRC)	
X	Hearing Protection	As needed, during noise generating activities
X	Work gloves	As needed
	Latex or vinyl surgical gloves	
X	Neoprene or Nitrile gloves	As needed, during contact with potentially affected soil
X	High-Visibility Vest	As needed, when exposed to public vehicular traffic
	Tyvek Coveralls	
	Polycoat Tyvek Coveralls	
	Chemical-resistant boots	
	Face Shield	

7.3 Level C PPE

No Level C PPE (use of Air-Purifying Respirator) will be performed on this job.

7.4 Level B PPE

No Level B work will be performed on this job.

8.0 DECONTAMINATION PROTOCOL

Track out of soil from the Site will be prohibited. Soil or other materials adhered to the vehicles will be removed via brushing or washing before exiting the Site. Water generated from the cleaning processes will be collected and contained on the Site. Sampling may be needed prior to disposal in compliance with any receiving facility requirements or sewer discharge permit(s). Sampling and compliance will be performed by the Contractor.

Remediation derived waste (e.g., PPE, paper towels, gloves) will be placed in trash bags, and disposed of off-Site as municipal waste. Personnel should wash their hands and/or shower prior to engaging in non-work area activities, such as eating.

9.0 SPILL CONTAINMENT

In the event of a release of chemicals, a sorbent material, such as bentonite, will be applied to contain the spill. The GSI project manager and client project manager will be immediately notified.

The removal action contractor will provide training for drivers and Site personnel on spill response procedures. The removal action contractor will ensure that all trucks carrying hazardous waste are equipped with spill kits and that drivers are trained in spill containment and cleanup.

10.0 ILLUMINATION

All planned field activities are located outside and will be conducted during daylight hours; therefore, artificial illumination will not be required.

11.0 SANITATION

Temporary restrooms and a handwashing station will be staged at the Site for the duration of the scope of work.

12.0 DAILY SITE SAFETY MEETINGS

The SSO will conduct a Site Safety Meeting before the start of work each day. As a means of tracking attendance, all on-Site personnel are expected to review and sign the HASP. If deemed necessary by the SSO, additional site safety meetings may be conducted to refresh all field personnel on the safety issues associated with the project tasks.

13.0 REFERENCES

GSI, 2022. Santa Fe Right-of-Way Phase II Environmental Site Assessment – Report of Findings. Historic Santa Fe Right-of-Way, Berkeley, California. November 22.

GSI, 2024. Final Additional Soil Sampling Report, Santa Fe Trackbed to Park, Berkeley, California. September 9.

GSI, 2025, Remedial Action Workplan, Santa Fe Trackbed to Park, Berkeley, California. April 7.

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

TABLES

Table 1. Summary of Screening Levels for Dust in Work Zone Air

TABLE 1: SUMMARY OF SCREENING LEVELS FOR DUST IN WORK ZONE AIR

Santa Fe Trackbed to Park

Berkeley, California

Chemical [1]	Maximum Detected Concentration (mg/kg)	Permissible Exposure Limit (mg/m^3)	Dust Action Level (mg/m^3)
Metals [2]			
Antimony	3.6	0.5	138,900
Arsenic	310	0.01	32
Barium	300	0.5	1,670
Beryllium	0.73	0.0002	270
Cadmium	1.9	0.005	2,630
Chromium (Total)	75	0.005	67
Cobalt	23	0.02	870
Copper	81	1	12,350
Lead	490	0.05	102
Mercury	11	0.025	2,270
Molybdenum	1.5	0.5	333,330
Nickel	120	0.5	4,170
Selenium	1.6	0.2	125,000
Silver	0.56	0.01	17,860
Vanadium	74	0.05	680
Zinc	440	5	11,360
PAHs [3]			
Polynuclear Aromatic Hydrocarbons (PAHs)	4.79	0.2	41,750
Particulates [4]			
Respirable Fraction of Particulates	--	5	**5**

Equation:

Dust Action Level (mg/m^3) = Chemical-specific Action Level (mg/m^3) x EAF x 10^6 (mg/kg)
Maximum Soil Concentration (mg/kg)

$$Action\ Level\ \left(\frac{mg}{m^3}\right) = \frac{Permissible\ Exposure\ Limit\ \left(\frac{mg}{m^3}\right) \times 10^6\ \left(\frac{mg}{kg}\right)}{Maximum\ Soil\ Concentration\ \left(\frac{mg}{kg}\right)}$$

Notes:

1. All chemicals detected in at least one soil sample above the laboratory analytical detection limit were evaluated for work zone air monitoring.

2. California Division of Occupational Safety and Health (Cal/OSHA) Table AC-1, Permissible Exposure Limits (PELs), in California Code of Regulations (CCR) Title 8 Section 5155, October 2,

3. Permissible Exposure Limits for PAH as coal tar pitch volatiles published by California Division of Occupational Safety and Health, https://www.osha.gov/dsg/annotated-pels/tablez-1.html

4. Permissible Exposure Limits for Particulates not Otherwise Regulated published by California Division of Occupational Safety and Health, https://www.osha.gov/chemicaldata/801

Abbreviations:

-- = not applicable

mg/kg = milligrams per kilogram

mg/m^3 = milligrams per cubic meter

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

FIGURES

GSI ENVIRONMENTAL

GSI job No.	6272	Drawn By:	AV
Issued:	8-Jun-2023	Chk'd By:	TRK
		Appv'd By:	JPD
Map ID:	SFROW_SiteOverviewZmo		FIGURE 1

SITE OVERVIEW

Santa Fe Trackbed to Park
Berkeley, California

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern(COPCs: arsenic, lead, mercury, and PAHs).

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P1_AllResults		
Issued: 16-Oct-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS PARCEL 1

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 2

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs).

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)
- Planned City of Berkeley Property Gain
- Planned City of Berkeley Property Reduction

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P2_ResultsLotLines		
Issued: 22-Nov-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS
PARCEL 2

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 3

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs).

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P3_AllResults		
Issued: 16-Oct-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS
PARCEL 3

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 4

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs).

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)
- Planned City of Berkeley Property Gain
- Planned City of Berkeley Property Reduction

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

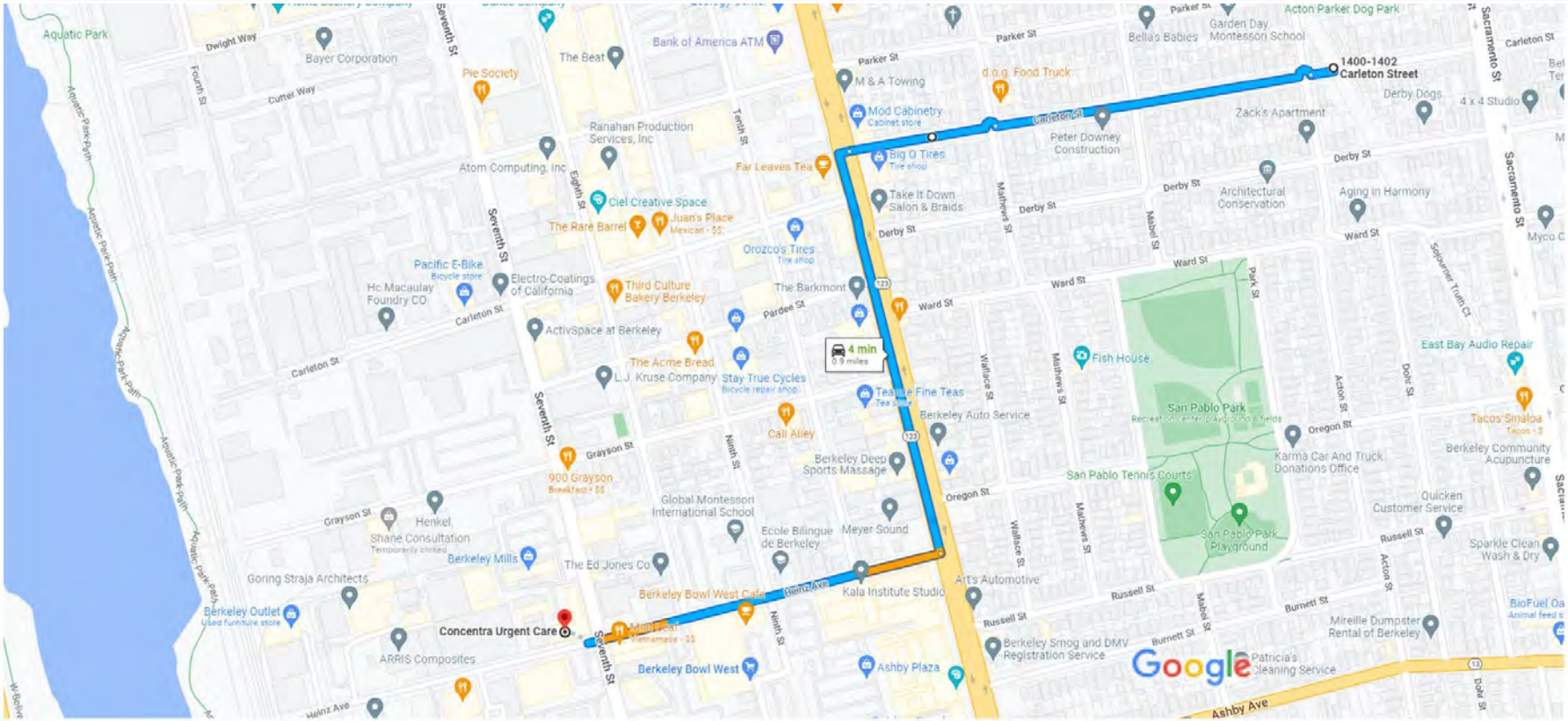
GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P4_ResultsLotLines		
Issued: 22-Nov-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS
PARCEL 4

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 5



Collected Via Google Maps:

1400-1402 Carleton St
Berkeley, CA 94702

1. Head west on Carleton St — 89 ft
2. At the traffic circle, continue straight to stay on Carleton St — 0.2 mi
3. At the traffic circle, continue straight to stay on Carleton St — 0.1 mi
4. Turn left onto San Pablo Ave — 0.3 mi
5. Turn right onto Heinz Ave — 0.3 mi

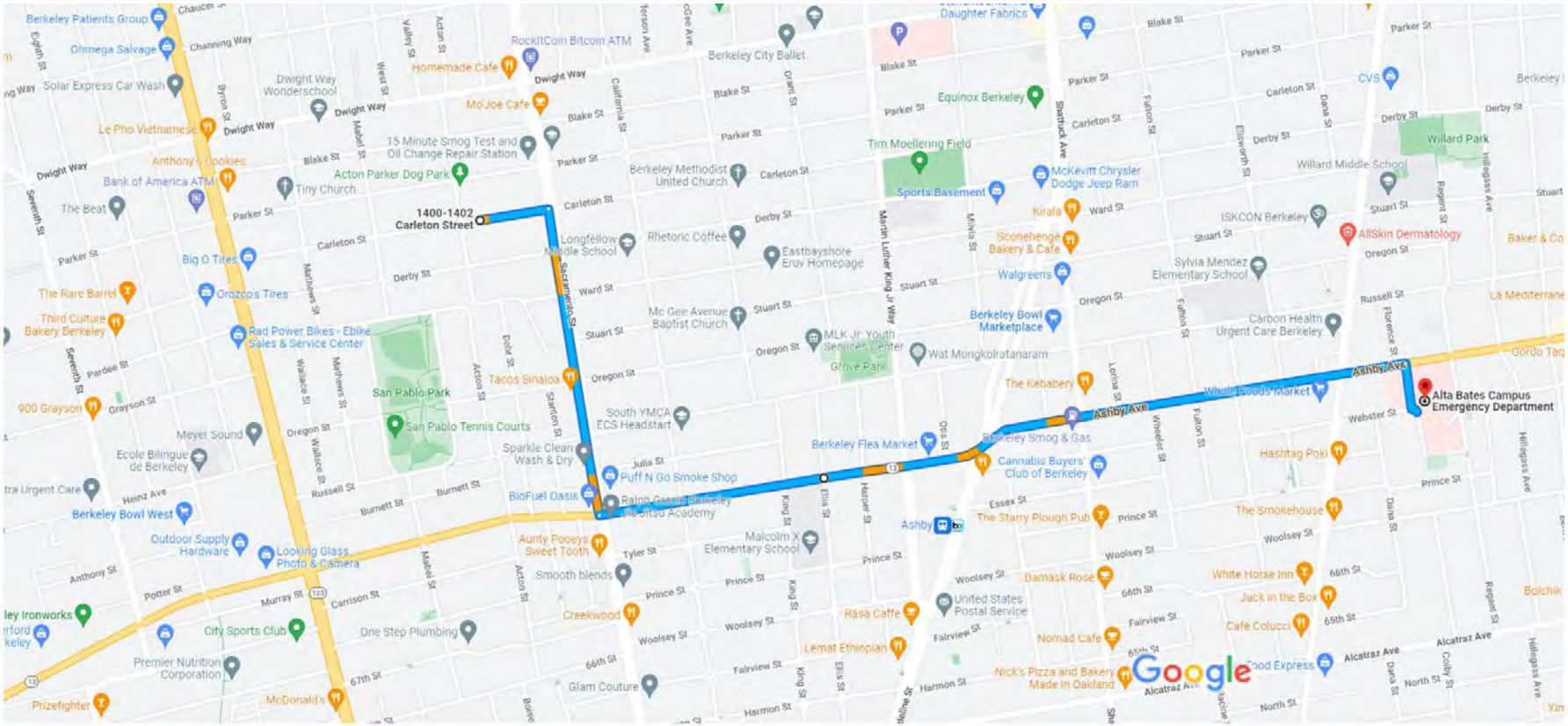
Concentra Urgent Care
2850 Seventh St Suite 100, Berkeley, CA 94710
(510) 845-5170

GSI Job No.	6272	Drawn By:	AV
Issued:	8-Jun-23	Chk'd By:	
Revised:		Aprv'd By:	JPD
Scale:			

GSI ENVIRONMENTAL

FIGURE 6: URGENT CARE LOCATION MAP

Santa Fe Trackbed to Park
Berkeley, California



Collected Via Google Maps:

1400-1402 Carleton St
Berkeley, CA 94702

1. Head east on Carleton St toward Sacramento St — 0.1 mi
2. Turn right at the 1st cross street onto Sacramento St — 0.4 mi
3. Turn left onto Ashby Ave — 1.2 mi
4. Turn right onto Colby St — 400 ft
   Destination will be on the left

Alta Bates Campus Emergency Department
2450 Ashby Ave, Berkeley, CA 94705
(510) 204-1303

GSI ENVIRONMENTAL

GSI Job No.	6272	Drawn By:	AV
Issued:	8-Jun-23	Chk'd By:	
Revised:		Aprv'd By:	JPD
Scale:			

FIGURE 7: HOSPITAL LOCATION MAP

Santa Fe Trackbed to Park
Berkeley, California

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

ATTACHMENTS

Attachment 1	GSI Job Hazard Analyses
Attachment 2	GSI Example Job Hazard Analysis Form
Attachment 3	Daily Tailgate Safety Meeting Form
Attachment 4	Chemical Safety Data Sheets

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

ATTACHMENT 1

GSI Job Hazard Analyses

JOB HAZARD ANALYSIS

Santa Fe Trackbed to Park

Berkeley, California

Task: Staking Excavation Locations

Job Hazard Analyst: Tiffany George, GSI Environmental, Inc.

Reviewed By: James Libby, GSI Environmental, Inc.

Review Date: April 3, 2025

HAZARD TYPES	HAZARD DESCRIPTIONS
1. Physical strain and obstruction to pedestrians 2. Splinters 3. Slips, trips and falls 4. Chemical exposure 5. Struck by vehicles and/or equipment	1. Removing or loading survey equipment from/to the work vehicle could cause back strain or other physical injury. Unloading equipment adjacent to sidewalks could result in potential struck by or slips, trips, and falls hazards to pedestrians. 2. Wood used as excavation stakes can be brittle and has the potential to become embedded under the skin. 3. Uneven surfaces will be present throughout the work area. 4. Identified chemicals of potential concern include arsenic, lead, mercury and polycyclic aromatic hydrocarbons (PAHs). 5. Struck-by hazards occur when a worker is hit by an object, tool, or equipment.

HAZARD CONTROLS

1. Use proper lifting techniques (i.e., lift your legs, hold the load close to your body). Use the buddy system if lifting over 50 lbs. Minimize the distance equipment is carried utilizing a wagon, cart, dolly, etc. Check to ensure no oncoming pedestrians are approaching during loading/unloading. If pedestrians are approaching, pause work until the path is clear.
2. Wear protective work gloves appropriate for the hazard and work tasks.
3. Identify and remove trip hazards, and keep materials stored outside of designated walkways.
4. Keep equipment stored unless in use. Maintain clear sight of the walkway. Refrain from using a cell phone while walking.
5. Level D personal protective equipment (PPE) shall be worn at all times when other operations are occurring within the same work area. Wash hands with soap and water prior to using the restroom, eating or applying sunscreen. Eating, drinking, smoking, gum chewing and oral tobacco use are not permitted in areas where chemical exposure could occur.
6. Avoid generation of visible dust from work activities, and stand upwind of excavation and stockpiled soil, if possible.

7. Clearly delineate work zones and designate vehicular travel path, stop/direct traffic during moving of equipment and supplies as necessary.
8. Keep vigilant for passing vehicles and equipment.

RATIONALE / COMMENT / ADDITIONAL INFORMATION

JOB HAZARD ANALYSIS

Santa Fe Trackbed to Park
Berkeley, California

Task: Excavation Oversight

Job Hazard Analyst: Tiffany George, GSI Environmental, Inc.

Reviewed By: James Libby, GSI Environmental, Inc.

Review Date: April 3, 2025

HAZARD TYPES	HAZARD DESCRIPTIONS
1. Struck by/Caught between equipment 2. Pinch points 3. Falling soil/debris 4. Slips, trips and falls 5. Chemical exposure 6. Open excavations 7. Underground and above ground utilities 8. Exposure to public	1. Onsite personnel are subject to being accidentally hit by or pinned by heavy equipment. 2. Personnel close to equipment could get pinched by heavy or rotating machinery. 3. Soil and or falling debris could fall from the excavation bucket when moving between the excavation and the truck or stockpile. 4. Uneven surfaces, open excavation, and equipment will be present throughout the work area. 5. Identified chemicals of potential concern include arsenic, lead, mercury and polycyclic aromatic hydrocarbons (PAHs). 6. Excavations to a minimum depth of 2 feet and a maximum depth of 6 feet below ground surface may be left open during work hours. 7. Although the parcels are vacant, above and below ground utilities may be present. 8. Stockpiled excavated soil could potentially cause chemical exposure to the surrounding residences and the public.

HAZARD CONTROLS

1. Nonessential personnel to stay clear of work area when excavation is in progress. Equipment must be equipped with a back-up alarm. Always receive verbal or physical confirmation from equipment operators before crossing through their work area. Be diligent about staying outside of an operator's blind spot and the swing radius of heavy equipment.
2. Wear Level D PPE, including leather or protective palmed gloves. Keep hands clear of potential pinch points. Refrain from wearing loose clothing or jewelry near rotating equipment.
3. Level D personal protective equipment (PPE) shall be worn at all times within the work area. Wash hands with soap and water prior to using the restroom, eating or applying sunscreen. Eating, drinking, smoking, gum chewing and oral tobacco use are not permitted in areas where chemical exposure could occur. Nitrile gloves shall be worn when handling soil.

4. Keep equipment stored unless in use. Maintain clear sight of the walkway. Refrain from using a cell phone while walking or in active work zones. Remove all trip hazards by keeping materials/objects organized and out of walkways.
5. Utilize caution tape, spray paint, signs or barricades to demarcate open excavations and increase visibility. Maintain a minimum distance of at least 2 feet from any open excavation. A competent person must approve all entries into excavations over 4 feet deep before work begins, and after any event that could affect its stability, such as rain or earthquakes. Do not enter excavations of any depth with standing water or if signs of sloughing are present. Ensure the means of egress is located no more than 25 feet away from workers in a trench or excavation.
6. No visible dust should be observed leaving the Site. Spray water on loose soils as necessary to mitigate dust generation. Air quality monitoring will be performed in accordance with Section 6.0 of the project Health and Safety Plan.
7. For underground utilities, confirm appropriate underground utility clearance procedures have been completed prior to ground penetrations, and employ other utility clearance/locator practices, as appropriate for conditions. Utilize hand digging or vacuum post-holing within 3 feet of utility locations or other high-risk conditions. For overhead utilities, maintain proper clearance and employ other appropriate precautions for the conditions.
8. If it is necessary to temporarily stockpile soil during excavation activities, all stockpiled soil will be placed on plastic sheeting and appropriately bermed in accordance with best management practices (BMPs) described in the Construction General Permit. Stockpiled soil will be covered at the end of each workday or in the event of rain. However, the method of covering will be determined based on the anticipated time that the stockpiles will be left in place, weather conditions, regulatory requirements (i.e., BMPs and Storm Water Prevention Plan provisions), and other practical factors such as the size of the stockpiles. The stockpiled soil will be fenced or otherwise secured, and located as far away as possible from storm drain inlets.

RATIONALE / COMMENT / ADDITIONAL INFORMATION

JOB HAZARD ANALYSIS

Santa Fe Trackbed to Park

Berkeley, California

Task: Perimeter Air Monitoring

Job Hazard Analyst: **Job Hazard Analyst**: Tiffany George, GSI Environmental, Inc.

Reviewed By: James Libby, GSI Environmental, Inc.

Review Date: April 3, 2025

HAZARD TYPES	HAZARD DESCRIPTIONS
1. Manual lifting 2. Slips, trips and falls 3. Chemical exposure 4. Heavy equipment 5. Open excavations	1. Dust monitors need to be secured to an adjustable tripod approximately 4 to 5 feet off the ground. 2. Uneven surfaces and potentially unstable soil will be present throughout the work area. 3. Identified chemicals of potential concern include arsenic, lead, mercury and polycyclic aromatic hydrocarbons (PAHs). 4. Excavators and heavy trucks will be actively working between 7am and 5pm. 5. Excavations to a minimum depth of 2 feet and a maximum depth of 6 feet below ground surface may be left open during work hours.

HAZARD CONTROLS

1. Use proper lifting techniques (i.e., lift your legs, hold the load close to your body). Use the buddy system if lifting over 50 lbs. Minimize the distance equipment is carried utilizing a wagon, cart, dolly, etc.
2. Keep a clean work area and clear walking path by ensuring tools are stored and organized. Maintain clear sight of the walkway. Refrain from using a cell phone while walking.
3. Wear nitrile gloves when handling equipment. Level D personal protective equipment (PPE) shall be worn at all times within the work area. Wash hands with soap and water prior to using the restroom, eating or applying sunscreen. Eating, drinking, smoking, gum chewing and oral tobacco use are not permitted in areas where chemical exposure could occur. Adhere to the Air Quality Monitoring protocols outlined in Section 6.0 of the Remedial Action Implementation HASP. Calibrate and inspect monitoring equipment before each use.
4. Check monitoring readings remotely, when possible. Wear high visibility clothing. Always receive verbal or physical confirmation from equipment operators before crossing through their work area. Be diligent about staying outside of an operator's blind spot as well as the swing radius of heavy equipment.
5. Utilize caution tape, spray paint, signs or barricades to demarcate open excavations and increase visibility. Maintain a minimum distance of at least 2 feet from any open excavation. A competent person must approve all entries into excavations over 4 feet

deep. Do not enter excavations of any depth of standing water or signs of sloughing are present.
Avoid Struck-By injuries by making eye contact with equipment and vehicle operators to confirm they see you and are aware of your presence. Always be vigilant and watch for operators who might not be looking at you. Never place yourself between a vehicle and an immovable object.

Walk around perimeter of excavation, if possible. Confirm a competent person has inspected the excavation prior to excavation entry. Do note enter the excavation when standing water exists, sloughing present, or any other life-threating hazard present.

RATIONALE / COMMENT / ADDITIONAL INFORMATION

In accordance with GSI's Remedial Action Workplan[1], work will be stopped if engineering controls such as the application of water to soil and the installation of wind barriers cannot limit dust emissions to acceptable levels.

[1] GSI, 2025, Remedial Action Workplan, Santa Fe Trackbed to Park, Berkeley, California. April 7.

JOB HAZARD ANALYSIS

Santa Fe Trackbed to Park

Berkeley, California

Task: Trucking - Off-Hauling and Importing Soils

Job Hazard Analyst: Tiffany George, GSI Environmental, Inc.

Reviewed By: James Libby, GSI Environmental, Inc.

Review Date: April 3, 2025

HAZARD TYPES	HAZARD DESCRIPTIONS
1. Struck by/Caught between equipment 2. Pinch points 3. Falling soil/debris 4. Slips, trips and falls 5. Chemical exposure 6. Open excavations 7. Above ground utilities 8. General public 9. Excessive Noise	1. Onsite personnel are subject to being accidentally hit by or pinned by heavy equipment. 2. Personnel close to equipment could get pinched by rotating machinery. 3. Soil and or falling debris could fall from the excavation bucket when moving between the excavation and the truck or stockpile. 4. Uneven surfaces will be present throughout the work area. 5. Identified chemicals of potential concern include arsenic, lead, mercury and polycyclic aromatic hydrocarbons (PAHs). 6. Excavations to a minimum depth of 2 feet and a maximum depth of 6 feet below ground surface may be left open during work hours. 7. Although the parcels are vacant, above ground utilities may be present. 8. Trucks could encounter pedestrians on the sidewalks when entering and exiting the work area. 9. Excessive noise primarily causes hearing loss, but also contributes to stress, high blood pressure, and sleep disturbances, with long-term exposure leading to permanent hearing damage.

HAZARD CONTROLS

1. Nonessential personnel to stay clear of work area when loading and or backfilling are in progress. Equipment must be equipped with a back-up alarm. Always receive verbal or physical confirmation from equipment operators before crossing through their work area. Be diligent about staying outside of an operator's blind spot and the back of the vehicle. Always be vigilant and watch for operators who might not be looking at you. Never place yourself between a vehicle and an immovable object.
2. Wear Level D PPE, including leather or protective palmed gloves. Keep hands clear of potential pinch points. Refrain from wearing loose clothing or jewelry near moving equipment.

3. Level D personal protective equipment (PPE) shall be worn at all times within the work area. Wash hands with soap and water prior to using the restroom, eating or applying sunscreen. Eating, drinking, smoking, gum chewing and oral tobacco use are not permitted in areas where chemical exposure could occur.
4. Keep equipment stored unless in use. Maintain clear sight of the walkway. Refrain from using a cell phone while walking.
5. Utilize caution tape, spray paint, signs or barricades to demarcate open excavations and increase visibility. Maintain a minimum distance of at least 2 feet from any open excavation. A competent person must approve all entries into excavations over 4 feet deep. Do not enter excavations of any depth of standing water or signs of sloughing are present.
6. Maintain proper clearance and employ other appropriate precautions to avoid overhead utilities.
7. Utilize traffic control and flaggers to eliminate a potential collision between equipment and pedestrians.
8. Use a dedicated spotter while heavy equipment is in operation. Get acknowledgement from operator before approaching equipment in use.
9. Wear ear plugs or muffs as necessary around operating equipment and implement a system of hand signals understood by all. Limit the amount of time workers spend in noisy areas, as necessary. Increase distance between workers and loud equipment during breaks.

RATIONALE / COMMENT / ADDITIONAL INFORMATION

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

ATTACHMENT 2

GSI Example Job Hazard Analysis Form

JOB HAZARD ANALYSIS FORM

Santa Fe Trackbed to Park

Berkeley, California

Task:_____

Job Hazard Analyst/Employer: _____

Reviewed By/Employer:_____

Date Reviewed:_____

TASK DESCRIPTION:	
HAZARD TYPE	**HAZARD DESCRIPTION**
HAZARD CONTROLS	
RATIONALE / COMMENT / ADDITIONAL INFORMATION	

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

ATTACHMENT 3

Daily Tailgate Safety Meeting Form

GSI ENVIRONMENTAL INC.
GSI PERSONNEL ONLY
DAILY TAILGATE SAFETY MEETING

Project/Location: _____ GSI Job No._____

_____ Date: _____

Site Safety Officer:_____

Meeting Conducted By: _____

Meeting Attended By:

NAME	SIGNATURE	TIME ONSITE-OFFSITE

_____ ***Non-GSI*** Personnel Present (Use Attachment A).

Task	Hazard(s)*	PPE

*Hazard	Hazard Description	How to Mitigate
Mechanical (M)		
Weather (W)		
Chemical (C)		
Biological (B)		
Other (O)		

Air Quality Monitoring: _____ Required (See record on Attachment B.) _____ Not Required

Site Safety Officer: _____ *"I have reviewed project tasks/hazards with the field team and have visually inspected the work area for proper housekeeping and other potential hazards (e.g., slip, trip, pinch points)."*

Signature: _____ Date: _____

HEAVY EQUIPMENT USE (IF APPLICABLE – USE ATTACHMENT A)

Type of Equipment & Model: _____ Company: _____

ACCIDENTS/INJURIES/INCIDENTS

(Description of incident and actions taken. Attach additional sheets as needed.)

GSI Job No._____
Date: _____

GSI ENVIRONMENTAL INC.

NON-GSI PERSONNEL ONLY

DAILY TAILGATE SAFETY MEETING – ATTACHMENT A

I, the undersigned, attended the daily site safety meeting conducted by GSI Environmental Inc. (GSI) and have had the opportunity to ask questions about health and safety issues relating to this project. I understand that by signing this Daily Site Safety Record (DSSR), GSI is not my supervisor or controlling contractor; and therefore, is not responsible for my health and safety, as my employer is solely responsible for my health and safety.

NAME	COMPANY	SIGNATURE	TIME ON-SITE - OFF-SITE

Note: Non-GSI personnel include, but not limited to, GSI-subcontractors, 3rd party subcontractors, clients, site representatives, and/or regulatory representatives.

HEAVY EQUIPMENT USE (IF APPLICABLE)

Type of Equipment & Model: _____ Owned: ____ Rented: ____

Certification: *"I have been properly trained on the use of this equipment. I have inspected this equipment and confirmed it to be in good working condition."*

Signature: _____ Date: _____

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

ATTACHMENT 4

Chemical Safety Data Sheets

SAFETY DATA SHEET

Revision Date 30-Mar-2024 **Revision Number** 3

1. Identification

Product Name **Arsenic powder**

Cat No. : **10101**

CAS No 7440-38-2
Synonyms No information available

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Emergency Telephone Number
For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 3
Acute Inhalation Toxicity - Dusts and Mists	Category 3
Carcinogenicity	Category 1A

Label Elements

Signal Word
Danger

Hazard Statements
May cause cancer
Toxic if swallowed or if inhaled

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician
Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects
WARNING. Cancer - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Arsenic	7440-38-2	<=100

4. First-aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms and effects	None reasonably foreseeable.
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	approved class D extinguishers. Do not use water or foam.
Unsuitable Extinguishing Media	No information available
Flash Point	No information available
Method -	No information available
Autoignition Temperature	No information available
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical
Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products
arsenic oxides.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	0	-

6. Accidental release measures

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.
Environmental Precautions	Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.
Methods for Containment and Clean Up	Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

7. Handling and storage

Handling	Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.
Storage.	Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Oxidizing agent.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Arsenic	TWA: 0.01 mg/m³	(Vacated) TWA: 0.5 mg/m³	IDLH: 5 mg/m³ Ceiling: 0.002 mg/m³	TWA: 0.01 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type: Particulates filter conforming to EN 143.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	No information available
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	817 °C / 1502.6 °F
Boiling Point/Range	614 °C / 1137.2 °F
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	23 hPa @ 20 °C
Vapor Density	Not applicable
Specific Gravity	5.778 g/cm3
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	As
Molecular Weight	74.92

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Oxidizing agent

Hazardous Decomposition Products arsenic oxides

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Arsenic	LD50 = 15 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Arsenic	7440-38-2	Group 1	Known	A1	X	A1

IARC (International Agency for Research on Cancer)

IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

Mexico - Occupational Exposure Limits - Carcinogens
A1 - Confirmed Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Confirmed Animal Carcinogen
A4 - Not Classifiable as a Human Carcinogen
A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Persistence and Degradability Insoluble in water May persist

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No	UN1558
Proper Shipping Name	ARSENIC
Hazard Class	6.1
Packing Group	II

TDG

UN-No	UN1558
Proper Shipping Name	ARSENIC
Hazard Class	6.1
Packing Group	II

IATA

UN-No	UN1558
Proper Shipping Name	ARSENIC
Hazard Class	6.1
Packing Group	II

IMDG/IMO

UN-No	UN1558
Proper Shipping Name	ARSENIC
Hazard Class	6.1
Packing Group	II

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Arsenic	7440-38-2	X	ACTIVE	-

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Arsenic	7440-38-2	X	-	231-148-6	X	X		X	X	KE-01933

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Arsenic	7440-38-2	<=100	0.1 %	-

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Arsenic	-	-	X	X

Clean Air Act

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Arsenic	1 lb	-	1 lb 0.454 kg

California Proposition 65 This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Arsenic	7440-38-2	-	0.06 µg/day 10 µg/day	

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Arsenic	X	X	X	X	X

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Arsenic	7440-38-2	-	Use restricted. See item 75. (see link for restriction details)	-

REACH links
https://echa.europa.eu/substances-restricted-under-reach

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Arsenic	7440-38-2	Listed	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Arsenic	7440-38-2	Not applicable	Not applicable	Not applicable	Annex I - Y24

16. Other information

Prepared By Health, Safety and Environmental Department
Email: chem.techinfo@thermofisher.com
www.thermofisher.com

Revision Date 30-Mar-2024
Print Date 30-Mar-2024
Revision Summary New emergency telephone response service provider.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

SAFETY DATA SHEET

Creation Date 03-Apr-2012 **Revision Date** 09-Feb-2024 **Revision Number** 7

1. Identification

Product Name **Lead**

Cat No. : **AC198110000; AC198110010; AC198110050**

CAS No 7439-92-1
Synonyms Lead metal

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Carcinogenicity	Category 1B
Reproductive Toxicity	Category 1A
Effects on or via lactation	
Specific target organ toxicity - (repeated exposure)	Category 1
Target Organs - Kidney, Central nervous system (CNS), Blood.	

Label Elements

Signal Word
Danger

Hazard Statements
May damage fertility. May damage the unborn child

May cause harm to breast-fed children
Causes damage to organs through prolonged or repeated exposure
May cause cancer

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not breathe dust/fume/gas/mist/vapors/spray
Avoid contact during pregnancy/while nursing
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Response
IF exposed or concerned: Get medical attention/advice
Storage
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects
WARNING. Cancer and Reproductive Harm - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Lead powder	7439-92-1	>95

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms and effects None reasonably foreseeable.

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products
Lead. lead oxides.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	0	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean Up Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong acids. Ammonium nitrate: fertilizers capable of self-sustaining decomposition. Peroxides.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Lead powder	TWA: 0.05 mg/m³	TWA: 50 µg/m³	IDLH: 100 mg/m³ TWA: 0.050 mg/m³	TWA: 0.05 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended Filter type:	Particulates filter conforming to EN 143.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid Powder
Appearance	Grey
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	327.4 °C / 621.3 °F
Boiling Point/Range	1740 °C / 3164 °F @ 760 mmHg
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	1.7 mmHg @ 1000 °C
Vapor Density	Not applicable
Specific Gravity	No information available
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Pb
Molecular Weight	207.19

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Exposure to air.
Incompatible Materials	Strong acids, Ammonium nitrate: fertilizers capable of self-sustaining decomposition, Peroxides
Hazardous Decomposition Products	Lead, lead oxides
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information
Component Information
Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization May cause sensitization by skin contact

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Lead powder	7439-92-1	Group 2A	Reasonably Anticipated	A3	X	A3

IARC (International Agency for Research on Cancer)
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)
NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens
Mexico - Occupational Exposure Limits - Carcinogens
A1 - Confirmed Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Confirmed Animal Carcinogen
A4 - Not Classifiable as a Human Carcinogen
A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects No information available

Reproductive Effects Contains a known or suspected reproductive toxin.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure Kidney Central nervous system (CNS) Blood

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea

Lead powder	Not listed	LC50: = 1.32 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 1.17 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: = 0.44 mg/L, 96h semi-static (Cyprinus carpio)	Not listed	EC50: = 600 µg/L, 48h (water flea)

Persistence and Degradability Insoluble in water

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Technical Name Lead powder
Hazard Class 9
Packing Group III

TDG

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

IATA

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

IMDG/IMO

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Lead powder	7439-92-1	X	ACTIVE	-

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

Component	CAS No	**TSCA 12(b)** - Notices of Export
Lead powder	7439-92-1	Section 6

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Lead powder	7439-92-1	X	-	231-100-4	X	X		X	X	KE-21887

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. Note that PBT chemicals are not eligible for the de minimis exemption. For these chemicals, supplier notification limits are provided.

> 0 % = no low concentration cut-off set, supplier notification limit applies.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Lead powder	7439-92-1	>95	> 0 %	RT = 100 lb

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Lead powder	-	-	X	X

Clean Air Act

OSHA - Occupational Safety and Health Administration — Not applicable

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Lead powder	30 µg/m³ Action Level 50 µg/m³ TWA	-

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Lead powder	10 lb	-	10 lb 4.54 kg

California Proposition 65 This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Lead powder	7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive	15 µg/day	Developmental Carcinogen

U.S. State Right-to-Know

Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Lead powder	X	X	X	X	X

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Lead powder	7439-92-1	-	Use restricted. See item 72. (see link for restriction details) Use restricted. See item 30. (see link for restriction details) Use restricted. See item 63. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	SVHC Candidate list - 231-100-4 - Toxic for reproduction (Article 57c)

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

REACH links
https://echa.europa.eu/authorisation-list
https://echa.europa.eu/substances-restricted-under-reach
https://echa.europa.eu/candidate-list-table

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Lead powder	7439-92-1	Listed	Not applicable	Not applicable	0.1% (Max. Conc.)

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Lead powder	7439-92-1	Not applicable	Not applicable	Not applicable	Annex I - Y31

16. Other information

Prepared By

Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 03-Apr-2012
Revision Date 09-Feb-2024
Print Date 09-Feb-2024
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

SAFETY DATA SHEET

Creation Date 20-Aug-2014 **Revision Date** 09-Feb-2024 **Revision Number** 5

1. Identification

Product Name **Mercury (Certified ACS)**

Cat No. : **M141-1LB; M141-6LB**

Synonyms Colloidal mercury; Hydrargyrum; Metallic mercury

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute Inhalation Toxicity - Vapors	Category 2
Reproductive Toxicity	Category 1B
Specific target organ toxicity - (repeated exposure)	Category 1
Target Organs - Central nervous system (CNS), Kidney.	

Label Elements

Signal Word
Danger

Hazard Statements
Fatal if inhaled
May damage the unborn child
Causes damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects
WARNING. Reproductive Harm - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Mercury	7439-97-6	100

4. First-aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms and effects None reasonably foreseeable.

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. approved class D extinguishers.

Unsuitable Extinguishing Media Water may be ineffective

Flash Point Not applicable
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Very toxic. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Keep product and empty container away from heat and sources of ignition. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products
Mercury oxide. Toxic fumes.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
4	0	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required. No special precautions required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Should not be released into the environment. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Pick up and transfer to properly labelled containers.

7. Handling and storage

Handling Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep in a dry place. Keep away from acids. Incompatible Materials. Strong oxidizing agents. Ammonia. Metals. Halogens.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Mercury	TWA: 0.025 mg/m³ Skin	(Vacated) TWA: 0.05 mg/m³ Ceiling: 0.1 mg/m³ (Vacated) STEL: 0.03 mg/m³ Skin (Vacated) Ceiling: 0.1 mg/m³	IDLH: 10 mg/m³ TWA: 0.05 mg/m³ Ceiling: 0.1 mg/m³	TWA: 0.025 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. None under normal use conditions.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection No special protective equipment required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Silver
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-38.87 °C / -38 °F
Boiling Point/Range	356.72 °C / 674.1 °F
Flash Point	Not applicable
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	0.002 mmHg @ 25 °C
Vapor Density	7.0
Specific Gravity	13.59 (H2O=1)
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	Hg
Molecular Weight	200.59

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Excess heat.

Incompatible Materials Strong oxidizing agents, Ammonia, Metals, Halogens

Hazardous Decomposition Products Mercury oxide, Toxic fumes

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Mercury	Not listed	Not listed	LC50 < 27 mg/m³ (Rat) 2 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Mercury	7439-97-6	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects May cause harm to the unborn child.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure Central nervous system (CNS) Kidney

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Mercury	Not listed	0.9 mg/L LC50 96h	Not listed	Not listed

		0.18 mg/L LC50 96h 0.16 mg/L LC50 96h 0.5 mg/L LC50 96h		

Persistence and Degradability Insoluble in water May persist

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Mercury - 7439-97-6	U151	-

14. Transport information

DOT

UN-No	UN2809
Proper Shipping Name	Mercury
Hazard Class	8
Subsidiary Hazard Class	6.1
Packing Group	III

TDG

UN-No	UN2809
Proper Shipping Name	Mercury
Hazard Class	8
Subsidiary Hazard Class	6.1
Packing Group	III

IATA

UN-No	UN2809
Proper Shipping Name	Mercury
Hazard Class	8
Subsidiary Hazard Class	6.1
Packing Group	III

IMDG/IMO

UN-No	UN2809
Proper Shipping Name	Mercury
Hazard Class	8
Packing Group	III

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Mercury	7439-97-6	X	ACTIVE	S;12C

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule.

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export

Component	CAS No	**TSCA 12(b)** - Notices of Export
Mercury	7439-97-6	Section 5

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Mercury	7439-97-6	X	-	231-106-7	X	X		X	X	KE-23117

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. Note that PBT chemicals are not eligible for the de minimis exemption. For these chemicals, supplier notification limits are provided.

> 0 % = no low concentration cut-off set, supplier notification limit applies.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Mercury	7439-97-6	100	> 0 %	RT = 10 lb

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Mercury	-	-	X	X

Clean Air Act

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Mercury	1 lb	-	1 lb 0.454 kg

California Proposition 65 This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Mercury	7439-97-6	Developmental	-	Developmental

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Mercury	X	X	X	X	X

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Mercury	7439-97-6	-	Use restricted. See item 18[a]. (see link for restriction details) Use restricted. See item 30. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	-

REACH links
https://echa.europa.eu/substances-restricted-under-reach

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Mercury	7439-97-6	Listed	Not applicable	Not applicable	0.1% (Max. Conc.)

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Mercury	7439-97-6	Not applicable	Not applicable	X	Annex I - Y29

16. Other information

Prepared By Regulatory Affairs

Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date	20-Aug-2014
Revision Date	09-Feb-2024
Print Date	09-Feb-2024
Revision Summary	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

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End of SDS

SAFETY DATA SHEET

Revision Date 25-Mar-2024 **Revision Number** 4

1. Identification

Product Name **Benzo[a]pyrene**

Cat No. : **15856**

CAS No 50-32-8
Synonyms Benzo[def]chrysene.; 3,4-Benzopyrene; 3,4-Benzpyrene

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Emergency Telephone Number
For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Sensitization	Category 1
Germ Cell Mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 1B

Label Elements

Signal Word
Danger

Hazard Statements
May cause an allergic skin reaction
May cause genetic defects

May cause cancer
May damage fertility. May damage the unborn child

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Response
IF exposed or concerned: Get medical attention/advice
Skin
IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
Storage
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects
WARNING. Cancer - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Benzo[a]pyrene	50-32-8	> 96

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms and effects None reasonably foreseeable. . May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products
Carbon monoxide (CO). Carbon dioxide (CO_2).
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean Up Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Oxidizing agent.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Benzo[a]pyrene		TWA: 0.2 mg/m³		

Legend

OSHA - Occupational Safety and Health Administration

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended Filter type:	Particulates filter conforming to EN 143.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Dark yellow
Odor	aromatic
Odor Threshold	No information available
pH	Not applicable
Melting Point/Range	175 - 179 °C / 347 - 354.2 °F
Boiling Point/Range	495 °C / 923 °F @ 760 mmHg
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Specific Gravity	No information available
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	C20H12
Molecular Weight	252.31

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products.
Incompatible Materials	Oxidizing agent
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO_2)
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information
Component Information
Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization May cause sensitization by skin contact

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Benzo[a]pyrene	50-32-8	Group 1	Reasonably Anticipated	A2	X	A2

IARC (International Agency for Research on Cancer)

IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information

Component	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Benzo[a]pyrene	Group III Chemical	Not applicable	Not applicable

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Persistence and Degradability May persist

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

Component	log Pow
Benzo[a]pyrene	6.06

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Benzo[a]pyrene - 50-32-8	U022	-

14. Transport information

DOT

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Technical Name Benzo[a]pyrene
Hazard Class 9
Packing Group III

TDG

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

IATA

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

IMDG/IMO

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Benzo[a]pyrene	50-32-8	X	ACTIVE	-

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Benzo[a]pyrene	50-32-8	X	-	200-028-5	X	-		-	X	KE-05-0184

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. Note that PBT chemicals are not eligible for the de minimis exemption. For these chemicals, supplier notification limits are provided.
> 0 % = no low concentration cut-off set, supplier notification limit applies.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Benzo[a]pyrene	50-32-8	> 96	> 0 %	RT = 100 lb

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Benzo[a]pyrene	-	-	X	X

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Benzo[a]pyrene	1 lb	-	1 lb 0.454 kg

California Proposition 65 This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Benzo[a]pyrene	50-32-8	Carcinogen	0.06 µg/day	Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Benzo[a]pyrene	X	X	X	X	X

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Benzo[a]pyrene	50-32-8	-	Use restricted. See item 72. (see link for restriction details) Use restricted. See item 30. (see link for restriction details) Use restricted. See item 28. (see link for restriction details) Use restricted. See item 50[a]. (see link for restriction details) Use restricted. See item 29. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	SVHC Candidate list - 200-028-5 - Carcinogenic (article 57a); Mutagenic (Article 57b); Toxic for reproduction (Article 57c); PBT (Article 57d); vPvB (Article 57e)

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

REACH links
https://echa.europa.eu/authorisation-list
https://echa.europa.eu/substances-restricted-under-reach
https://echa.europa.eu/candidate-list-table

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Benzo[a]pyrene	50-32-8	Not applicable	Annex III - Substance subject to release reduction	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
See table for values

PFAS Legend
Listed = Meets the PFAS definition of the named authority

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities	Seveso III Directive (2012/18/EC) - Qualifying Quantities	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)

		for Major Accident Notification	for Safety Report Requirements		
Benzo[a]pyrene	50-32-8	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Prepared By
Health, Safety and Environmental Department
Email: chem.techinfo@thermofisher.com
www.thermofisher.com

Revision Date 25-Mar-2024
Print Date 25-Mar-2024
Revision Summary New emergency telephone response service provider.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX F

Administrative Record

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Katherine M. Butler, MPH, Director
8800 Cal Center Drive
Sacramento, California 95826-3200
https://dtsc.ca.gov/

Gavin Newsom
Governor

ADMINISTRATIVE RECORD
BERKELEY SANTA FE TRACKBED TO PARK
REMOVAL ACTION WORKPLAN

This Administrative Record List is provided in accordance with Subpart I of the National Contingency Plan to identify all documents that were relied on or considered when approving the subject remedial action. An information repository has been established at the Department file room to contain the documents constituting the Administrative Record. The information is available for review by appointment at:

Department of Toxic Substances Control, Region 1
8800 California Center Drive
Sacramento, California 95826
(916) 255-3758

Administrative Record List

1) 16 United States Code (U.S.C.) §1531 et seq. (Endangered Species Act of 1973)
2) California Air Resources Control Board (CARB), 2023. Particulate Matter and Health Fact Sheet, March.
3) California Code of Regulations (CCR) Title 8 Section (§) 5155. October 2. (Airborne Contaminants)
4) CCR Title 8 § 5192 California Occupational Safety and Health. (Hazardous Waste Operations and Emergency Response)
5) CCR Title 22 Chapter 30 Hazardous Waste Haulers Act (Hazardous Waste Transporter Requirements)
6) CCR Title 22, Division 4.5, Chapter 11, Article 3, § 66261.24 (Characteristic of Toxicity)
7) CCR Title 22 § 12000 et seq. Safe Drinking Water and Toxic Enforcement Act (Proposition 65)
8) CCR Title 22 § 66262.1 et seq. (Hazardous Waste Generator Requirements)

9) CCR Title 22 § 66268.7 et seq. (Testing, Tracking, and Recordkeeping Requirements for Generators, Treaters, and Disposal Facilities)

10) CCR Title 22 §69021 (Toxicity Criteria Rule)

11) California Department of Toxic Substances Control (DTSC), 1998, Memorandum: Removal Action Workplans (RAWs), September 23.

12) DTSC, 2001, Information Advisory: Clean Imported Fill Material, October.

13) DTSC, 2008, Removal Action Workplan DTSC Guidance Template, February 13.

14) DTSC, 2009, Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process, July 1. DTSC, 2015, Preliminary Endangerment Assessment Guidance Manual, October.

15) DTSC, 2019a, Human Health Risk Assessment Note 1, Default Human Health Exposure Factors, April.

16) DTSC, 2019b, Human Health Risk Assessment Note 10, Toxicity Criteria, February 25.

17) DTSC, 2022a, Human Health Risk Assessment Note 4, Guidance for Screening Level Human Health Risk Assessments, March 29.

18) DTSC, 2025, Human and Ecological Risk (HERO) Human Health Risk Assessment Note 3 – DTSC-Modified Screening Levels (DTSC SLs), April.

19) DTSC, 2023, Docket Number HAS-FY22/23-069 Standard Voluntary Agreement, March.

20) DTSC, 2023, Department of Toxic Substances Control Site Visit Report. Berkeley Santa Fe Trackbed to Park, January 11.

21) DTSC, 2023, Department of Toxic Substances Control – Community Survey - Site Visit Report, Berkeley Santa Fe Trackbed to Park (Site), October.

22) DTSC, 2023, Approval of Revised Additional Soil Sampling Work Plan At Santa Fe Trackbed to Park Property, Berkeley, Alameda County, California, December, December 13.

23) DTSC, 2024, Department of Toxic Substances Control Community Profile - Berkeley Santa Fe Trackbed to park, March 15.

24) DTSC, 2024, Department of Toxic Substances Control Site Visit Report. Berkeley Santa Fe Trackbed to Park, April 18.

25) DTSC, 2024, Approval of the Addendum Additional Soil Sampling Work Plan at Santa Fe Trackbed to Park Property, Berkeley, Alameda County, California, December, April 24.

26) DTSC, 2024, Approval of Final Additional Soil Investigation Report at Santa Fe Trackbed to Park Property, Berkeley, Alameda County, California, September, September 24.

27) California Division of Occupational Safety and Health (Cal/OSHA), 2019, Table AC-1, Permissible Exposure Limits (PELs)

28) Cal/OSHA, https://www.osha.gov/dsg/annotated-pels/tablez-1.htm (Annotated PELs Tables)

29) Cal/OSHA, https://www.osha.gov/chemicaldata/801 (Particulates Not Otherwise Regulated, Total and Respirable Dust)

30) California Health and Safety Code (HSC), Chapter 6.5, section 25100 et seq., 22 CCR 66260.1 et seq. (Hazardous Waste Control Act)

31) HSC 25123.3(a)(2) (Stockpiling Requirements for Contaminated Soil)

32) California Regional Water Quality Control Board, 2019, San Francisco Bay Region, Environmental Screening Levels, January.

33) City of Berkeley, 2022, Application for Oversight – Berkeley Santa Fe Trackbed to Park, Berkeley, California, December 15.

34) City of Berkeley, 2025, Berkeley Municipal Code, A Codification of the General Ordinances of the City of Berkeley, California, Title 13, Chapter 13.40, Community Noise, April 15. (Local noise ordinance)

35) Code of Federal Regulations (CFR) Title 29 Occupational Safety and Health Act (1910.120 et seq.) (Hazardous Waste Operations and Emergency Response)

36) CFR Title 40 (42 USC 7401-7642, 50 – 69) (Clean Air Act)

37) CFR Title 40 Part 122 §402 [Clean Water Act: The National Pollutant Discharge Elimination System (NPDES)]

38) CFR Title 40 Part 260 to 299, 42 USC 7401-7642 (Resource Conservation and Recovery Act)

39) CFR Title 40 Part 261 (Identification and Listing of Hazardous Waste)

40) CFR Title 40, Part 261, Subpart C, Section 261.24 (Characteristics of Hazardous Waste)

41) CFR Title 40 Part 262 (Standards Applicable to Generators of Hazardous Waste)

42) CFR Title 40 Part 263 “Consolidated Checklist C4: Standard Applicable to Transporters of Hazardous Waste”

43) CFR Title 40 Part 263 (Standards Applicable to Transporters of Hazardous Waste)

44) Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.

45) Environmental Protection Agency (USEPA), 2024, Regional Screening Level (RSL) Resident Ambient Air Table (TR=1E-06, HQ=1), May.

46) USEPA, 2020, National Functional Guidelines for Organic Superfund Methods Data Review (EPA 540-R-20-005), November.

47) USEPA, 2020, National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA 542-R-20-006), November.

48) USEPA, 2024, Regional Screening Levels, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, November.

49) GSI, 2022, Santa Fe Right-of-Way Phase II Environmental Site Assessment – Report of Findings, Historic Santa Fe Right-of-Way, Berkeley, California, November 22.

50) GSI, 2023, Additional Soil Sampling Work Plan, Santa Fe Trackbed to Park, Berkeley, California, December 7.

51) GSI, 2024, Addendum to the Additional Soil Sampling Work Plan. Santa Fe Trackbed to Park, Berkeley, California, April 9.

52) GSI, 2024, Final Additional Soil Investigation Report. Santa Fe Trackbed to Park, Berkeley, California, September 9.

53) GSI, 2025, Remedial Action Work Plan, Santa Fe Trackbed to Park, Berkeley, California, June 17.

54) San Francisco Bay Regional Water Quality Control Board (Water Board), 2019, Environmental Screening Levels, Summary Tables, January (Rev. 2).

55) DTSC, 2025, Revised Draft Removal Action Workplan, Santa Fe Trackbed to Park Property, Berkeley, Alameda County, California, July 2025, August 13.

56) DTSC, 2025, Responsiveness Summary for Public Comments Received on the Draft Removal Action Workplan (RAW), Santa Fe Trackbed to Park, Berkeley, Alameda County, CA, October 28.

57) GSI, 2025, Final Removal Action Workplan, Santa Fe Trackbed to Park, Berkeley, California, October 29.

58) DTSC, 2025, Final Removal Action Workplan, Santa Fe Trackbed to Park Property, Berkeley, Alameda County, California, October 2025, October 31.

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX G

Air Quality Analysis

APPENDIX G
TECHNICAL MEMORANDUM

TO: Stacey Rutherford
City of Berkeley, Department of Parks, Recreation, and Waterfront
1947 Center Street, 5th Floor
Berkeley, CA 94704
SRutherford@berkeleyca.gov

FROM: Tiam Novin, Environmental Scientist
Jennifer P. Duffield, PE, Principal Engineer

COPY: Daniel Brannick, Department of Toxic Substances Control
Yang Dong, Department of Toxic Substances Control
Candace Hill, Department of Toxic Substances Control

SITE: Santa Fe Trackbed to Park Conversion Project
Four Non-Contiguous Parcels

RE: Air Quality Analysis of Site Remediation Activities

INTRODUCTION

On behalf of the City of Berkeley Department of Parks, Recreation, and Waterfront (the City), GSI Environmental Inc. (GSI) performed an analysis to assess the air quality and greenhouse gas (GHG) emissions associated with the remediation of the Site, which consists of four vacant non-contiguous parcels identified by Alameda County Assessor's Office Assessor Parcel Numbers 54-1790-28, 54-1794-28, 54-1793-27, and 54-1735-20. The four parcels encompass approximately 1.32-acres. The Site is currently vacant land that was historically the Santa Fe Railroad Right-of-Way (ROW). The Site is located within a residential neighborhood and adjacent to residential properties. Previous assessments of the Site indicated elevated concentrations of arsenic, lead, mercury, and polycyclic aromatic hydrocarbons (PAHs). The City has entered into a voluntary cleanup agreement with the California Department of Toxic Substances Control (DTSC) to oversee environmental characterization and remediation of the Site. The City plans to develop the Site into a community asset, which will include a community garden, dog park, children's play area, and teaching garden.

This air quality assessment estimates criteria pollutant emissions associated with the remedial actions of the Site as described in the Remedial Action Work Plan (RAW), prepared by GSI, dated April 7, 2025.[1] GHG emissions were not evaluated as Bay Area Air Quality Management District (BAAQMD) significance thresholds are not applicable to the remediation activities described in the RAW, as described in the Air Quality Analysis section below.2

GSI estimated criteria air pollutant emissions using the California Emissions Estimator Model (CalEEMod) Version 2022.1. Remediation activities included in the air quality emissions

[1] GSI, 2025, Remedial Action Workplan, Santa Fe Trackbed to Park, Berkeley, California, April 7.

[2] Bay Area Air Quality Management District, 2022, California Environmental Quality Act, Air Quality Guidelines.

estimation include demolition of a small detached garage and shed, excavation of impacted soils and backfill with clean, imported soil. Emissions associated with grading and construction of the Site will be addressed as part of the California Environmental Quality Act (CEQA) process for the redevelopment of the Site.

Project Description

The Site encompasses four non-contiguous parcels that were historically used as a railroad. The Site extends north-to-south between Blake Street and Ward Street and east-to-west between Sacramento Street and Mabel Street and includes four parcels, shown on Figure G-1, attached:

- Parcel 1 – located between Blake and Parker Streets (APN: 54-1790-28)
- Parcel 2 – located between Parker and Carleton Streets (APN: 54-1794-28)
- Parcel 3 – located between Carleton and Derby Streets (APN: 54-1793-27)
- Parcel 4 – located between Derby and Ward Streets (APN: 54-1735-20)

Remediation activities evaluated in this assessment include excavation of soil and backfilling with clean, imported soil at each parcel. Pre-excavation demolition activities include removal of perimeter fences, at all parcels, a concrete driveway at Parcel 1, and a small detached garage and shed at Parcel 2.

AIR QUALITY ANALYSIS

GSI used the California Emissions Estimator Model (CalEEMod) Version 2022.1 to estimate emissions associated with implementation of the RAW. The input assumptions and model output are described below.

CalEEMod Input Assumptions

The contractor to perform the work has not yet been selected. Therefore, GSI used default parameters, information from the City, and knowledge from prior experience to select input parameters for the model. The following inputs/assumptions were made in CalEEMod:

1. Land use for the Site is a recreational city park, totaling 1.32 acres.
2. There will be two construction phases:
    a. Demolition, which includes the removal of a concrete driveway, a small detached garage, a small shed and perimeter fencing.
    b. Site preparation, which includes Site preparation and excavation of contaminated soil and backfilling excavation areas with clean, imported soil.
3. It is estimated that remedial construction activities will take approximately 41 days to complete. Work is anticipated to being in September 2025 and end in November 2025.
4. Default off-road construction equipment were included in each phase of construction, including additional construction equipment in the demolition phase to account for dismantling fencing, if necessary.
    a. The off-road construction equipment are estimated to operate on Site for 9.5 hours per day.
5. An estimated 4,900 cubic yards of contaminated soil will be excavated and the same amount of clean, imported soil will be backfilled in those locations.

6. When handling materials for import and export, watering of exposed areas will be used twice a day to reduce fugitive dust.
7. Imported and exported materials will not be phased, meaning one truck arrives empty and departs full of export material and a different truck arrives full of import material and departs empty, for a total of two round trips.
8. An estimated 235 square feet of small structures (a detached garage and a shed) will be demolished at the Site. During demolition activities, water will be used at least twice per day for fugitive dust suppression.
9. The default number of truck trips and vehicle miles traveled for each phase of construction was used in the model except for demolition hauling trucks, vendor trucks, and onsite trucks for each phase.
    a. One hauling truck is assumed to be used per day during the demolition phase.
    b. Two water trucks (vendor trucks) are assumed to be used on Site per day.
    c. Two onsite trucks assumed to be used per day and conservatively traverse the total length of each parcel.
10. The following emissions control strategies are assumed to be implemented for on-road fugitive dust:
    a. Watering unpaved areas twice daily.
    b. Limiting vehicle speeds on unpaved areas to 25 mph.
    c. Sweep paved roads once per month.
11. One construction emission reduction strategy is included in the model – limiting heavy-duty diesel vehicle idling.
12. Vegetation removal was not included in the emissions estimate as this primarily affects GHG emissions, which are not considered in this evaluation as discussed in the Air Quality Analysis, below.
13. Planting of new trees were not included in the emissions model as this activity is not part of remediation and will be considered as part of the CEQA process for the redevelopment of the Site.

Criteria Air Pollutants Significance Thresholds and Emissions Output

CalEEMod emission results are compared to BAAQMD significance thresholds for criteria pollutants, where established.[2] A copy of the CalEEMod detailed model report is included in Attachment G-1. Planned remediation activities as part of this analysis would generate short-term emissions of criteria pollutants and greenhouse gases. As shown in the table below, the emissions from the remedial activities are significantly lower than BAAQMD thresholds, which indicates the proposed project will not significantly affect the environment. As such, the model results quantifiably supports an exemption from CEQA pursuant to Section 15061(b)(3).

Project Criteria Pollutant Emissions Table

Maximum Daily Criteria Air Pollutant Emissions (pounds per day)				
	ROG	NO_x	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Project Emissions	2	20	0.8	0.7
BAAQMD Thresholds	54	54	82	54
BAAQMD Thresholds Exceeded?	**No**	**No**	**No**	**No**

Abbreviations:
ROG = Reactive Organic Gases
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter 10 microns in diameter or less
$PM_{2.5}$ = Particulate Matter 2.5 microns in diameter or less

Fugitive Dust

In lieu of establishing a threshold for fugitive dust, the BAAQMD has established best management practices (BMPs) to control fugitive dust emissions.[2] As the project will implement all of the applicable basic BMPs outlined in the BAAQMD CEQA Air Quality Guidelines, Chapter 5, Section 5.2.2, the project will have a less-than significant criteria air pollutant impact related to construction-related fugitive dust emissions. These basic BMPs are outlined below:

BMP ID	Basic Best Management Practice
B-1	All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
B-2	All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
B-3	All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
B-4	All vehicle speeds on unpaved roads shall be limited to 15 mph.
B-5	All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
B-6	All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
B-7	All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
B-8	Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
B-9	Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

Greenhouse Gases

BAAQMD has established thresholds of significance in Chapter 3, Table 3-2 of its CEQA Air Quality Guidelines that specify minimum project design elements for project GHG emissions to be considered insignificant. The design elements focus on buildings and transportation (reduction of vehicle miles traveled for residential, office and retail projects). Since the focus of this air quality analysis is the remediation portion of a planned city park and does not include the construction of buildings or long-term operations of residential, office, retail facilities, the climate impacts thresholds of significance are not applicable to this project. Therefore, GHG emissions are not further evaluated.

CONCLUSIONS

Results of the emissions modeling using CalEEMod indicate that estimated criteria pollutant emissions resulting from the proposed demolition, remediation, and backfilling activities proposed in the RAW will be significantly lower than BAAQMD thresholds. Additionally, fugitive dust emissions will be controlled using the basic BMPs outlined in the BAAQMD's CEQA Air Quality Guidelines.[2] Therefore, implementation of the RAW will have no significant impact on air quality, which supports an exemption from CEQA pursuant to Section 15061(b)(3).

Attachments: Figure G-1 – Site Overview
Attachment G-1 – CalEEMod Detailed Model Report

GSI ENVIRONMENTAL

GSI job No.	6272	Drawn By:	AV
Issued:	5-Oct-2023	Chk'd By:	TRK
		Appv'd By:	JPD
Map ID:	SFROW_SiteOverview		FIGURE G-1

SITE OVERVIEW

Santa Fe Trackbed to Park
Berkeley, California

Santa Fe Trackbed to Park Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Santa Fe Trackbed to Park
Construction Start Date	9/15/2025
Lead Agency	DTSC
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	17.0
Location	37.85923184091673, -122.28222539174433
County	Alameda
City	Berkeley
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1531
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
City Park	1.32	Acre	1.32	0.00	57,499	57,499	—	Four parcel remediation

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.29	1.80	19.5	17.4	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,800	5,800	0.27	0.52	7.13	5,968
Mit.	2.29	1.80	19.5	17.4	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,800	5,800	0.27	0.52	7.13	5,968
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.28	1.79	19.7	17.3	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,797	5,797	0.27	0.52	0.19	5,958
Mit.	2.28	1.79	19.7	17.3	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,797	5,797	0.27	0.52	0.19	5,958
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	0.20	2.06	1.88	< 0.005	0.08	2.79	2.87	0.08	0.39	0.47	—	551	551	0.03	0.04	0.26	565
Mit.	0.25	0.20	2.06	1.88	< 0.005	0.08	2.79	2.87	0.08	0.39	0.47	—	551	551	0.03	0.04	0.26	565
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04	0.04	0.38	0.34	< 0.005	0.02	0.51	0.52	0.01	0.07	0.09	—	91.3	91.3	< 0.005	0.01	0.04	93.6
Mit.	0.04	0.04	0.38	0.34	< 0.005	0.02	0.51	0.52	0.01	0.07	0.09	—	91.3	91.3	< 0.005	0.01	0.04	93.6
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	54.0	54.0	—	—	82.0	—	82.0	54.0	—	54.0	—	—	—	—	—	—	—
Unmit.	Yes	No	No	—	—	No	—	No	No	—	No	—	—	—	—	—	—	—
Mit.	Yes	No	No	—	—	No	—	No	No	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	54.0	54.0	—	—	82.0	—	82.0	54.0	—	54.0	—	—	—	—	—	—	—
Unmit.	Yes	No	No	—	—	No	—	No	No	—	No	—	—	—	—	—	—	—
Mit.	Yes	No	No	—	—	No	—	No	No	—	No	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.29	1.80	19.5	17.4	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,800	5,800	0.27	0.52	7.13	5,968
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.28	1.79	19.7	17.3	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,797	5,797	0.27	0.52	0.19	5,958

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.25	0.20	2.06	1.88	< 0.005	0.08	2.79	2.87	0.08	0.39	0.47	—	551	551	0.03	0.04	0.26	565
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.04	0.04	0.38	0.34	< 0.005	0.02	0.51	0.52	0.01	0.07	0.09	—	91.3	91.3	< 0.005	0.01	0.04	93.6

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.29	1.80	19.5	17.4	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,800	5,800	0.27	0.52	7.13	5,968
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.28	1.79	19.7	17.3	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,797	5,797	0.27	0.52	0.19	5,958
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.25	0.20	2.06	1.88	< 0.005	0.08	2.79	2.87	0.08	0.39	0.47	—	551	551	0.03	0.04	0.26	565
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.04	0.04	0.38	0.34	< 0.005	0.02	0.51	0.52	0.01	0.07	0.09	—	91.3	91.3	< 0.005	0.01	0.04	93.6

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.05	1.72	16.2	16.1	0.03	0.71	—	0.71	0.65	—	0.65	—	2,679	2,679	0.11	0.02	—	2,688
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.25	9.25	< 0.005	< 0.005	0.01	9.78
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.49	0.49	< 0.005	0.02	—	0.02	0.02	—	0.02	—	80.7	80.7	< 0.005	< 0.005	—	81.0
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.4
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.03	0.02	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	86.6	86.6	< 0.005	< 0.005	0.34	87.9
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.29	112
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.76	0.76	< 0.005	0.08	0.08	—	140	140	0.01	0.02	0.31	148
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.44	2.44	< 0.005	< 0.005	< 0.005	2.47
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.35	0.35	< 0.005	0.03	0.03	—	3.21	3.21	< 0.005	< 0.005	< 0.005	3.36
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	4.23	4.23	< 0.005	< 0.005	< 0.005	4.44
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.41
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.56
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.70	0.70	< 0.005	< 0.005	< 0.005	0.74

3.2. Demolition (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.05	1.72	16.2	16.1	0.03	0.71	—	0.71	0.65	—	0.65	—	2,679	2,679	0.11	0.02	—	2,688
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.25	9.25	< 0.005	< 0.005	0.01	9.78

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.49	0.49	< 0.005	0.02	—	0.02	0.02	—	0.02	—	80.7	80.7	< 0.005	< 0.005	—	81.0
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.4
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	86.6	86.6	< 0.005	< 0.005	0.34	87.9
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.29	112
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.76	0.76	< 0.005	0.08	0.08	—	140	140	0.01	0.02	0.31	148
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.44	2.44	< 0.005	< 0.005	< 0.005	2.47

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.35	0.35	< 0.005	0.03	0.03	—	3.21	3.21	< 0.005	< 0.005	< 0.005	3.36
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	4.23	4.23	< 0.005	< 0.005	< 0.005	4.44
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.41
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.56
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.70	0.70	< 0.005	< 0.005	< 0.005	0.74

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.02	1.70	15.7	15.5	0.02	0.73	—	0.73	0.67	—	0.67	—	2,656	2,656	0.11	0.02	—	2,665
Dust From Material Movement	—	—	—	—	—	—	3.29	3.29	—	1.59	1.59	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.25	9.25	< 0.005	< 0.005	0.01	9.78
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.02	1.70	15.7	15.5	0.02	0.73	—	0.73	0.67	—	0.67	—	2,656	2,656	0.11	0.02	—	2,665

Dust From Material Movement	—	—	—	—	—	—	3.29	3.29	—	1.59	1.59	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.40	9.40	< 0.005	< 0.005	< 0.005	9.92
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.25	1.23	< 0.005	0.06	—	0.06	0.05	—	0.05	—	211	211	0.01	< 0.005	—	212
Dust From Material Movement	—	—	—	—	—	—	0.26	0.26	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.74	0.74	< 0.005	< 0.005	< 0.005	0.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.23	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.9	34.9	< 0.005	< 0.005	—	35.1
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.13
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	64.9	64.9	< 0.005	< 0.005	0.26	66.0
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.29	112
Hauling	0.23	0.07	3.58	1.43	0.02	0.06	16.0	16.1	0.06	1.73	1.78	—	2,963	2,963	0.16	0.48	6.58	3,116

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.2	60.2	< 0.005	< 0.005	0.01	61.1
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.01	111
Hauling	0.22	0.06	3.78	1.45	0.02	0.06	16.0	16.1	0.06	1.73	1.78	—	2,964	2,964	0.16	0.48	0.17	3,111
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.82	4.82	< 0.005	< 0.005	0.01	4.89
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.92	0.92	< 0.005	0.09	0.09	—	8.47	8.47	< 0.005	< 0.005	0.01	8.85
Hauling	0.02	0.01	0.29	0.11	< 0.005	< 0.005	1.21	1.22	< 0.005	0.13	0.14	—	235	235	0.01	0.04	0.23	247
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.81
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	1.40	1.40	< 0.005	< 0.005	< 0.005	1.47
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.22	0.22	< 0.005	0.02	0.02	—	39.0	39.0	< 0.005	0.01	0.04	40.9

3.4. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.02	1.70	15.7	15.5	0.02	0.73	—	0.73	0.67	—	0.67	—	2,656	2,656	0.11	0.02	—	2,665
Dust From Material Movement	—	—	—	—	—	—	3.29	3.29	—	1.59	1.59	—	—	—	—	—	—	—

Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.25	9.25	< 0.005	< 0.005	0.01	9.78
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.02	1.70	15.7	15.5	0.02	0.73	—	0.73	0.67	—	0.67	—	2,656	2,656	0.11	0.02	—	2,665
Dust From Material Movement	—	—	—	—	—	—	3.29	3.29	—	1.59	1.59	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.40	9.40	< 0.005	< 0.005	< 0.005	9.92
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.25	1.23	< 0.005	0.06	—	0.06	0.05	—	0.05	—	211	211	0.01	< 0.005	—	212
Dust From Material Movement	—	—	—	—	—	—	0.26	0.26	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.74	0.74	< 0.005	< 0.005	< 0.005	0.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.23	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.9	34.9	< 0.005	< 0.005	—	35.1
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.13

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	64.9	64.9	< 0.005	< 0.005	0.26	66.0
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.29	112
Hauling	0.23	0.07	3.58	1.43	0.02	0.06	16.0	16.1	0.06	1.73	1.78	—	2,963	2,963	0.16	0.48	6.58	3,116
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.2	60.2	< 0.005	< 0.005	0.01	61.1
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.01	111
Hauling	0.22	0.06	3.78	1.45	0.02	0.06	16.0	16.1	0.06	1.73	1.78	—	2,964	2,964	0.16	0.48	0.17	3,111
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.82	4.82	< 0.005	< 0.005	0.01	4.89
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.92	0.92	< 0.005	0.09	0.09	—	8.47	8.47	< 0.005	< 0.005	0.01	8.85
Hauling	0.02	0.01	0.29	0.11	< 0.005	< 0.005	1.21	1.22	< 0.005	0.13	0.14	—	235	235	0.01	0.04	0.23	247
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.81
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	1.40	1.40	< 0.005	< 0.005	< 0.005	1.47
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.22	0.22	< 0.005	0.02	0.02	—	39.0	39.0	< 0.005	0.01	0.04	40.9

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	9/15/2025	9/29/2025	5.00	11.0	Demolition of various small structures, perimeter fencing, and trees
Site Preparation	Site Preparation	9/30/2025	11/7/2025	5.00	29.0	Prepare and excavate soils, then backfill excavations with clean, imported soil

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	9.50	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	9.50	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	9.50	84.0	0.37
Demolition	Other Construction Equipment	Diesel	Average	1.00	9.50	82.0	0.45
Site Preparation	Graders	Diesel	Average	1.00	9.50	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	9.50	367	0.40

Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	9.50	84.0	0.37

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	9.50	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	9.50	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	9.50	84.0	0.37
Demolition	Other Construction Equipment	Diesel	Average	1.00	9.50	82.0	0.45
Site Preparation	Graders	Diesel	Average	1.00	9.50	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	9.50	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	9.50	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	4.00	8.40	HHDT,MHDT
Demolition	Hauling	2.00	20.0	HHDT
Demolition	Onsite truck	4.00	0.18	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	8.40	HHDT,MHDT
Site Preparation	Hauling	42.2	20.0	HHDT

Site Preparation	Onsite truck	4.00	0.18	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	4.00	8.40	HHDT,MHDT
Demolition	Hauling	2.00	20.0	HHDT
Demolition	Onsite truck	4.00	0.18	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	8.40	HHDT,MHDT
Site Preparation	Hauling	42.2	20.0	HHDT
Site Preparation	Onsite truck	4.00	0.18	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	235	—
Site Preparation	4,900	4,900	22.6	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
City Park	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit

Temperature and Extreme Heat	7.10	annual days of extreme heat
Extreme Precipitation	7.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	2	2	2
Sea Level Rise	1	2	1	3
Wildfire	2	2	2	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	3	3	3

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	2	2	2
Sea Level Rise	1	2	1	3
Wildfire	2	2	2	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	3	3	3

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.12
AQ-PM	39.9
AQ-DPM	78.9
Drinking Water	4.21
Lead Risk Housing	80.7
Pesticides	0.00
Toxic Releases	58.3

Traffic	52.3
Effect Indicators	—
CleanUp Sites	75.3
Groundwater	92.2
Haz Waste Facilities/Generators	95.8
Impaired Water Bodies	83.0
Solid Waste	0.00
Sensitive Population	—
Asthma	87.4
Cardio-vascular	59.9
Low Birth Weights	5.03
Socioeconomic Factor Indicators	—
Education	24.1
Housing	75.7
Linguistic	25.6
Poverty	42.8
Unemployment	81.7

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	57.43616066
Employed	45.74618247
Median HI	64.04465546
Education	—
Bachelor's or higher	75.77312973
High school enrollment	100

Preschool enrollment	72.75760298
Transportation	—
Auto Access	6.159373797
Active commuting	97.15128962
Social	—
2-parent households	49.08250994
Voting	74.15629411
Neighborhood	—
Alcohol availability	20.08212498
Park access	81.35506224
Retail density	66.26459643
Supermarket access	70.30668549
Tree canopy	44.7324522
Housing	—
Homeownership	44.15501091
Housing habitability	63.59553445
Low-inc homeowner severe housing cost burden	39.61247273
Low-inc renter severe housing cost burden	62.04285898
Uncrowded housing	68.66418581
Health Outcomes	—
Insured adults	67.2783267
Arthritis	14.1
Asthma ER Admissions	8.4
High Blood Pressure	18.2
Cancer (excluding skin)	22.7
Asthma	27.9
Coronary Heart Disease	34.0
Chronic Obstructive Pulmonary Disease	42.5

Diagnosed Diabetes	31.9
Life Expectancy at Birth	37.4
Cognitively Disabled	44.8
Physically Disabled	45.1
Heart Attack ER Admissions	73.5
Mental Health Not Good	57.3
Chronic Kidney Disease	27.1
Obesity	43.5
Pedestrian Injuries	81.3
Physical Health Not Good	53.6
Stroke	15.1
Health Risk Behaviors	—
Binge Drinking	68.3
Current Smoker	61.3
No Leisure Time for Physical Activity	60.4
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	62.5
Elderly	47.3
English Speaking	68.8
Foreign-born	23.9
Outdoor Workers	40.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	32.3
Traffic Density	35.9
Traffic Access	87.4
Other Indices	—

Hardship	39.3
Other Decision Support	—
2016 Voting	58.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	62.0
Healthy Places Index Score for Project Location (b)	75.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Proposed site construction includes demolition and site preparation (remediation of soil - excavation and backfill with clean, imported soil).
Construction: Off-Road Equipment	Included one "other construction equipment" to demolition for the dismantling of fencing in the four parcel boundaries, where necessary.
Construction: Trips and VMT	Vendor trips assume two water trucks per day. Assumed two onsite trucks on site per day and conservatively traversing the total length of each construction area.

Construction: On-Road Fugitive Dust	Mean vehicle speed changed to 15 mph to conform to BAAQMD Basic Best Management Practices for Construction-Related Fugitive Dust Emissions.
Construction: Dust From Material Movement	Excavated impacted soils will be removed and clean, imported soil will be used to backfill these areas.

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX H

DTSC Responsiveness Summary

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Katherine M. Butler, MPH, Director
8800 Cal Center Drive
Sacramento, California 95826-3200
https://dtsc.ca.gov/

Gavin Newsom
Governor

October 30, 2025

RESPONSIVENESS SUMMARY FOR PUBLIC COMMENTS RECEIVED ON THE DRAFT REMOVAL ACTION WORKPLAN (RAW), SANTA FE TRACKBED TO PARK, BERKELEY, ALAMEDA COUNTY, CALIFORNIA

Dear Commenters:

The Department of Toxic Substances Control (DTSC) has prepared this Responsiveness Summary to address public comments received on the draft Removal Action Workplan (RAW) for the Santa Fe Trackbed to Park Site, located along Acton Street between Blake Street and Ward Street in Berkeley, California. The site is contaminated with lead, arsenic, and pesticides.

DTSC held a public comment period beginning August 18, 2025, and ending September 16, 2025. The purpose of the comment period was to provide information on the draft RAW and to solicit community input on its adequacy. Notices of the comment period were posted in the DTSC Sacramento Regional Office and on DTSC EnviroStor, Tarea Hall Pittman South Library, Vision Hispana, and the Berkeley Voice. Community Updates were distributed in August 2025. Copies of these materials are included in this Responsiveness Summary. The draft RAW evaluated three cleanup alternatives against established criteria and recommended excavating contaminated soil and transporting it to a permitted facility.

A total of 81 letters, phone calls and/or emails commenting on the proposal were received. The list of comments and their corresponding information is included in Table 1. DTSC numbered each of the comments and grouped similar comments together by topic. The designation “1-1” means comment letter number 1, comment number 1 and so forth. The comments that are general in nature or have overarching applicability are addressed under the most applicable subject.

The copies of the comments received are included in this Responsiveness Summary. The purpose of this document is to present a written response by DTSC to these comments. The Responsiveness Summary will be included in the final RAW.

This Responsiveness Summary is organized as follows:

1. Responses to comments.
2. Copies of the Community Updates and Public Notices.
3. Copies of comments received.

The complete document can be reviewed and downloaded from the DTSC database EnviroStor link below:

https://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60003466&doc_id=60604553

A copy of the final RAW and other site-related documents is available for review at: https://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60003466

Physical copies may be reviewed at:

DTSC Sacramento Regional Office
8800 Cal Center Drive
Sacramento, California 95826
(916) 255-3758 (Appointment required, Monday – Friday, 8:00 AM – 5:00 PM)

Based on the comments and responses to comments, Transportation Truck Route Figures 9A and 9B should be revised to avoid Dwight, Blake, Parker, and Carleton Streets, as they are subject to a 3-ton restriction between Sacramento Street and San Pablo Avenue.

If you have any questions or comments, please contact Yang Dong at via email at Yang.Dong@dtsc.ca.gov or (916) 255-6607.

Sincerely,

Duane White

Duane White, P.E., Unit Chief
Site Mitigation and Restoration Program
Department of Toxic Substances Control
8800 Cal Center Office
Sacramento, California 95826

Attachment 1: Response to Comments
Attachment 2: Table 1, Commenters List
Attachment 3: Community Updates and Public Notices
Attachment 4: Copies of Comments

ATTACHMENT 1- RESPONSE TO COMMENTS

1. The schedule of removal work

Comments: 1-1, 8, 40, 42, 43-3, 42-1, 72-3

Comments Summary 1: The above comments are inquiring about the schedule for the project and community role.

Response Summary 1: After the close of the public comment period, DTSC will issue a formal approval letter to the City of Berkeley for the RAW. The City will then begin the contractor bidding process. Fieldwork is anticipated to start spring / summer 2026. A field work notice will be mailed to the community at least one week before work begins. The field work notice will also be posted in the DTSC database https://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60003466 The best way to support the project is by staying engaged, reviewing City updates, checking the link above periodically, and sharing information with neighbors.

2. Dust Control

Comments: 2, 11, 16, 17, 28, 31-1, 32-1, 43-2, 49-2, 58-1, 78-2

Comments Summary 2: Community members raised concerns about dust control, monitoring, and the potential use of toxic foams or plastics and excavating soil after raining

Comments Summary 2: Section 5.3.5 of the RAW includes a Community Air Monitoring Plan. Dust suppression measures include: 1) Regular water spraying to prevent airborne dust. 2) Tarps or plastic sheeting over soil stockpiles. 3)Temporary work stoppages during high winds. 4) Real-time dust monitoring around the site.

Trucks transporting soil are required to be covered and cleaned before leaving the site to prevent spreading contaminated material. No toxic spray foams or chemicals will be used in this project. The temporary plastic sheeting and tarps are only there to help control dust and keep soil contained during the fieldwork. Once the work is finished, all of that material will be removed. DTSC oversight staff will monitor dust control and transport practices to make sure they follow health and safety standards. Monitors will be moved throughout the cleanup project based on the wind direction. Fieldwork starts

in the spring and ends in the Fall to avoid the raining season. If it rains, the project might be delayed until the soil is dried.

After cleanup, the excavated areas will be backfilled with clean soil and compacted, so that the land is safe and ready for future use. The materials are not being stored on site permanently and will not pose a long-term risk.

Specific Comment 1 (Comment 11): "I am concerned about the plan for excavation and minimal dust control. I would prefer enhanced dust control such as wrapping the site in plastic. Please explain why this was not chosen."

Specific Response 1: Completely wrapping the site in plastic is not practical for a large outdoor area like the Santa Fe Trackbed Site. Plastic sheeting can tear in wind and weather, and covering an active excavation area would make it unsafe for workers and difficult to remove the contaminated soil.

Specific Comment 2 (Comment 16): "I don't understand why dust monitoring stations will be set up to north, east, and west but not to the south. Did you forget about us?"

Specific Response2: Dust monitors are placed based on the direction the wind usually blows. We usually have one monitor on the side where the wind comes from and two on the sides where the wind blows toward. At this site, the wind mainly carries dust toward the north, east, and west, so those are the best spots to track potential impacts. If winds change during the project, we will review the monitoring setup and adjust as needed to make sure the community is protected. Excavation will cease if dust monitoring results are above thresholds safe for the community or if the wind velocity exceeds a certain speed.

Specific Comment 3 (Comment 28): "Please do not begin this project until you can promptly remove all soil. Staging this danger will cause more stress + possible disease. Use of "spray foam" may contain PFAS. Do not use any foam containing PFAS or other chemicals — also toxicants. Thank you for a speedy completion, use of tarps + water for maximum control. There are many children + vulnerable elders in this area. Please also minimize use of plastics. I look forward to these beautiful parks."

Specific Response 3: The City of Berkeley will not start the development project until the cleanup project is completed. The soil will be safely removed from the site without long staging periods. DTSC does not use spray foams that contain PFAS or other toxic chemicals. For dust control, water sprays and tarps will be used as the primary

measures. These methods are effective and safe, and they help protect neighbors from exposure. We will also work to limit the use of plastics wherever possible.

We recognize that many children and older residents live in the area, and protecting community health is our top priority. Our goal is to complete the cleanup quickly and safely so the site can be restored and transformed into beautiful parks for the community.

3. Future Planning

Comments: 1-2, 13, 25, 30, 32, 34, 38, 42-2, 46, 49-1, 51-1, 51-2, 57, 58-2, 72-3, 77

Comments Summary 3: Community members raised concerns about the planned redevelopment of the site.

Response Summary 3: The current public comment period is focused only on the cleanup activities, which will take place before any redevelopment begins. The redevelopment itself is not under DTSC's oversight. For questions or concerns about redevelopment plans, please contact the City of Berkeley Department of Parks, Recreation, and Waterfront. You can reach Stacey Rutherford at srutherford@berkeleyca.gov.

4. The Proposed Remedy

Comments: 39, 43-1, 45, 47, 49, 72-1, 72-2

Comments Summary 4: These comments are inquiring if the depth of 6 feet is enough for the cleanup and about the cleanup standards for residential use.
Response Summary 4: The cleanup depth depends on how deep contamination was found during the site investigation. A gridded soil sampling strategy was used across the project area. Most contamination was detected at 2–3 feet, but in some areas, it was found as deep as 5–5.5 feet. Based on the investigation results, the city of Berkeley will excavate the site to ensure no contamination remains. The depths of excavation of each grid are shown in Figures 3a-6a. To ensure the site is safe for planned uses such as a community garden, dog park, and children's play area, contaminated soil must be removed down to the depth where contamination is present. The City is over excavating by 0.5 – 1 foot to ensure contamination is removed. This approach provides the highest level of protection for sensitive groups, including children and seniors.

Although much of the contamination is near the surface, leaving deeper contaminated soil in place could pose risks in the future if digging or landscaping occurs. Removing soil to the full depth of contamination ensures that future residents and users of the site remain protected. While disposal does relocate the soil, it is managed under strict regulations to ensure safe handling and treatment.

Specific Comment 4 (Comment 39): "Your reason for the cleanup is that levels of contaminants are higher than allowed for residential use. The solution is don't use it for residential use. The proposed cleanup is worse than the problem. Don't waste money on this project; just leave it alone. The results of your environmental evaluation should show that the problem is not severe enough to warrant the cleanup measures proposed."

Specific Response 4: DTSC is required by law to protect human health and the environment. Our environmental evaluation shows that the levels of arsenic, lead, and mercury at the Santa Fe site are above the residential screening levels established in the DTSC Human Health Risk Assessment (HERO) guidance (https://dtsc.ca.gov/wp-content/uploads/sites/31/2025/04/HHRA-Note-3-Revised-April-2025.pdf). Sites that exceed these screening levels are a potential unacceptable health risk if people are exposed to the soil.

Because the City will redevelop the site into public park space that will be used by children, families, and the community, DTSC must require that contaminated soil is cleaned up to residential standards. This ensures the site is safe for unrestricted public use, consistent with regulatory requirements and DTSC's mission to protect sensitive populations.

The cleanup actions are designed to permanently remove or reduce exposure to contaminants, not to add new risks. Temporary controls (like plastic sheeting) will be used only during excavation and will be removed once clean soil is backfilled and compacted.

Specific Comment 5 (Comment 45): "You must be new... Save your money for something else. The City of Berkeley will never achieve this vision. The diesel spray used by SFRR to abate weeds for 70 years is below years of new dirt and tons of wood mulch. Dogs and people don't disturb deep enough to pose a health risk. The city will squander your efforts meticulous as they may prove to be, for YEARS afterward. Please, do not encourage CoB to add anything to their plate."

Specific Response 5: The cleanup will remove contaminated soil so the property meets residential standards, which are the most protective level. This means the land will be safe for all future uses, not just as a garden or park. Even if the City later decides to use the property for another purpose, the cleanup standard will still apply, ensuring the site remains protective of health.

If contamination were left in place, long-term management and yearly costs would be required. Given the proposed future development use, the best approach is to clean it up to the unrestricted use level now.

5. Transportation Plan

Comments: 5, 43-3, 78-1, 81

Comments Summary 5: The comments are inquiring about where the toxic soil is going and request traffic be routed to major streets as directly as possible.

Response Summary 5: During the cleanup, the soil will be tested and categorized as hazardous or non-hazardous. Hazardous soil will be transported by licensed haulers to

approved Class I or II disposal facilities, following strict DTSC and EPA rules. There are two main types of hazardous soil and one non-hazardous:

(1) RCRA hazardous waste – this means it meets the federal EPA definition of hazardous waste under the Resource Conservation and Recovery Act (RCRA).

(2) Non-RCRA (California) hazardous waste – this means it does not meet the federal definition, but still qualifies as hazardous under California's stricter state rules.

(3) Non-hazardous waste – this means contaminated soil not classified as hazardous under EPA or California laws.

Hazardous soil in these two categories will likely be transported to one of the following Class I facilities, Waste Management Inc. – Kettleman or Clean Harbors Buttonwillow, LLC. Non-hazardous soil will be taken to licensed Class II landfills such as Vasco Road or Altamont. All shipments will be tracked with manifests, and the final disposal locations will be documented in a completion report. (As referred in Section 6.2 in RAW)

As described in the Removal Action Workplan Section 6.0, truck traffic associated with the cleanup will be routed along designated major streets to minimize impacts on residential neighborhoods. Haul routes have been selected in coordination with the City of Berkeley to direct trucks to major roads and away from local side streets whenever feasible. Contractors will also be required to follow all traffic safety requirements, including posted speed limits and designated haul routes, and to use covered loads to prevent soil or dust release during transport. (please refer to RAW section 6.4, Figures 9A and 9B).

Specific Comment 6 (Comment 81): I'm concerned about the truck traffic through the neighborhood. I'm concerned that the trucks will further erode the condition of the roads. Trucks over a certain weight aren't allowed on Carleton Street, but because it's one of the few through streets, I'm afraid the trucks will use Carleton anyway. I'm also concerned about pedestrian safety because of the increased truck traffic. I'm hoping when this project is over, the sidewalk will be added to Acton Street between Carleton and Parker since there currently isn't one. I'm super excited about this project and fully support it. Long overdue**.**

Specific Response 6: The trucks transporting the soil will avoid Carleton as much as possible. The project site is surrounded by streets with restrictions as Dwight, Blake, Parker, and Carleton are all subject to a 3-ton restriction between Sacramento and San Pablo. The transportation figures (9A and 9B) need to be revised to avoid those streets.

6. California Environmental Quality Act (CEQA)

Comments: 31-2, 33, 36

Comment Summary 6: Several comments were provided that concern the NOE of CEQA.

Specific Comment 7 (Comment 32-2): “I am concerned about the efficacy of the “safety measures” being used during cleanup of the contaminated soil. I do not believe that water, spray foam and plastic sheeting is sufficient to protect surrounding neighbors from toxic dust particles. Also, covering soil w/ tarps to remove the soil in truck beds will also undoubtedly allow for spreading lead-contaminated dust in transportation. I also don’t understand why this project is exempt from CEQA evaluation.”

Specific Response 7: Regarding CEQA, DTSC has determined the project is exempt from CEQA based on CEQA Guidelines section 15061(b)(3), which is discussed in more detail in “Specific Response 8”.

Specific Comment 8 (Comment 33): "Why is it exempt from CEQA? Will this be explained? Project seems like the vision is to create more green space and community space — sounds great if public safety and community are prioritized in the remediation plans."

Specific Response 8: The scope of DTSC's CEQA review is limited to the site remediation activities identified in the RAW. The City of Berkeley previously filed a CEQA Notice of Exemption (NOE) for development of the park project in July 2021. While the City's prior NOE does not cover the site remediation activities, since the City's park project has already been approved for development at the Site, DTSC's CEQA evaluation of implementing the proposed RAW is considered in the context of the park's buildout. The RAW would take place within the same site footprint as the previously approved park project, which is located on vacant land in an urbanized area that does not provide habitat value. The types of site remediation activities that would occur as part of the RAW (i.e., excavation and off-site disposal of soil, followed by backfilling) are consistent with the types of site preparation and grading activities that would occur for developing the park. Similar equipment would be utilized (e.g., loaders, backhoes), and the overall duration of time required for redeveloping the Site would not substantially change. Implementation of the RAW would not require any modifications to the buildout of the park project.

DTSC has determined the RAW meets the criteria for exemption from CEQA under CEQA Guidelines section 15061(b)(3): "The activity is covered by the common sense exemption that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA."

It is also noted that the RAW includes an analysis assessing the air quality and greenhouse gas (GHG) emissions associated with site remediation activities included in the RAW. Based on modeling for the project using CalEEMod, the project's emissions of criteria air pollutants and GHGs are below all applicable thresholds, thus supporting the determination that the project will not have significant environmental effects.

Further, the RAW includes provisions that help ensure site remediation work is protective of the environment and human health. The RAW includes a Community Air Monitoring Plan (CAMP) to protect community health and ensure compliance with regulatory standards by minimizing the amount of fugitive emissions (i.e., dust) released during the removal action. The CAMP describes air monitoring protocols that must be performed during soil activities when fugitive emissions could be released. These

protocols are designed to protect the community and ensure that Site workers react quickly to make appropriate changes to emission control measures, as needed. The RAW also includes a Transportation Plan to minimize potential health safety, and environmental risks resulting from the movement of material and/or equipment during Site remediation. The Transportation Plan's truck route was selected in coordination with the City to minimize impacts on local traffic and sensitive receptors (e.g., schools, residential areas).

DTSC prepared a draft Notice of Exemption (NOE) with this information, which was made available on EnviroStor during the public comment period for the RAW. The NOE will be filed with the CEQA State Clearinghouse upon approval of the RAW.

Specific Comment 9 (Comment 36): "For the organization that is doing the cleanup, DTSC, to make the determination that this project is an Emergency and thus, get an Exemption from having to disclose and evaluate environmental effects of this project while they are the Lead Agency, seems at the least a conflict of interest. The work proposal should more appropriately be evaluated by a disinterested party re: if this is indeed an Emergency. Also, if it is an Emergency, it sounds like more reasons to have CEQA require DTSC to disclose and evaluate environmental effects of the project."

Specific Response 9: For clarification, this project is not considered an emergency action. The City of Berkeley entered into a Standard Voluntary Agreement for site cleanup on March 16, 2023. As discussed in "Specific Response 8", DTSC has determined the project is exempt from CEQA, but the basis is not an emergency exemption but rather is based on CEQA Guidelines section 15061(b)(3).

7. Human Health Risk

Comments: 44, 71

Comment Summary 7: Several comments were provided with concern about the human health risk.

Response Summary 7: The Human Health Risk Assessment (HHRA) for the Santa Fe site is summarized in Section 2.3 of the RAW. That analysis evaluated the potential health risks from exposure to contaminants in soil, including arsenic, lead, and mercury.

The HHRA compared site contaminant levels to DTSC's residential screening levels. The results show that arsenic, lead, and mercury are present at concentrations above the residential screening levels.

People who are exposed over time to soil contaminated with arsenic, lead, or mercury may face increased health risks. Long-term exposure can increase the chance of developing cancer or other chronic diseases. Children are especially sensitive to these metals because of their developing bodies and frequent hand-to-mouth activity.

Before redevelopment of parks can occur at a contaminated site, the contaminated soil would need to be properly removed or managed to reduce exposure risks to construction workers, future residents, and the surrounding community. After cleanup, the soil will meet DTSC's protective standards for residential/recreational use, eliminating unacceptable health risks.

8. Other Comments: 17, 29, 35, 53, 69, 70

Specific Comment 10 (Comment 17): "We are against this project, both the development and the cleanup.

We will address the cleanup first.

We live two houses from the trackbed. My husband grew up in this house, which has been in our family for more than 70 years. The clean up poses a health risk as my husband, has respiratory issues and a serious heart condition. We are concerned that the cleanup will deposit harmful, toxic soil and dust into the air, onto our home and into our yard. The water, spray foam and plastic sheeting are insufficient to prevent the contamination of our property. It will cause long-term health effects and may even make our home unlivable. Additionally, the plan does not mention how the issue of the rodents that will inevitably be displaced during the cleanup which will then infest the area.

The development.

We already responded to the initial community survey and we are expanding our concerns herein. We are against the development of this area as a community garden, dog park and children's play area. The area is just two blocks from San Pablo Park, which already has a large children's play area. The park has ample space to create a community garden and dog park, as the residents of Berkeley already use the open field to exercise their dogs.

The Trackbed will most likely limit parking on Derby Street which is already impacted as there are many multi-family homes on the street. It will also increase traffic on the street from people not from the neighborhood, which is a safety hazard.

And lastly, the City of Berkeley has not addressed the issue of homelessness, and has not offered a plan as to how it will deal with a possible homeless encampment and people who will congregate in the area against its intended use. A prime example is the encampment at the Ohlone Greenway (Hearst Street) that just gets bigger every week. How is the city going to ensure that people do not sleep in the Trackbed? Playing loud music, leaving trash and feces and attracting rodents? We are against having an area so close to our home where people will congregate, make noise, and engage in possible illegal activities. Again, our home is just two houses away from the Trackbed and we will be negatively affected by it on a daily basis.

The city has a bad record in resolving issues that arise from problems that it creates and makes life uncomfortable in Berkeley neighborhoods. They create a problem, then, throw their hands in the air when asked to fix it. A prime example is the pickle ball courts at the Rose Park, a horrible situation for the people who live next to the courts. As lifelong, tax-paying South Berkeley homeowners, we feel that our right to live safely and peacefully in our neighborhood is being ignored by the City.**"**

Specific Response 10: For dust control, as mentioned in General Comment 2, Section 5.3.5 of the RAW includes a Community Air Monitoring Plan. Dust suppression measures include: 1) Regular water spraying to prevent airborne dust. 2) Tarps or plastic sheeting over soil stockpiles. 3)Temporary work stoppages during high winds. 4) Real-time dust monitoring around the site. Trucks transporting soil are required to be covered and cleaned before leaving the site to prevent spreading contaminated material. No toxic spray foams or chemicals will be used in this project. The temporary plastic sheeting and tarps are only there to help control dust and keep soil contained while the cleanup is happening. Once the work is finished, all of that material will be removed. DTSC oversight staff will monitor dust control and transport practices to make sure they follow health and safety standards.

After cleanup, the excavated areas will be backfilled with clean soil and compacted, so that the land is safe and ready for future use. The materials are not being stored on site permanently and will not pose a long-term risk.

For the concerns of rodents, while rodent control is not directly within DTSC's purview, the City and its contractors are expected to comply with local health and safety ordinances regarding pest management during construction activities. DTSC will ensure that these requirements are incorporated into the oversight of the cleanup. For the future use of the property, including the potential development of community gardens, play areas, or other public amenities, are made by the City of Berkeley and not by DTSC. Our authority is limited to ensuring that the cleanup is protective of human

health and the environment, regardless of the site's future use. We encourage you to continue sharing your input on development concerns directly with the City.

Specific Comment 11 (Comment 29): "Many people already use a portion of this land as a dog run/play area. I see no posted warnings that the area is contaminated and/or what risk there is of frequent exposure to human and/or animal."

Specific Response 11: The City has posted notices stating "Site Closed - Soil Sampling Results Show Elevated Arsenic and Lead" with a QR code to the project website for more info. These signs are meant to alert the community that the area is not yet safe for regular recreational use. The City has also locked all four blocks and does their best to maintain them, but frequently finds the locks broken or cut off. The upcoming cleanup work is designed to reduce risks from soil exposure, so the property can be put to safe use in the future. Until cleanup is complete, we recommend that people and animals avoid frequent use of the site.

Specific Comment 12 (Comment 35): "It sounds very good from the short description, but I don't feel that I have enough information to give an informed opinion."

Specific Response 12: All the site reports are available on DTSC's Envirostore database at:
https://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60003466

The draft RAW can be found in the Community Involvement section.

You may also view physical copies at the following:

DTSC Sacramento Regional Office
8800 Cal Center Drive, Sacramento, CA 95826
916-255-3758 (Appointment required, Monday – Friday, 8:00 AM – 5:00 PM)

Specific Comment 13 (Comment 53): "Thank you for cleaning the area and making communal space. Have you contacted the railroad company to help kick in money for the project?"

Specific Response 13: We have not reached out to the railroad company. The City of Berkeley is the current owner of the property, and under state law, the property owner is responsible for the cleanup. Because of this, the City is taking the lead and ensuring the site is cleaned up to residential safety standards.

Specific Comment 14 (Comment 69): "Both the 2400 block of Valley Street and West Street were squared off and sold to the neighbors adjacent to the Santa Fe Right of Way. Also, neighbors on the 2300 block of West Street also squared off their lots with the Santa Fe ROW.

After seeing that the Santa Fe ROW from Blake Street to Ward Street are being decontaminated for arsenic, lead, mercury, we are all concerned if our properties are also contaminated. Since many of us have gardens, this is a big concern. Also, there is a community garden in the ROW between Bancroft and Channing. Is this area also contaminated?

Please keep me in the loop concerning the Blake to Ward Street cleanup and also let me know if the rest of the Right of Way is also in need of testing and decontamination."

Specific Response 14: The current cleanup is focused on the Santa Fe Right of Way between Blake Street and Ward Street, where investigations identified elevated levels of arsenic, lead, and mercury. At this time, sampling and cleanup are limited to that portion of the Right of Way.

Other areas you mentioned, such as properties near Valley Street, West Street, and the community garden between Bancroft and Channing, are not included in this project. Under California law, DTSC's cleanup work must follow specific site boundaries and agreements with the responsible parties or property owners. This means DTSC can only investigate or clean up areas that are formally part of the approved project. DTSC cannot not conduct sampling in those areas, so we do not have information about potential contamination there. However, if property owners are concerned about possible contamination in their gardens, they may choose to collect soil samples or hire an environmental consultant to conduct testing. DTSC can provide general guidance on how to collect and submit samples for laboratory analysis if community members wish to pursue this option.

DTSC will continue to keep the community informed as the Blake to Ward Street cleanup progresses. For information about how to stay updated, please see Section 2 of this document.

Specific Comment 15 (Comments 70): "Not a public comment, just a question I've had for years:

Have you run across any info on what type of heavy metal clean up was done on the Santa Fe trackway where Berkeley built the low income housing on what is now Sojourner Truth Ct? I haven't been able to find anything in writing.

I'm aware this question is outside your project parameters, and I have no intention of raising a fuss, I'm just wondering whether to let my kid plant a fruit tree."

Specific Response 15: DTSC's investigation and cleanup activities are limited to Parcels 1–4 of the Santa Fe Right-of-Way. This area extends north to south between Blake Street and Ward Street, and east to west between Sacramento Street and Mabel Street. Sojourner Truth Court is outside of this project area. Because it is not within our investigation or cleanup boundaries, DTSC does not have information about contamination or cleanup activities at that location. We recommend that concerned community members contact the City of Berkeley for more information about past or ongoing local projects. It appears that a community garden near this area was developed on a former railroad right-of-way through a City- and community-led effort, rather than as a DTSC cleanup project.

For the other comments such as comment 3, 4, 5, 6, 7, 9, 10, 12, 14, 15, 18, 19, 21, 22, 23, 24, 26, 37,41, 48, 50, 52, 54, 55, 56, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 73, 74, 75, 76, 79, 80 we have received, DTSC thanks community members for their support and for expressing agreement with the proposed cleanup plan. DTSC will make effort to protect the health and safety of the surrounding community by ensuring that all cleanup activities are conducted in a safe and safe and legally compliant manner.

Attachment 2- Table 1 – Commenters List and Comments Received and Response

Commenter Number	Comment Number	Reference	Name	Description	General Comment & Response #
1	1-1	Public site	Jack Colicchio	I will be very excited to see work here get underway! These parcels have so much potential and I can't wait to see them become parks. Two questions: 1. When do you expect to begin?	General 1
	1-2			2. I live on Dwight along the final parcel of this chain, but I believe it will be left vacant and untouched. I believe this is due to it being difficult to access, but was wondering if there are future plans for this parcel.	General 3
2	2	Public site	Glen	I appreciate this project and the efforts to mitigate neighborhood impacts. Could you stat the digging part of the project after the rains have moistened the soil? This will reduce airborne toxics and conserve water that would otherwise be sprayed. Thanks!	General 2
3	3	Public site	Deanna Mason	We are so glad this is finally happening. We've been hearing about plans to develop this area since we moved here in 1997, but this is the furthest such plans have ever gotten. Hopefully, it will actually happen this time.	Thanks!
4	4	Public site	ShuN Suzuki	The proposed cleanup plan involves several steps: Removing contaminated soil up to six feet deep. Transporting the contaminated soil to a licensed disposal facility. Backfilling the area with clean soil. Restoring the work areas.	Thanks!
5	5	Public site	Bridget McSweeney	I fully support this cleanup! Thank you for working towards this becoming a park.	Thanks!
6	6	Public site	Stacie Degeneffr	I'm pleased you have a clear plan to limit and monitor dust.	Thanks!
7	7	Public site	Daniel Orjuela	As a neighbor directly adjacent to this space, I highly support this project being done and feel the abatement plan sounds appropriate. Please get it done ASAP!	Thanks!
8	8	Public site	Timothy Burroughs	Thanks for working to clean up this site. Please proceed! Approximately when do you plan to begin?	General 1
9	9	Public site		We love this project and fully support it!	Thanks!
10	10	Public site		I support this! Thank you! Let's clean it up. - Signed, a nearby neighbor	Thanks!
11	11	Public site	TJB	I am concerned about the plan for excavation and minimal dust control. I would prefer enhanced dust control such as wrapping the site in plastic. Please explain why this was not chosen.	General 2-Specific 1

12	12	Public site	Sid Sun	I'm happy you're doing the cleanup. I look forward to when we'll have more functional usage of that space	Thanks!
13	13	Public site	Pablo Traverso	As a resident of South Berkeley, I am excited for this cleanup to occur and for the Santa Fe Trackbed to de developed into publicly-accessible spaces. One of the parts of the Santa Fe Trackbed has served as an unofficial dog park for many years and I hope that the City of Berkeley continues its commitment to set aside a portion of the developed trackbed for a dog park once the cleanup is completed. Additionally, I am interested to see if a multi-purpose recreation lane can be added through the length of the park, so that connections can ultimately be made to the Ohlone Greenway, which many cyclists in South Berkeley approach through the southern entrance of Strawberry Creek Park on the 1300 block of Bancroft Way. Thank you for your hard work and for removing toxic substances from our neighborhoods.	General 3
14	14	Public site		We live in the neighborhood (near corner of Dohr/Ward), with our two young children and a dog. We are very excited to see forward movement on the revitalization of these blocks into community space. We understand there will be some disruption during the remediation period, and are very appreciative of the steps outlined for the safety and consideration of the neighborhood during the process. Thank you and hoping this work can be completed quickly!	Thanks!
15	15	Public site	Brian	I love the idea of fixing up that old Santa Fe Railroad corridor, and love the idea of a community garden, dog park, and children's play area. That corridor has been empty for too long.	Thanks!
16	16	Public site		I don’t understand why dust monitoring stations will be set up to north, east, and west but not to the south. Did you forget about us?	General 2-Specific 2

17	17	Public site	Ronald Willis and Corinne Wilson	We are against this project, both the development and the cleanup. We will address the cleanup first. We live two houses from the trackbed. My husband grew up in this house, which has been in our family for more than 70 years. The clean up poses a health risk as my husband, has respiratory issues and a serious heart condition. We are concerned that the cleanup will deposit harmful, toxic soil and dust into the air, onto our home and into our yard. The water, spray foam and plastic sheeting are insufficient to prevent the contamination of our property. It will cause long-term health effects and may even make our home unlivable. Additionally, the plan does not mention how the issue of the rodents that will inevitably be displaced during the cleanup which will then infest the area. The development We already responded to the initial community survey and we are expanding our concerns herein. We are against the development of this area as a community garden, dog park and children's play area. The area is just two blocks from San Pablo Park, which already has a large children's play area. The park has ample space to create a community garden and dog park, as the residents of Berkeley already use the open field to exercise their dogs. The Trackbed will most likely limit parking on Derby Street which is already impacted as there are many multi-family homes on the street. It will also increase traffic on the street from people not from the neighborhood, which is a safety hazard. And lastly, the City of Berkeley has not addressed the issue of homelessness, and has not offered a plan as to how it will deal with a possible homeless encampment and people who will congregate in the area against its intended use. A prime example is the encampment at the Ohlone Greenway (Hearst Street) that just gets bigger every week. How is the city going to ensure that people do not sleep in the Trackbed? Playing loud music, leaving trash and feces and attracting rodents? We are against having an area so close to our home where people will congregate, make noise, and engage in possible illegal activities. Again, our home is just two houses away from the Trackbed and we will be negatively affected by it on a daily basis. The city has a bad record in resolving issues that arise from problems that it creates and makes life uncomfortable in Berkeley neighborhoods. They create a problem, then, throw their hands in the air when asked to fix it. A prime example is the pickle ball courts at the Rose Park, a horrible situation for the people who live next to the courts. As lifelong, tax-paying South Berkeley homeowners, we feel that our right to live safely and peacefully in our neighborhood is being ignored by the City.	General 2, Others-Specific 10
18	18	Public site	Scott Bergstrom	Thank you for cleaning the area up! I appreciate that the city is approaching hazardous waste with caution, and am excited about the Santa Fe park	Thanks!

				development project. As a resident, I value the city's efforts in beautify-ing and encouraging community engagement in South Berkeley.	
19	19	Public site	Austin McInerny	Thank you for undertaking this project! I am very supportive of "Alternative 2 – Soil Excavation and Off-Site Disposal". As a resident of the area and a member of the community garden on Bancroft Way, I am approached frequently by other residents who want to join the community garden, but we do not have any additional plots. This remediated property will provide additional gardening opportunities and I hope that the soil will be remediated in a manner to allow vegetable gardening. I hope that the City of Berkeley will provide support to enable this property to be managed as a community garden and public space in the future.	Thanks!
20	20	Public site	Ben Gerhardstein	I am an environmental health scientist and a neighbor who has lived near this site for over 13 years. My children frequent the area and we have friends' whose property abuts the site. I am thrilled that the site will be cleaned up so this tract can be used for the benefit of the community. I support the clean up plan. Please move forward with it. My only request is that truck traffic be routed to major streets as directly as possible.	General 5
21	21	Public site	KL	Please clean up the site for our safety so it can be used for other community uses.	Thanks!
22	22	Public site	Sarah Grenham	Thank you, I really appreciate that the recommendation is the remove the contaminated soil.	Thanks!
23	23	Public site	Merrill Gillaspy	With the designated precautions, this cleanup is long overdue. I remember my dog playing with other dogs in one of these grass patches as far back as 2009, when we didn't know about the soil problems. It would be great to clean these up and then have more grassland space available to the neighborhood. Thanks!	Thanks!
24	24	Public site	Kaja	I support this cleanup. The plans for the new use of this land (series of interconnected parks) will be great for the neighborhood.	Thanks!
25	25	mails	Christie Keith	This looks great! Have you considered incorporating a bike lane? That would be very helpful.	General 3
26	26	mails	Carrie Dovzak	Mr. Dong – I am a retired geologist/environmental inspector/research analyst with the SFPUC, who lives very close (about 6 houses away) from the proposed cleanup site. Needless to say, I am very familiar with the safety measures proposed to keep my neighborhood safe from airborne contaminants, and how successful implementation varies from contractor to contractor. I am very much pro clean-up, + look forward to the success of this project. Having said that, I will also keep an eye on the contractor, + let my neighbors know when to call the city + what to look out for during the cleanup. I assume we will be supplied with contact info. Thank you very much.	Thanks!

27	27	mails	Ronald Willis and Corinne Wilson	We are against this project, both the development and the cleanup. We will address the cleanup first. We live two houses from the trackbed. My husband grew up in this house, which has been in our family for more than 70 years. The clean up poses a health risk as my husband, has respiratory issues and a serious heart condition. We are concerned that the cleanup will deposit harmful, toxic soil and dust into the air, onto our home and into our yard. The water, spray foam and plastic sheeting are insufficient to prevent the contamination of our property. It will cause long-term health effects and may even make our home unlivable. Additionally, the plan does not mention how the issue of the rodents that will inevitably be displaced during the cleanup which will then infest the area. The development We already responded to the initial community survey and we are expanding our concerns herein. We are against the development of this area as a community garden, dog park and children's play area. The area is just two blocks from San Pablo Park, which already has a large children's play area. The park has ample space to create a community garden and dog park, as the residents of Berkeley already use the open field to exercise their dogs. The Trackbed will most likely limit parking on Derby Street which is already impacted as there are many multi-family homes on the street. It will also increase traffic on the street from people not from the neighborhood, which is a safety hazard. And lastly, the City of Berkeley has not addressed the issue of homelessness, and has not offered a plan as to how it will deal with a possible homeless encampment and people who will congregate in the area against its intended use. A prime example is the encampment at the Ohlone Greenway (Hearst Street) that just gets bigger every week. How is the city going to ensure that people do not sleep in the Trackbed? Playing loud music, leaving trash and feces and attracting rodents? We are against having an area so close to our home where people will congregate, make noise, and engage in possible illegal activities. Again, our home is just two houses away from the Trackbed and we will be negatively affected by it on a daily basis. The city has a bad record in resolving issues that arise from problems that it creates and makes life uncomfortable in Berkeley neighborhoods. They create a problem, then, throw their hands in the air when asked to fix it. A prime example is the pickle ball courts at the Rose Park, a horrible situation for the people who live next to the courts. As lifelong, tax-paying South Berkeley homeowners, we feel that our right to live safely and peacefully in our neighborhood is being ignored by the City.	Same as Comment 17

28	28	mails	Claire Heinzelman	Please do not begin this project until you can promptly remove all soil. Staging this danger will cause more stress + possible disease. Use of "spray foam" may contain PFAS. Do not use any foam containing PFAS or other chemicals — also toxicants. Thank you for a speedy completion, use of tarps + water for maximum control. There are many children + vulnerable elders in this area. Please also minimize use of plastics. I look forward to these beautiful parks.	General 2-Specific 3
29	29	mails	Edwin Bish	Many people already use a portion of this land as a dog run/play area. I see no posted warnings that the area is contaminated and/or what risk there is of frequent exposure to human and/or animal.	Others-Specific 11
30	30	mails	Niner Jonathan Cohen	Wonderful. It sounds like short term disruption for long-term gain. We've raised our now teen children here & it has always felt like a waste of precious outdoor play space to not have access to it. We are concerned about the development + safety plan for the space following the cleanup but that seems beyond your purview.	General 3
31	31-1	mails	Karen Frickman	I am concerned about the efficacy of the "safety measures" being used during cleanup of the contaminated soil. I do not believe that water, spray foam and plastic sheeting is sufficient to protect surrounding neighbors from toxic dust particles. Also, covering soil w/ tarps to remove the soil in truck beds will also undoubtedly allow for spreading lead-contaminated dust in transportation.	General 2
	31-2			I also don't understand why this project is exempt from CEQA evaluation.	General 6-Specific 7
32	32-1	mails	Winslow	I am concerned about a project that will apparently add COCs, more PLASTIC ("spray foam, plastic sheeting, …, tarps) and other possible toxics to Project Area and beyond. Are those toxic materials being removed and stored in a way that will not eventually (?? earthquakes happen everywhere) be released back into the Earth's outer layer(s)???	General 2
	32-2			Could ONE, at least, section of the park string be a pretty quiet place — sans the need to keep a sharp eye out for these atrocious dog "mines"?? So tired of The Rule Of Dogs!! PLEASE	General 3
33	33	mails	Michael Mansfield / Randy Sweringen	Why is it exempt from CEQA? Will this be explained? Project seems like the vision is to create more green space and community space — sounds great if public safety and community are prioritized in the remediation plans.	General 6-Specific 8
34	34	mails	Dale Odegaard	I think that the plans to clean up the area sound necessary and appropriate. And the plans to redevelop the land into a community garden, dog park, and play area sound like a priority, good idea. And given what some people do, probably a good idea to have some kind of monitoring and supervision for the area. How many children will be using the play area?	General 3

35	35	mails	Dru Saren	It sounds very good from the short description but I don't feel that I have enough information to give an informed opinion.	Others-Specific 12
36	36	mails	Alesia Kunz	For the organization that is doing the cleanup, DTSC, to make the determination that this project is an Emergency and thus, get an Exemption from having to disclose and evaluate environmental effects of this project while they are the Lead Agency, seems at the least a conflict of interest.The work proposal should more appropriately be evaluated by a disinterested party re: if this is indeed an Emergency.Also, if it is an Emergency, it sounds like more reasons to have CEQA require DTSC to disclose and evaluate environmental effects of the project.	General 6-Specific 9
37	37	mails	Rob Wenig & Lisa Montang	I support efforts to clean up this site. Appreciate steps to mitigate dust / prevent aerosolizing of toxic materials. Would also be good to be advised when cleanup is happening.	Thanks!
38	38	mails	Stephanie Lesh	Excellent project, long needed, long overdue.I propose soliciting funds from Terry Taplin (outgoing District Council rep) to plant fruit trees and encourage community gardens in the Santa Fe strip after soil remediation.	General 3
39	39	mails	Edward Grassl	Your reason for the cleanup is that levels of contaminants are higher than allowed for residential use. The solution is don't use it for residential use. The proposed cleanup is worse than the problem. Don't waste money on this project; just leave it alone. The results of your environmental evaluation should show that the problem is not severe enough to warrant the cleanup measures proposed.	General 4-Specific 4
40	40	mails	Deborah Nolan	We're fully behind the planned cleanup and use of the areas. We can't wait to bring our dog to the park! Thank you!	General 1
41	41	mails	Monica Edelen	Around one year ago, I was canvassing (door-to-door) homes/residents very near the part of the west-of-Sacramento St area which is identified as the proposed cleanup area. I was campaigning (pre-election) and recording answers of the residents I spoke to, asking them "What are your concerns regarding any issues that impact you and/or your neighborhood?" Several residents living adjacent to the Santa Fe Trackbed mentioned their apprehensions regarding its toxicity and lack of knowledge of that area's future disposition. I received a mailed invitation to comment on the cleanup and the City's subsequent plans for development. I live almost 3 blocks away from the affected area. After reading the mailing's material, I think that any or all of the Dept. of Parks, Recreation's redevelopment plans seem suitable and relevant to the constituents' wants and needs. However I urge that comments & concerns from those thoughtful and informed neighbors in closer proximity to the Trackbed should be given greater weight in the considerations & decision-making of the DTSC in this case. PS I appreciate that the DTSC is updating the community and providing us with this input/survey opportunity! - M. Edelen	Thanks!

42	42-1	mails	Deborah Segal	I am strongly in favor of making the undeveloped site of former railroad tracks into a community garden. I've been awaiting word on what the next steps are (for what seems like 10 years). I would like a plot in the garden, and as a 65 year old, may it be sooner rather than later. Please sign me up for the future garden! What are the next steps and how can the community help move this forward?	General 1
	42-2			I think the playground is okay, but the vegetable garden is of interest more, as there are already amazing & wonderful playgrounds. The Dog Run already happens on a portion of this land; may as well keep it.	General 3
43	43-1	mails	Kristin Hanson	I am pleased that this area will be detoxified & used as a garden and park. My reservations about what is proposed are: 1) is six feet deep enough?	General 4
	43-2			2)Spray foam seems toxic in its own right?	General 2
	43-3			3) Where is the toxic soil going? Thank you.	General 5
44	44	mails	Pauline Sobel	You neglect to mention the current health hazards of the waste site or the health risks to residents of developing the land.	General 7
45	45	mails	Joad	You must be new... Save your money for something else. The City of Berkeley will never achieve this vision. The diesel spray used by SFRR to abate weeds for 70 years is below years of new dirt and tons of wood mulch. Dogs and people don't disturb deep enough to pose a health risk. The city will squander your efforts meticulous as they may prove to be, for YEARS afterward. Please, do not encourage CoB to add anything to their plate.	General 4-Specific 5
46	46	mails	Marshall Taylor	I fully support the remediation of the Santa Fe RR brown field. I am hopeful that the redevelopment of this site will include: (1) Native plants (2) Not removing the existing quercus agrifolia bt Carleton and Derby (3) Minimizing impermeable surfaces (4) A safe pedestrian path similar to the West Street path (5) No recycled rubber playground surface to add another source of microplastics to the environment (6) If there is to be lighting please make the LED lamp recessed w/its fixture and minimize the wattage, and make it 3000K or ideally less.	General 3
47	47	mails	Susan Henderson	Don't do it. If you do move forward just do the part that will be a children's playground. The dog park is already being used and dogs aren't getting sick. It isn't worth the money or inconvenience to do this!	General 4-Specific 5
48	48	mails	Laurie F. Peterson	Dear Yang Dong et al— I think it is wonderful that you are planning to clean up the Santa Fe trackbed in Berkeley and redevelop the land for use by our residents. I'm all in favor of this proposed and worthwhile project!	Thanks!
49	49-1	mails	Ryan Keeley	I'm on the fence about how important it is to have new parks. Will the new parks add something unique that San Pablo park does not already offer?	General 3
	49-2			If we go ahead with development (1) Immediate neighbors that may be affected by lead dust etc should have a special meeting and hold more power in the decision. (2) Perhaps we should build parks for dogs and older kids who are less affected by lead and other contaminants.	General 2

50	50	mails	Judith Wilkes	The plan sounds good, as long as you do what you say: (1) Redevelop for community garden, dog park, children's play area, NOT housing (2) Cleanup: use fencing, water & tarps to control dust, set up dust monitoring stations to west, east and north.	Thanks! Noted
51	51-1	mails	Mimi Moungovan	Two things: cleanup area + proposed pocket parks. Cannot speak to cleanup good idea or not, sounds good. Proposed pocket park—WHY?? Will increase city of Berkeley deficit for maintenance, salaries, pensions, equipment. Human beings reside/live within feet of it—so people will come for 'events' 6 feet from people's homes. RU kidding me? Land no—not buying they'll 'screen it.' Dumb. The big/most used and loved Berkeley park is 2 square blocks, 15–two blocks away. Why 6 pocket parks? INSANE, but good on a resume.	General 3
	51-2	Emails		Hi -- there are human beings who have made their homes next to this for decades. decades. it's my opinion that some folks in the city want to add bullet points to their resume: - "created!" pocket parks!!!!!! that will remain there long after they leave town. what the human beings will be left with are pocket parks at times SIX FEET from their windows -- from where they live. oh -- the city says we'll plant trees for a screen for the NIGHTTIMELIGHTING. are you kidding me? People -- home -- now strangers coming in day and night for fun activities! six feet from their kitchen and bedroom windows. so -- sure -- clean it up -- but not if it's the first step to these parks. with a city with a 2/3 billion dollar budget deficit (they say someone else is paying for it -- but the city will have to pay to keep it up.) and guess what's TWO BLOCKS AWAY? A TWO SQUARE BLOCK FANTASTIC PARK WITH ALL KINDS OF TERRIFIC THINGS THAT IS THE OLDESTS PARK IN BERKELEY AND THE MOST USED! GIVE ME A BREAK PLEASE! THANK YOU! Mimi Moungovan	General 3

				byw for a lot of people who don't have a city of Berkeley pension -- their home IS their pension -- either to move somewhere less expensive or take out a reverse mortgage. PLEASE!!!!!	
52	52	mails	Naomi Pete	Hello! I've read your copy of your update. Even though I live on [redacted] perhaps when I'm driving (not right now, need a battery) I would be driving into that area. I think your report is clear, and it seems to me you all are taking proper and safe steps to clean that area. I'm ok with your cleanup plan.	Thanks!
53	53	mails	Lori Hines	Thank you for cleaning the area and making communal space. Have you contacted the railroad company to help kick in money for the project?	Others-Specific 13
54	54	mails	Spindler	Seems like a good plan to clean up an area that could be better-used once it is safe to do so! Keep up the good work. A+ communication :)	Thanks! Noted
55	55	mails	Rand Borton	The project makes good sense to me. Please proceed with all necessary safety and environmental precautions.	Thanks!
56	56	mails	Bruce Chamberlain	Good project. Please proceed!	Thanks!
57	57	mails	Lorna Kollmeyer	Clean it up but KEEP the R.O.W. btw Carleton and Parker a DOG PARK!	General 3

58	58-1	mails	Catherine	1) The project sounds good. However, we are far from the project. I would place more weight on comments from immediate neighbors who are more familiar with the site and affected by project. 2) Berkeley recently has been found to be negligent in maintaining monitoring equipment on waste sites (i.e., Cesar Chavez). What guarantees does Berkeley offer that the dust monitors will be functional throughout the project?	General 2
	58-2			3) Who will maintain the new park area & assure that it does not become a homeless encampment?	General 3
59	59	mails	McKenna Mitchell	This plan sounds great. Sounds like the experts are doing their job and you really don't need my opinion. Hopefully, the project can finally get going — sounds exciting! Good luck!	Thanks!
60	60	mails	Jenny White	YES to cleanup & a new Park!	Thanks!
61	61	mails	Lou Pearson	Hi there. We are 100% supportive of the clean-up. We understand that there will be extra noise and mess and cost and feel that it's well worth it. Our family is excited to have more green space in the neighborhood. Thanks so much!	Thanks!
62	62	mails	Scott McGlashan	Yes! Please! We look forward to these areas becoming safe & usable parts of the neighborhood. I understand that there will be impacts from the digging and hauling but I know the results will be worth it. Thanks, Scott	Thanks!
63	63	mails	Allis W. Edwards	The sooner the better!! Thank you!!	Thanks!
64	64	mails	Ben Chun	Please get this done quickly! We have waited years to be able to have a community garden. The sooner the better! Don't let people's random opinions slow this down.	Thanks!
65	65	mails	Katharine Durham	I am very excited about the park and I am very happy about the upcoming work and have no concerns. Thank you	Thanks!
66	66	mails	Jerome Matthews	My family wholeheartedly supports this project — indeed we feel it is long overdue.	Thanks!
67	67	mails	Lisa Sharp	I am thrilled to learn this project will develop public-facing amenities and useful spaces!	Thanks!
68	68	mails	Marcello Molinaro	This seems like a great idea! Good luck and thank you!	Thanks!

69	69	Emails	mori costantino	Dear Mr. Dong, [redacted]. Both the 2400 block of Valley street and West street were squared off and sold to the neighbors adjacent to the Santa Fe Right of Way. Also, neighbors on the 2300 block of West street also squared off their lots with the Santa Fe ROW. After seeing that the Santa Fe ROW from Blake street to Ward Street are being decontaminated for arsenic, lead, mercury, we are all concerned if our properties are also contaminated. Since many of us have gardens, this is a big concern. Also, there is a community garden in the ROW between Bancroft and Channing. Is this area also contaminated? Please keep me in the loop concerning the Blake to Ward street cleanup and also let me know if the rest of the Right of Way is also in need of testing and decontamination. Thank you for your attention to this matter. -mori costantino	Others-Specific 14
70	70	Emails	Carole Krezman	Not a public comment, just a question I've had for years: Have you run across any info on what type of heavy metal clean up was done on the Santa Fe trackway where Berkeley built the low income housing on what is now Sojourner Truth Ct? I haven't been able to find anything in writing. I'm aware this question is outside your project parameters, and I have no intention of raising a fuss, I'm just wondering whether to let my kid plant a fruit tree. Thanks for your attention,	Others-Specific 15
71	71	Emails	Pauline Sobel	Hello, I [redacted] in Berkeley. What kinds of adverse health effects would someone who lives near a site contaminated by arsenic, lead, and mercury be experiencing? And what are the dangers to nearby residents of developing the land? Thank you.	General 7
72	72-1	Emails	Tim Smith	Good Morning, I'd like to comment on the Santa Fe Trackbed project - I have read the site investigation report briefly and also this recent public FAQ. Here are my questions/comments: • I understand that you're going to dig out 6 feet of soil throughout each parcel - correct? Or will it depend on each parcel's future use?	General 4
	72-2			• Why do you need to dig so deep? If the contamination is at the surface, and the future use doesn't include digging in the ground, wouldn't digging 2-3 feet make more sense? I'm just concerned about the cost and schedule for disposing of soil. Disposal just means taking the soil somewhere else.	General 4

	72-3			• What is the schedule for cleanup and development? Thanks	General 1, General 3
73	73	Emails	Xi Aryail Ox	Hello, my name is Xi Aryail Ox I live at [redacted], Berkeley, CA 94702.Near the area that will be cleaned or proposed to be cleaned up. I am in agreement that the areas are correct when it comes to the history of the area. I am a resident and a registered voter, who would like the area to be cleared of all harmful hazards in the area that is being presented.	Thanks!
74	74	Emails	Jorge Rogriguez-Choi	Dear Yang Dong, I received the mailer regarding the proposed toxic clean up. I fully support your efforts. Regards,	Thanks!
75	75	Emails	Ilo Orleans & Lou LaGrange	Happy Friday Yang Dong, We live at [redacted] and are THRILLED there is movement and progress on the Santa Fe Railroad project. We've been in the neighborhood since 2009 and deeply appreciate the thoughtful approach to turning the Santa Fe Trackbed into public space. Thanks so much to you and your team for the hard work and keeping us up to date on next steps. Thanks again and have a good weekend! Respectfully, Ilo Orleans & Lou LaGrange	Thanks!
76	76	Emails	Talya Brettler	It seems there are further dust control strategies that could be implemented during site excavation in order to protect nearby neighbors. Safety of the neighborhood should be the most important consideration. Thanks, Talya Brettler, MD, MPH	Thanks! Noted
77	77	mails	Anushka Drescher	Would appreciate if plans for the later use of the path considered providing space for beneficial wildlife. Suggested nest boxes for birds, bats, owls, etc., and places for wild bees and other CA insects, as well as reptiles and amphibians. Emphasized that humans take too much space and we should leave habitat for other species. Ended with: “Thank you!”	General 3
78	78-1	mails	Karen Rothblatt	1) Would like to know where the toxic soil being removed will go.	General 5
	78-2			2) Asked about the nature of the foam being used—whether it is toxic. Noted concern that foam used by fire departments can kill fish when it gets into waterways.	General 2
79	79	mails	Kew Marx	Sorry - too little, too late. But it sounds wonderful!	Thanks!
80	80	mails	Dennis Dale	Received a letter on 9/23	Noted

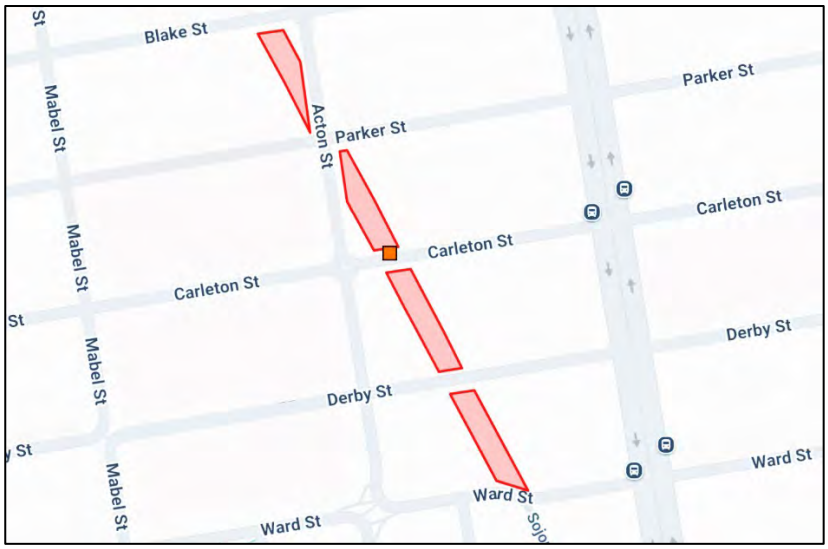
81	81	mails	Karla James	I'm concerned about the truck traffic through the neighborhood. I'm concerned that the trucks will further erode the condition of the roads. Trucks over a certain weight aren't allowed on Carleton Street, but because it's one of the few through streets, I'm afraid the trucks will use Carleton anyway. I'm also concerned about pedestrian safety because of the increased truck traffic. I'm hoping when this project is over, the sidewalk will be added to Acton Street between Carleton and Parker since there currently isn't one. I'm super excited about this project and fully support it. Long overdue.	General 5-Specific 6

Attachment 3- Community Update and Public Notice

Comment on hazardous waste cleanup in your area

This cleanup would remove arsenic, lead, and mercury in soil at the site.

The Department of Toxic Substances Control (DTSC) wants to know what you think about the proposed cleanup at the Berkeley Santa Fe Trackbed. The Site is along Acton Street from Blake Street to Ward Street, Berkeley, CA 94702.



Background

The site is about 1.32-acres of undeveloped land and is bordered by homes. Before 1980, it contained railroad tracks that were part of the Santa Fe Railroad. The City of Berkeley Department of Parks, Recreation, and Waterfront plans to redevelop the land into a community garden, dog park, and children's play area.

Comment on the project

You can send us your comments between **Monday, August 18, 2025,** and **Tuesday, September 16, 2025**.

1. **Online**
   comments.dtsc.ca.gov/24/berkeley-santa-fe or scan the QR code
2. **Email**
   Yang Dong, Project Manager
   Yang.Dong@dtsc.ca.gov
3. **Mail**
   Yang Dong, Project Manager
   DTSC Sacramento Office
   8800 Cal Center Drive
   Sacramento, CA 95826

We review and respond to all public comments before we finalize the workplan. We may edit the workplan based on your comments. All information you submit will be accessible to the public.

Reasons for the cleanup

Soil samples showed elevated levels of arsenic, lead, and mercury. The source of the contaminants is likely linked to former railroad operations. The levels are higher than what is allowed for residential use.

Proposed cleanup

DTSC evaluated different cleanup plans. After analysis, the plan DTSC proposes includes:

- Removing contaminated soil up to six feet deep
- Transporting soil in trucks for off-site disposal
- Refilling holes and compacting with clean, imported soil
- Cleaning up and restoring all work areas

During the cleanup, safety measures to protect the community will include:

- Adding fencing around the site, controlling access, and posting signs at entrances
- Using water, spray foam, and plastic sheeting to control dust and store soil
- Covering soil in truck beds with tarps as it is removed from the site
- Setting up three dust monitoring stations onsite to the west, east, and north

About Us

DTSC's mission is to protect California's people, communities, and environment from toxic substances, to enhance economic vitality by restoring contaminated land, and to compel manufacturers to make safer consumer products.

Learn more about the project

Find the draft cleanup plan and other documents at comments.dtsc.ca.gov/24/berkeley-santa-fe. Or scan the QR code on the first page.

1. Access physical copies at:

   DTSC Sacramento Regional Office
   8800 Cal Center Drive
   Sacramento, CA 95826
   916-255-3545
   Monday - Friday, 8:00 AM - 5:00 PM
   You need an appointment

2. **Tarea Hall Pittman South Library**
   1901 Russell St.
   Berkeley, CA 94703
   510-981-6260

Contacts

Project Manager
Yang Dong, Project Manager
Yang.Dong@dtsc.ca.gov
916-255-6607

Public Outreach
Danielle Gilstrap, Public Participation Specialist
Danielle.Gilstrap@dtsc.ca.gov
714-484-5436

Media
Media.Relations@dtsc.ca.gov

Environmental impact (CEQA)

The California Environmental Quality Act (CEQA) requires the Lead Agency to evaluate and disclose environmental effects of a proposed project. As the Lead Agency, DTSC prepared a Notice of Exemption (NOE) under 15061(b)(3) that this project is exempt from CEQA.

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: _____

Agency or Organization (if applicable): _____

Address: _____

Phone: _____

Email: _____

Comments: _____

Legal Notice | Legal Notice | Legal Notice | Legal Notice | Legal Notice

Public Notice: Berkeley Santa Fe Trackbed to Park

Department of Toxic Substances Control

Comment on hazardous waste cleanup in your area

➢ **This cleanup would remove arsenic, lead, and mercury from soil at the Site.**
The Department of Toxic Substances Control (DTSC) wants to know what you think about the proposed cleanup at the Berkeley Santa Fe Trackbed. The Site is located along Acton Street from Blake Street to Ward Street, Berkeley, CA 94702. The site is about 1.32-acres of undeveloped land bordered by homes. Before 1980, it contained railroad tracks that were part of the Santa Fe Railroad. Samples of soil were taken on site between 2022 and 2024. According to the results, the soil contains arsenic, lead, and mercury, likely from former railroad operations. The City of Berkeley will remove up to six feet of contaminated soil- approximately 6495 tons- and transport it to a permitted disposal facility. The holes will be filled with clean, imported soil and compacted, and all work areas will be cleaned and restored. The City of Berkeley Department of Parks, Recreation, and Waterfront plans to redevelop the land into a community garden, dog park, and children's play area.

Comment on the project: Send us your comments between **August 18, 2025 – September 16, 2025.**

Online
comments.dtsc.ca.gov/24/berkeley-santa-fe
or scan the QR code

Mail
Yang Dong, Project Manager
DTSC Sacramento Office
8800 Cal Center Drive, Sacramento, CA 95826

Email
Yang Dong, Project Manager
Yang.Dong@dtsc.ca.gov

Ask for a public meeting to make a live comment
Contact the Project Manager at **Yang.Dong@dtsc.ca.gov** to ask for a public meeting and explain why you want one. We will record your comments and respond later.

We review and respond to all public comments before we finalize the workplan. We may edit the workplan based on your comments. All information you submit will be accessible to the public.

Learn more about the project: Find the draft cleanup plan and other documents at comments.dtsc.ca.gov/24/ berkeley-santa-fe or scan the QR code. Access physical copies at:
- **Tarea Hall Pittman South Library**, 1901 Russell St., Berkeley, CA 94703
  - ➢ 510-981-6260
- **DTSC Sacramento Regional Office**, 8800 Cal Center Drive, Sacramento, CA 95826
  - ➢ 916-255-3758 (you need an appointment: Monday - Friday, 8:00 AM - 5:00 PM)

Contacts:

Project Manager	Public Outreach	Media
Yang Dong	Danielle Gilstrap, Public	Media.Relations@dtsc.ca.gov
Project Manager	Participation Specialist	
Yang.Dong@dtsc.ca.gov	Danielle.Gilstrap@dtsc.ca.gov	
916-255-6607	714-484-5436	

About us: DTSC's mission is to protect California's people, communities, and environment from toxic substances, to enhance economic vitality by restoring contaminated land, and to compel manufacturers to make safer consumer products.

CEQA: The California Environmental Quality Act (CEQA) requires the Lead Agency to evaluate and disclose the environmental effects of a proposed project. DTSC prepared a Notice of Exemption (NOE) under 15061(b)(3) that this project is exempt from CEQA.

Legal Notice | Legal Notice

NOTICE TO CREDITORS OF BULK SALE (UCC Sec. 6105 and SEC. 24073, ET SEQ, B&P. C.)
Escrow No. 062560093PM
NOTICE IS HEREBY GIVEN that a bulk sale is about to be made. The name(s), business address(es) of the Seller(s), are:
Jose Luis Flores Ortega and Norma Estela Flores 2927 Gomer Dr, Richmond, CA 94806
Doing Business as: El Taconazo Restaurant
All other business name(s) and address(es) used by the Seller(s) within the past three years, as stated by the Seller(s), is/are: none
The name(s) and address of the Buyer(s) is/are:
Ambrocio Foods Corp 7384 Mission St, Daly City, CA 94014
The assets being sold are generally described as: Fixtures, Equipment, Inventory and all business assets and are located at: 7384 Mission St, Daly City, CA 94014
The bulk sale is intended to be consummated at the office of: Bay Area Escrow Services and the anticipated sale date is 09/03/25
The bulk sale IS subject to California Uniform Commercial and Professions Code(s) sections set forth above.
The name and address of the person with whom claims may be filed is: Bay Area Escrow Services, 201 Sand Creek Road, Suite E, Brentwood, CA 94513 and the last date for filing claims by any creditor shall be 9/2/25 on which the notice of the liquor license is received by Escrow agent from the Department of Alcoholic Beverage Control.
Dated: 8/07/25
Buyer(s)
Ambrocio Foods Corp.
By: S/ Anabela Hernandez-Ambrocio, President. By: M ONeal as agent
8/15/25
CNS-3956638#
EL CERRITO JOURNAL

JL 6912664 Aug. 15, 2025

LIEN SALE PIPER POINT MARINA 3861 WILLOW RD. BETHEL ISALAND 08/28/2025 10:00AM.
1981 HOBIE TYPE VE CF5658GZ CA. 17' HULL CCMQ0149M81 -
1981 SHRL CARRIER 1BD2802 CA I.D. 1YR078791BB00079 -
1991 BAYLINER TYPE 82 CF2946NC CA. 25'7" HULL BL3B07SBK091
8/15/25
CNS-3956445#
EL CERRITO JOURNAL
JL 6912406
Aug. 15, 2025

LIEN SALE DELTA RV & BOAT STORAGE 3510 BIXLER RD BYRON 08/26/2025 10:00AM
1989 SEARY CF8315JW CA TYPE VE 18' HULL SER02576D989
1989 SHORE 4AY1563 CA CARRIER I.D. 1MDDTT226KK387026
8/15/25
CNS-3955750#
EL CERRITO JOURNAL
JL 6912191
Aug. 15, 2025

LIEN SALE
RODEO MARINA, LLC
609 QUINAN ST PINOLE
08/26/2025 10:00AM
1959 TRLRB CF2187AM CA. TYPE 82 15'4" HULL 59G441 -
1961 HEWIT CARRIER 4FE2445 CA I.D. C15164
8/15/25
CNS-3955751#
EL CERRITO JOURNAL
JL 6912193
Aug. 15, 2025

Comente Sobre el Plan para Limpiar Arsénico, Plomo y Mercurio en Berkeley

15 August 2025 Visión Hispana

Berkeley | Contaminación del suelo | DTSC | Desechos peligrosos | Participación ciudadana | Proyecto ambiental | Suelo contaminado

Aviso Público: Berkeley Santa Fe Trackbed to Park

Department of Toxic Substances Control

Comente sobre la limpieza de desechos peligrosos en su área

Esta limpieza eliminaría arsénico, plomo y mercurio del suelo en el Sitio.

El Departamento de Control de Sustancias Tóxicas (DTSC) desea conocer su opinión sobre el plan de limpieza propuesto para la vía férrea de Santa Fe en Berkeley. El Sitio se encuentra a lo largo de la Acton Street, entre Blake Street y Ward Street, en Berkeley, CA 94702. El Sitio es un terreno sin desarrollar de aproximadamente 1.32 acres, que está rodeado de viviendas. Antes de 1980, este terreno contenía vías férreas que eran parte del Ferrocarril de Santa Fe. Se tomaron muestras de suelo en el Sitio entre 2022 y 2024. Según los resultados, el suelo contiene arsénico, plomo y mercurio, probablemente debido a operaciones ferroviarias anteriores. La Ciudad de Berkeley removerá hasta seis pies de profundidad del suelo contaminado —aproximadamente 6,495 toneladas— y lo transportará a una instalación de eliminación autorizada. Los huecos serán rellenados con tierra limpia, importada y compactada, y todas las áreas de trabajo serán limpiadas y restauradas. El Departamento de Parques, Recreación y Zona Costera de la Ciudad de Berkeley planea convertir el terreno en un jardín comunitario, un parque para perros y un área de juegos infantiles.

Comente sobre el proyecto: Envíenos sus comentarios entre el **lunes 18 de agosto de 2025, y el martes 16 de septiembre de 2025.**

En línea
comments.dtsc.ca.gov/24/berkeley-santa-fe

También puede escanear el código QR

Por correo electrónico
Yang Dong, Gerente de Proyecto
Yang.Dong@dtsc.ca.gov

Por correo
Yang Dong, Gerente de Proyecto
DTSC Sacramento Office 8800 Cal Center Drive
Sacramento, CA 95826

¿Desea una reunión pública?
Puede solicitar una reunión pública para dar su comentario en vivo. Contacte al Gerente del Proyecto en **Yang.Dong@dtsc.ca.gov** y explique por qué desea una. Registraremos sus comentarios y responderemos posteriormente.

Revisamos y respondemos a todos los comentarios públicos antes de aprobar o rechazar el plan de trabajo. Podemos modificar el plan en función de sus comentarios. Toda la información enviada será accesible al público.

Más información sobre el proyecto: Revise el plan de limpieza preliminar y otros documentos en: comments.dtsc.ca.gov/24/berkeley-santa-fe. También puede escanear el código QR. Copias físicas estan disponibles en:

- **Tarea Hall Pittman South Library**, 1901 Russell St., Berkeley, CA 94703
  510-981-6260

- **DTSC Sacramento Regional Office**, 8800 Cal Center Drive, Sacramento, CA 95826
  916-255-3758 Se requiere cita previa (lunes a viernes, 8:00 AM – 5:00 PM)

Gerente del Proyecto
Yang Dong,
Gerente de Proyecto
Yang.Dong@dtsc.ca.gov
916-255-6607

Participación Pública
Danielle Gilstrap,
Especialista de Participación Publica
Danielle.Gilstrap@dtsc.ca.gov 714-484-5436

Medios de Comunicación
Media.Relations@dtsc.ca.gov

Sobre nosotros: La misión del DTSC es proteger a las personas, comunidades y el medio ambiente en California de sustancias tóxicas, revitalizar tierras contaminadas y promover la fabricación de productos de consumo más seguros.

CEQA – Ley de Calidad Ambiental de California: La CEQA requiere que la agencia responsable evalúe y divulgue los efectos ambientales de un proyecto propuesto. DTSC preparó un Aviso de Exención (NOE) conforme a la sección 15061(b)(3), lo cual indica que este proyecto está exento de CEQA. El público puede consultar el NOE en el enlace indicado arriba.

Attachment 4 - Copies of Comments

1. The Comments 1-24 were received from public website.
2. The Comments 25-81 were received from emails and mails.

Comment 1-14

Comment	Id	Project	ReferenceN	DateReceiv	Source	Name	Message	Response	PreferredC	DateSubmitt	Attachmen
1	177	24	PCR00017	08/18/202	Public site	Jack Colicchio	I will be very excited to see work here get underway! These parcels have so much potential and I can't wait to see them become parks. Two questions: 1. When do you expect to begin? 2. I live on Dwight along the final parcel of this chain, but I believe it will be left vacant and untouched. I believe this is due to it being difficult to access, but was wondering if there are future plans for this parcel.		email	08/18/2025	0
2	178	24	PCR00017	08/18/202	Public site	Glen	I appreciate this project and the efforts to mitigate neighborhood impacts. Could you stat the digging part of the project after the rains have moistened the soil? This will reduce airborne toxics and conserve water that would otherwise be sprayed. Thanks!		email	08/18/2025	0
3	179	24	PCR00017	08/18/202	Public site	Deanna Mason	We are so glad this is finally happening. We've been hearing about plans to develop this area since we moved here in 1997, but this is the furthest such plans have ever gotten. Hopefully, it will actually happen this time.		email	08/18/2025	0
4	180	24	PCR00018	08/18/202	Public site	ShuN Suzuki	The proposed cleanup plan involves several steps: Removing contaminated soil up to six feet deep. Transporting the contaminated soil to a licensed disposal facility. Backfilling the area with clean soil. Restoring the work areas.		mail	08/18/2025	0
5	181	24	PCR00018	08/18/202	Public site	Bridget McSweeney	I fully support this cleanup! Thank you for working towards this becoming a park.		email	08/18/2025	0
6	182	24	PCR00018	08/19/202	Public site	Stacie Degeneffr	I'm pleased you have a clear plan to limit and monitor dust.		email	08/19/2025	0
7	183	24	PCR00018	08/19/202	Public site	Daniel Orjuela	As a neighbor directly adjacent to this space, I highly support this project being done and feel the abatement plan sounds appropriate. Please get it done ASAP!		none	08/19/2025	0
8	184	24	PCR00018	08/19/202	Public site	Timothy Burroughs	Thanks for working to clean up this site. Please proceed! Approximately when do you plan to begin?		email	08/19/2025	0
9	185	24	PCR00018	08/19/202	Public site		We love this project and fully support it!		none	08/19/2025	0
10	186	24	PCR00018	08/19/202	Public site		I support this! Thank you! Let's clean it up. - Signed, a nearby neighbor		none	08/19/2025	0
11	187	24	PCR00018	08/20/202	Public site	TJB	I am concerned about the plan for excavation and minimal dust control. I would prefer enhanced dust control such as wrapping the site in plastic. Please explain why this was not chosen.		email	08/20/2025	0
12	188	24	PCR00018	08/20/202	Public site	Sid Sun	I'm happy you're doing the cleanup. I look forward to when we'll have more functional usage of that space		none	08/20/2025	0
13	189	24	PCR00018	08/21/202	Public site	Pablo Traverso	As a resident of South Berkeley, I am excited for this cleanup to occur and for the Santa Fe Trackbed to de developed into publicly-accessible spaces. One of the parts of the Santa Fe Trackbed has served as an unofficial dog park for many years and I hope that the City of Berkeley continues its commitment to set aside a portion of the developed trackbed for a dog park once the cleanup is completed. Additionally, I am interested to see if a multi-purpose recreation lane can be added through the length of the park, so that connections can ultimately be made to the Ohlone Greenway, which many cyclists in South Berkeley approach through the southern entrance of Strawberry Creek Park on the 1300 block of Bancroft Way. Thank you for your hard work and for removing toxic substances from our neighborhoods. Thanks, Pablo Traverso		email	08/21/2025	0
14	191	24	PCR00019	08/22/202	Public site		We live in the neighborhood (near corner of Dohr/Ward), with our two young children and a dog. We are very excited to see forward movement on the revitalization of these blocks into community space. We understand there will be some disruption during the remediation period, and are very appreciative of the steps outlined for the safety and consideration of the neighborhood during the process. Thank you and hoping this work can be completed quickly!		none	08/22/2025	0

Comment 15-24

15	192	24	PCR00019:	08/22/202	Public site	Brian	I love the idea of fixing up that old Santa Fe Railroad corridor, and love the idea of a community garden, dog park, and children's play area. That corridor has been empty for too long.	none	08/22/2025	0
16	193	24	PCR00019:	08/24/202	Public site		I don’t understand why dust monitoring stations will be set up to north, east, and west but not to the south. Did you forget about us?	none	08/24/2025	0
17	194	24	PCR00019	08/25/202	Public site		We are against this project, both the development and the cleanup. We will address the cleanup first. We live two houses from the trackbed. My husband grew up in this house, which has been in our family for more than 70 years. The clean up poses a health risk as my husband, has respiratory issues and a serious heart condition. We are concerned that the cleanup will deposit harmful, toxic soil and dust into the air, onto our home and into our yard. The water, spray foam and plastic sheeting are insufficient to prevent the contamination of our property. It will cause long-term health effects and may even make our home unlivable. Additionally, the plan does not mention how the issue of the rodents that will inevitably be displaced during the cleanup which will then infest the area. The development We already responded to the initial community survey and we are expanding our concerns herein. We are against the development of this area as a community garden, dog park and children’s play area. The area is just two blocks from San Pablo Park, which already has a large children’s play area. The park has ample space to create a community garden and dog park, as the residents of Berkeley already use the open field to exercise their dogs. The Trackbed will most likely limit parking on Derby Street which is already impacted as there are many multi-family homes on the street. It will also increase traffic on the street from people not from the neighborhood, which is a safety hazard. And lastly, the City of Berkeley has not addressed the issue of homelessness, and has not offered a plan as to how it will deal with a possible homeless encampment and people who will congregate in the area against its intended use. A prime example is the encampment at the Ohlone Greenway (Hearst Street) that just gets bigger every week. How is the city going to ensure that people do not sleep in the Trackbed? Playing loud music, leaving trash and feces and attracting rodents? We are against having an area so close to our home where people will congregate, make noise, and engage in possible illegal activities. Again, our home is just two houses away from the Trackbed and we will be negatively affected by it on a daily basis. The city has a bad record in resolving issues that arise from problems that it creates and makes life uncomfortable in Berkeley neighborhoods. They create a problem, then, throw their hands in the air when asked to fix it. A prime example is the pickle ball courts at the Rose Park, a horrible situation for the people who live next to the courts. As lifelong, tax-paying South Berkeley homeowners, we feel that our right to live safely and peacefully in our neighborhood is being ignored by the City.	mail	08/25/2025	0
18	195	24	PCR00019	08/26/202	Public site	Scott Bergstrom	Thank you for cleaning the area up! I appreciate that the city is approaching hazardous waste with caution, and am excited about the Santa Fe park development project. As a resident, I value the city's efforts in beautify-ing and encouraging community engagement in South Berkeley.	none	08/26/2025	0
19	198	24	PCR00019	08/26/202	Public site	Austin McInerny	Thank you for undertaking this project! I am very supportive of "Alternative 2 – Soil Excavation and Off-Site Disposal". As a resident of the area and a member of the community garden on Bancroft Way, I am approached frequently by other residents who want to join the community garden, but we do not have any additional plots. This remediated property will provide additional gardening opportunities and I hope that the soil will be remediated in a manner to allow vegetable gardening. I hope that the City of Berkeley will provide support to enable this property to be managed as a community garden and public space in the future.	email	08/26/2025	0
20	199	24	PCR00019	08/27/202	Public site	Ben Gerhardstein	I am an environmental health scientist and a neighbor who has lived near this site for over 13 years. My children frequent the area and we have friends’ whose property abuts the site. I am thrilled that the site will be cleaned up so this tract can be used for the benefit of the community. I support the clean up plan. Please move forward with it. My only request is that truck traffic be routed to major streets as directly as possible.	email	08/27/2025	0
21	200	24	PCR00020	08/27/202	Public site	KL	Please clean up the site for our safety so it can be used for other community uses.	email	08/27/2025	0
22	201	24	PCR00020	08/28/202	Public site	Sarah Grenham	Thank you, I really appreciate that the recommendation is the remove the contaminated soil.	email	08/28/2025	0
23	204	24	PCR00020	08/30/202	Public site	Merrill Gillaspy	With the designated precautions, this cleanup is long overdue. I remember my dog playing with other dogs in one of these grass patches as far back as 2009, when we didn’t know about the soil problems. It would be great to clean these up and then have more grassland space available to the neighborhood. Thanks!	email	08/30/2025	0
24	207	24	PCR00020	09/05/202	Public site	Kaja	I support this cleanup. The plans for the new use of this land (series of interconnected parks) will be great for the neighborhood.	email	09/05/2025	0

Comment 27, same with comment 17

Berkeley Santa Fe Trackbed to Park Comment on Hazardous Waste Cleanup

We are against this project, both the development and the cleanup.

We will address the cleanup first.

We live two houses from the trackbed. My husband grew up in this house, which has been in our family for more than 70 years. The clean up poses a health risk as my husband, has respiratory issues and a serious heart condition. We are concerned that the cleanup will deposit harmful, toxic soil and dust into the air, onto our home and into our yard. The water, spray foam and plastic sheeting are insufficient to prevent the contamination of our property. It will cause long-term health effects and may even make our home unlivable. Additionally, the plan does not mention how the issue of the rodents that will inevitably be displaced during the cleanup which will then infest the area.

The development

We already responded to the initial community survey and we are expanding our concerns herein. We are against the development of this area as a community garden, dog park and children's play area. The area is just two blocks from San Pablo Park, which already has a large children's play area. The park has ample space to create a community garden and dog park, as the residents of Berkeley already use the open field to exercise their dogs.

The Trackbed will most likely limit parking on Derby Street which is already impacted as there are many multi-family homes on the street. It will also increase traffic on the street from people not from the neighborhood, which is a safety hazard.

And lastly, the City of Berkeley has not addressed the issue of homelessness, and has not offered a plan as to how it will deal with a possible homeless encampment and people who will congregate in the area against its intended use. A prime example is the encampment at the Ohlone Greenway (Hearst Street) that just gets bigger every week. How is the city going to ensure that people do not sleep in the Trackbed? Playing loud music, leaving trash and feces and attracting rodents? We are against having an area so close to our home where people will congregate, make noise, and engage in possible illegal activities. Again, our home is just two houses away from the Trackbed and we will be negatively affected by it on a daily basis.

The city has a bad record in resolving issues that arise from problems that it creates and makes life uncomfortable in Berkeley neighborhoods. They create a problem, then, throw their hands in the air when asked to fix it. A prime example is the pickle ball courts at the Rose Park, a horrible situation for the people who live next to the courts.

As lifelong, tax-paying South Berkeley homeowners, we feel that our right to live safely and peacefully in our neighborhood is being ignored by the City.

Sincerely, Ronald Willis and Corinne Wilson. 8/25/2025

[redacted]

Comment 25

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Christie Keith

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: This looks great!
Have you considered incorporating a ~~bad~~ bike lane? That would be very helpful.

Comment 26

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Carrie Dovzak

Agency or Organization (if applicable): Neighbor living close to mitigation/cleanup work

Address: [redacted]

Phone:

Email:

Comments: Mr. Dong - I am a retired geologist/environmental inspector/research analyst with the SFPUC, who lives very close (about 6 houses away) from the proposed clean-up site. Needless to say I am very, very familiar with the 'safety measures' proposed to keep my neighborhood safe from airborne contaminants, and how successful implementation varies from contractor to contractor. I am very much "pro" clean-up, + look forward to the success of this project. Having said that - I will also keep an eye on the contractor, + let my neighbors know when to call the city, + what to look out for during the clean up. I assume we will be supplied with contact info.

Thank you very much.

Sincerely, C. Dovzak

[redacted]

Comment 28

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Claire Weingarten

Agency or Organization (if applicable): Resident on Park St

Address: [redacted]

Phone:

Email:

Comments: Please do not begin this project until you can promptly remove all soil, Having this longer will cause more stress & possible disease.

Use of "spray foam" May contain PFAS. Do not use any foam containing PFAS or other chemicals — also toxicants.

Thank you for a speedy completion, use of tarps & water for max dust control - There are many children & vulnerable elders in this area.

Please also minimize use of plastics.

I look forward to these beautiful parks

Comment 29

Comment on hazardous waste cleanup in your neighborhood

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Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Edwin Bish

Agency or Organization (if applicable): N/A

Address: [redacted]

Phone:

Email:

Comments:

Many people already use a portion of this Land as a dog Run/Play AREA. I See no posted WARNings that the AREA is contaminated and/or what risk there is of Frequent exposom to Human and/or Animal

Comment 30

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Nina + Jonathan Cohen

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: Wonderful. It sounds like short term disruption for long-term gain. We've raised our now teen children here + it has always felt like a waste of precious outdoor play space to not have access to it. We are concerned about the development + safety plan for the space following the clean up but that seems beyond your purview

Comment 31

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Karen Friedman

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: I am concerned about the efficacy of the "safety measures" being used during cleanup of the contaminated soil. I do not believe that water, spray foam and plastic sheeting is sufficient to protect surrounding neighbors from toxic dust particles. Also, covering soil in tarps to remove the soil in truck beds will also undoubtedly allow for spreading lead-contaminated dust in transportation.

I also don't understand why ~~CEQA is~~ this project is exempt from CEQA evaluation.

Thank you. Karen Friedman

Comment 32

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Winslow

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email: -0-

Comments: I AM concerned about a project that will, apparently, add GOBS more PLASTIC ("spray foam, plastic sheeting," .... "tarps") and other possible toxics to Project Area and beyond....

Are those toxic materials being removed and stored in a way that will not eventually (??. earthquakes HAPPEN everywhere) be released back into the Earth's Outer layer(s) ???

Could ONE, at least, Section of the park string be a pretty, quiet place sans the need to keep a sharp eye out for those atrocious dog "mines" ?? So tired of The Rule Of Dogs !! PLEASE

Comment 33

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: MICHAEL MANSFIELD / RANDY SWERINGEN

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: Why is it exempt from CEQA? Will this be explained? Project seems like the vision is to create more green space and community space — sounds great if public safety and community are prioritized in the remediation plans.

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Dale Odegaard

Agency or Organization (if applicable): _____

Address: [redacted]

Phone: [redacted]

Email: [redacted]

Comments: I think that the plans to clean up the area sound necessary and appropriate. And the plans to redevelop the land into a community garden, dog park and play area sound like a pretty good idea. And given what some people do, probably a good idea to have some kind of monitoring and supervision for the area. How many children will be using the play area?

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Dru Saren

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: It sounds very good from the short description but I don't feel that I have enough information to give an informed ~~opinion~~. opinion.

Comment 36

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Alesia Kunz

Agency or Organization (if applicable):

Address:

Phone:

Email: alesiakunz@gmail.com

Comments: Please see attached comment.

Comment on hazardous waste cleanup of Berkeley Santa Fe Trackbed.

[redacted] Alesia Kunz

[redacted]

For the organization that is doing the cleanup, DTSC, to make the determination that this project is an Emergency and thus, get an Exemption from having to disclose and evaluate environmental effects of this project which they are the Lead Agency of seems at the least a conflict of interest.

The work proposal should more appropriately be evaluated by a disinterested party re: if this is indeed an Emergency.

Also, if it is an Emergency, it sounds like more reasons to have the CEQA require DTSC to disclose and evaluate environmental effects of the project.

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Rob Wenig + Lisa Montag

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: I support efforts to clean up this site. Appreciate steps to mitigate dust / prevent aerosolizing of toxic materials.

would also be good to be advised when cleanup is happening

Comment 38

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Stephen LESH

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: Excellent project, long needed, long overdue.
I propose soliciting funds from Terry Taplin & adjoining district ~~Council~~ Council reps to plant fruit trees + encourage community gardens in the Santa Fe strip after soil remediation.

Comment 39

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Edward Grassl

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: Your reason for the cleanup is that levels of contaminants are higher than allowed for residential use.

The solution is don't use it for residential use.

The proposed cleanup is worse than the problem.

Don't waste money on this project; just leave it alone.

The results of your environmental evaluation should show that the problem is not severe enough to warrant the cleanup measures proposed.

Comment 40

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
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8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Deborah Nolan

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email: [redacted]

Comments:

We're fully behind the planned cleanup and use of the areas.

We can't wait to bring our dog to the park!

Thank You!

Comment 41

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Marcia Edelen

Agency or Organization (if applicable): —

Address: [redacted]

Phone:

Email:

Comments:

Around one year ago, I was canvassing (door-to-door) homes/residents very near the part of the west-of-Sacramento St area which is identified as the proposed cleanup area. I was campaigning (pre-election) and recording answers of the residents I spoke to, asking them "What are your concerns regarding any issues that impact you and/or your neighborhood?" Several residents living adjacent to the Santa Fe Trackbed mentioned their apprehensions regarding its toxicity and lack of knowledge of that area's future disposition.

I received a mailed invitation to comment on the cleanup and the City's subsequent plans for development. I live almost 3 blocks away from the affected area. After reading the mailing's material, I think that any or all of the Dept.of Parks, Recreation's redevelopment plans seem suitable and relevant to the constituents' wants and needs. However I urge that comments & concerns from those thoughtful and informed neighbors in closer proximity to the Trackbed should be given greater weight in the considerations & decision-making of the DTSC in this case.

- PS I appreciate that the DTSC is updating the community and providing us with this input/survey opportunity!

-M. Edelen

Comment 42

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Deborah Segal

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: I am strongly in favor of making the undeveloped site of former railroad tracks into a community garden.

I've been awaiting word on what the next steps are, (for what seems like 10 years)

I would like a plot in the garden, and as 65 year old, may it be sooner rather than later. Please sign me up for the future garden!

What are the next steps and how can the community help move this forward?

I think the playground is okay, but the vegetable garden is of interest more, as there are already amazing & wonderful playgrounds. The Dog Run already happens on a portion of this land - may as well keep it.

Comment 43

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
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8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Kristin Hanson

Agency or Organization (if applicable):

Address:

Phone:

Email: [redacted]

Comments:

I am pleased that this area will be detoxified & used as a garden and park.

My reservations about what is proposed are
(1) is six feet deep ~~deep~~ enough?
and
(2) is spray foam ~~sprayed~~ toxic in its own right?
and
(3) where is the toxic soil going?

Thank you.

Comment on hazardous waste cleanup in your neighborhood

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8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Pauline Sobel

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments:

Yaw neglect to mention the current health hazards of the waste site or the health risks to residents of developing the land.

Thank yaw.

Comment 45

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Joad

Agency or Organization (if applicable):

Address:

Phone:

Email: [redacted]

Comments: You must be new... Save your money for something else. The City of Berkeley will never achieve this vision.

Btw, the diesel spray used by SFRR to abate weeds for 70 years is below years of new dirt and tons of wood mulch. Dogs and people don't disturb deep enough to pose a health risk.

The city will squander your efforts, meticulous as they may prove to be, for YEARS afterward.

Please, do not encourage CoB to add anything to their plate

Comment 46

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Marshall Taylor

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: I fully support the remediation of this Santa Fe RR brown field site. I am hopeful that the redevelopment of this site will include:

1. Native plants
2. Not removing the existing quercus agrifola blt Carleton and Derby.
3. Minimizing impermeable surfaces
4. a bike/pedestrian path similar to the West Street path.
5. No recycled rubber playground surfaces to add another source of microplastics to the environment.
6. If there is to be lighting, please make the LED lamp recessed w/i its fixture and minimize the wattage, and make it 3000k or ideally less.

Thanks!!! Marshall Taylor

Comment 47

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Susan Handerson

Agency or Organization (if applicable): _____

Address: [redacted]

Phone: _____

Email: _____

Comments: Don't do it —
if you do move forward just do the part that will be a childrens playground the dog park is already being used dogs aren't getting sick

IT isn't worth the money or inconvenience to do this!

Comment 48

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Laurie F. Peterson

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments:

Dear Yang Dong et al—

I think it is wonderful that you are planning to clean up the Santa Fe Trackbed in Berkeley and redevelop the land for use by our residents.

I'm all in favor of this proposed and worthwhile project!

Thank you,

Laurie Peterson

Comment 49

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Ryan Keeley

Agency or Organization (if applicable): Neighbor

Address: [redacted]

Phone:

Email:

Comments: I'm on the fence about how important it is to have new parks. Will the new parks add something unique that San Pablo park does not already offer?

If we go ahead with development

1) Immediate neighbors that may be affected by lead dust, etc should have a special meeting and hold more power in the decision

2) Perhaps we should build parks for dogs and older kids who are less affected by lead and other contaminents.

Commment 50

Acton from Blake to Ward

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Judith Wilkes

Agency or Organization (if applicable): _____

Address: [redacted]

Phone: _____

Email: _____

Comments: The plan sounds good, as long as you do what you say you'll do.

1) Redevelope for community garden, dog park, children's play area. NOT housing

2) cleanup: use fencing, water & tarps to control dust, set up dust monitoring stations to west, east and north.

Comment 51-1

Comment on hazardous waste cleanup in your neighborhood

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8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Mimi Moungovan

Agency or Organization (if applicable): Resident

Address: [redacted]

Phone:

Email:

Comments:

two things = - cleanup area
- proposed "pocket parks"

I cannot speak to cleanup / good idea or not. Sounds good

Proposed pocket park - WHY ??

1) will increase city of Berkeley deficit for maintenance — salaries, pensions, equipment

2) Human beings reside / LIVE within feet of it - so people will come for "events" 6 feet from peoples HOMES. RU kidding me..? and no - not buying they'll "screen it." OMG

3) The Berk's MOST USED AND LOVED Berkeley park - 2 square blocks — IS TWO BLOCKS AWAY -

Why ? pocket parks? INSANE but good on a resume?

Comment 51-2

From: Mimi Moungovan
To: Gilstrap, Danielle@DTSC
Subject: Re: COMMUNITY UPDATE: Berkeley Santa Fe Trackbed to Park
Date: Saturday, August 23, 2025 1:56:10 PM

Hi --
there are human beings who have made their homes next to this for decades.
decades.
it's my opinion that some folks in the city want to add bullet points to their resume:
- "created!" pocket parks!!!!!!
that will remain there long after they leave town.
what the human beings will be left with are pocket parks
at times SIX FEET from their windows -- from where they live.
oh -- the city says we'll plant trees for a screen for the NIGHTTIMELIGHTING.
are you kidding me?
People -- home -- now strangers coming in day and night for fun activities!
six feet from their kitchen and bedroom windows.

so -- sure -- clean it up --
but not if it's the first step to these parks.
with a city with a 2/3 billion dollar budget deficit
(they say someone else is paying for it -- but the city will have to pay to keep it up.)

and guess what's TWO BLOCKS AWAY?
A TWO SQUARE BLOCK FANTASTIC PARK WITH ALL KINDS OF
TERRIFIC THINGS THAT IS THE OLDESTS PARK IN BERKELEY
AND THE MOST USED!

GIVE ME A BREAK PLEASE!

THANK YOU!

Mimi Moungovan

byw for a lot of people who don't have a city of Berkeley pension --
their home IS their pension -- either to move somewhere less expensive
or take out a reverse mortgage.

PLEASE!!!!!

Comment 52

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Naomi Pete

Agency or Organization (if applicable): [redacted]

Address: [redacted]

Phone: [redacted]

Email: [redacted]

Comments: Hello! I've read your copy of your update. Even though I live on [redacted] perhaps when I'm driving (not right now, need a battery) I would be driving in that area. I think your report is clear, and it seems to me you all are taking proper and safe steps to clean that area. I'm ok with your cleaning ~~plan~~ op plan.

Comment 53

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Lori Hines

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments:

Thank you for (proposing) cleaning the area and making communal space.
Have you contacted the railroad company to help kick in money for the project?

Comment 54

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Spindler

Agency or Organization (if applicable): n/a

Address: [redacted]

Phone:

Email:

Comments:

Seems like a good plan to clean up an area that could be better-used once it is safe to do so!

Keep up the good work. A+ communication !!

Comment 55

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Rand Barton

Agency or Organization (if applicable): N/A

Address: [redacted]

Phone:

Email:

Comments: The project makes good sense to me. Please proceed with all necessary safety and environmental precautions.

Comment 56

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Bruce Chamberlain

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email: [redacted]

Comments: Good project. Please proceed!

Comment 57

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Lorna Kollmeyer

Agency or Organization (if applicable): resident

Address: [redacted]

Phone:

Email:

Comments: clean it up but KEEP the R.O.W. btw Carleton and Parker a DOG PARK!

Sincerely,

Comment 58

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Casterline

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: 1) The project sounds good. However, we are far from the project. I would place more weight on comments from immediate neighbors who are more familiar with the site and affected by project.

2) Berkeley recently has been found to be negligent in maintaining monitoring equipment on waste sites (i.e. Cesar Chavez). What guarantees does Berkeley offer that all the dust monitors will be functional throughout the project.

3) who will maintain the new park area & assure that it does not become a homeless encampment ?

Comment 59

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Mckenna Mitchell

Agency or Organization (if applicable): Landscape Designer / Neighbor

Address: [redacted]

Phone:

Email:

Comments: This plan sounds great. Sounds like the experts are doing their job and you really don't need my opinion. Hopefully, the project can finally get going - sounds exciting!
Good luck!

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Jenny White

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: YES to cleanup & a new Park!

Comment 61

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Lou Pearson

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments:

Hi there. We are 100% supportive of the clean-up. We understand that there will be extra noise and mess and cost and feel that it's well worth it. Our family is excited to have more green space in the neighborhood.

Thanks somuch!

Comment 62

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Scott McGlashan

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: Yes! Please! We look forward to these areas becoming safe & usable parts of the neighborhood.
I understand that there will be imports from the digging and hauling but I know the results will be worth it

Thanks, Scott

Comment 63

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Allie W. Edwards

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: The sooner the better!!
Thank you!!
Allie W. Edwards

Comment 64

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Ben Chun

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: Please get this done quickly! We have waited years to be able to have a community garden. The sooner the better! Don't let people's random opinions slow this down.

Comment 65

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Katherine Dunham

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments:

I am very excited about the park and I am very happy about the upcoming work and have no concerns. Thank you

Comment 66

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: JEROME MATTHEWS

Agency or Organization (if applicable): _____

Address: [redacted]

Phone: _____

Email: _____

Comments: My family wholeheartedly supports this project - indeed we feel it's long overdue.

Comment 67

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Lisa Sharp

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: I am thrilled to learn this project will develop public-facing amenities and useful spaces!

Comment 68

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Marcello Molinaro

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: This seems like a great idea! Good luck and Thank You!

Comment 69

From: MORI COSTANTINO
To: Dong, Yang@DTSC
Subject: Santa Fe ROW Berkeley Decontamination
Date: Sunday, September 7, 2025 11:41:47 AM

This Message Is From an Untrusted Sender
You have not previously corresponded with this sender.

Report Suspicious

Dear Mr. Dong,
I live at [redacted] in Berkeley.
Both the 2400 block of Valley street and West street were squared off and sold to the neighbors adjacent to the Santa Fe Right of Way. Also, neighbors on the 2300 block of West street also squared off their lots with the Santa Fe ROW.

After seeing that the Santa Fe ROW from Blake street to Ward Street are being decontaminated for arsenic, lead, mercury, we are all concerned if our properties are also contaminated. Since many of us have gardens, this is a big concern. Also, there is a community garden in the ROW between Bancroft and Channing. Is this area also contaminated?

Please keep me in the loop concerning the Blake to Ward street cleanup and also let me know if the rest of the Right of Way is also in need of testing and decontamination.

Thank you for your attention to this matter.
-mori costantino

Comment 70

From: Carole Krezman
To: Dong, Yang@DTSC
Subject: Santa Fe row
Date: Sunday, August 24, 2025 10:58:55 AM

This Message Is From an Untrusted Sender
You have not previously corresponded with this sender.

Report Suspicious

Not a public comment, just a question I've had for years:

Have you run across any info on what type of heavy metal clean up was done on the Santa Fe trackway where Berkeley built the low income housing on what is now Sojourner Truth Ct? I haven't been able to find anything in writing.

I'm aware this question is outside your project parameters, and I have no intention of raising a fuss, I'm just wondering whether to let my kid plant a fruit tree.

Thanks for your attention,

Carole Krezman
[redacted]

Comment 71

From: Pauline Sobel
To: Dong, Yang@DTSC
Cc: Gilstrap, Danielle@DTSC
Subject: Berkeley Santa Fe Trackbed to Park
Date: Friday, August 15, 2025 11:34:38 PM

This Message Is From an Untrusted Sender
You have not previously corresponded with this sender.

Report Suspicious

Hello,

I live at [redacted] in Berkeley. What kinds of adverse health effects would someone who lives near a site contaminated by arsenic, lead, and mercury be experiencing? And what are the dangers to nearby residents of developing the land? Thank you.

Pauline Sobel
Sent from my iPhone

Comment 72

From: Groovy
To: Dong, Yang@DTSC
Subject: Santa Fe Trackbed - Comment
Date: Friday, August 15, 2025 9:09:54 AM

Good Morning,

I'd like to comment on the Santa Fe Trackbed project - I have read the site investigation report briefly and also this recent public FAQ. Here are my questions/comments:

- I understand that you're going to dig out 6 feet of soil throughout each parcel - correct? Or will it depend on each parcel's future use?
- Why do you need to dig so deep? If the contamination is at the surface, and the future use doesn't include digging in the ground, wouldn't digging 2-3 feet make more sense? I'm just concerned about the cost and schedule for disposing of soil. Disposal just means taking the soil somewhere else.
- What is the schedule for cleanup and development?

Thanks,
-Tim Smith

Comment 73

From: Xi Aryail Ox
To: Dong, Yang@DTSC
Subject: Hazard waste clean
Date: Saturday, August 16, 2025 5:22:40 PM

This Message Is From an Untrusted Sender
You have not previously corresponded with this sender.

Report Suspicious

Hello, my name is Xi Aryail Ox I live at [redacted], Berkeley, CA 94702 Near the area that will be cleaned or proposed to be cleaned up. I am in agreement that the areas are correct when it comes to the history of the area. I am a resident and a registered voter, who would like the area to be cleared of all harmful hazards in the area that is being presented.

Sincerely yours,
Xi Aryail Ox
[redacted]

Comment 74

From: Jorge Rodriguez-Choi
To: Dong, Yang@DTSC
Subject: Santa Fe Trackbed to Park
Date: Monday, September 1, 2025 4:58:21 PM

This Message Is From an Untrusted Sender

You have not previously corresponded with this sender.

Report Suspicious

Dear Yang Dong,
I received the mailer regarding the proposed toxic clean up.
I fully support your efforts.
Regards,

Comment 75

From: Ilo Orleans
To: Dong, Yang@DTSC
Subject: Comment on hazardous waste cleanup on Santa Fe Railroad
Date: Friday, August 22, 2025 1:14:50 PM

This Message Is From an Untrusted Sender
You have not previously corresponded with this sender.

Report Suspicious

Happy Friday Yang Dong,

We live at [redacted], CA 94702 and are THRILLED there is movement and progress on the Santa Fe Railroad project.

We've been in the neighborhood since 2009 and deeply appreciate the thoughtful approach to turning the Santa Fe Trackbed into public space. Thanks so much to you and your team for the hard work and keeping us up to date on next steps.

Thanks again and have a good weekend!

Respectfully,
Ilo Orleans & Lou LaGrange

Ilo Orleans
[redacted]

Comment 76

From: Talya Brettler
To: Dong, Yang@DTSC
Subject: Request for public hearing for Berkeley Santa Fe Trackbed
Date: Tuesday, August 19, 2025 6:27:35 PM

It seems there are further dust control strategies that could be implemented during site excavation in order to protect nearby neighbors. Safety of the neighborhood should be the most important consideration.

Thanks,
Talya Brettler, MD, MPH
[redacted]

Comment 77

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Anushka Drescher

Agency or Or[redacted]

Address: [redacted]

Phone: [redacted]

Email: [redacted]

Comments: I would appreciate if you could pass on to the planners for the later use of the park that they consider providing space in this park for beneficial wildlife as well, e.g nest boxes for birds, bats, owls etc, and places for wild bees and other CA insects as well as reptiles and amphibians.

Humans keep using so much space just for themselves. Let's leave habitat for our fellow species as well!

Thank you! ♡

Comment 78

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Karen Rothblatt

Agency or Organization (if applicable): _____

Address: [redacted]

Phone: [redacted]

Email: [redacted]

Comments:

(1.) We would like to know where the toxic soil that is being removed will go.

(2.) What is the nature of the foam being used? Is it toxic? (i.e: Foam used by Fire departments kills fish when it gets into the waterways)

(3)

Comment on hazardous waste cleanup in your neighborhood

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Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Ken Marx

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: Sorry - too little, too late. But it sounds wonderful!

Comment 80

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: _____

Agency or Organization (if applicable): _____

Address: _____

Phone: RECEIVED LETTER ON 9/23

Email: _____

Comments: _____

Comment on hazardous waste cleanup in your neighborhood

You can use this form to mail us your comments on the project. **Make sure you send your comment by Tuesday, September 16, 2025.** Mail the form to:

Yang Dong, Project Manager
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Public comment form

Name: Karla James

Agency or Organization (if applicable):

Address: [redacted]

Phone:

Email:

Comments: I'm concerned about the truck traffic through the neighborhood. I'm concerned that the trucks will ~~future~~ further errode the condition of the roads. Trucks over a ~~certain~~ certain weight limit are not allowed on Carleton Street But because it is one of the few through Streets, I afraid the trucks will use Carleton anyway. I'm also concerned about pedestrian safety because of the increased truck traffic.

I'm hoping when this project is over ~~the~~ sidewalk will be added to Ajax Street between Carleton and Parker ~~will be added~~, since there currently is not any.

I'm super excited about this project & fully support it. Long over-due.

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX I

DTSC Approval Letter and Notice of Exemption

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Katherine M. Butler, MPH, Director
8800 Cal Center Drive
Sacramento, California 95826-3200
https://dtsc.ca.gov/

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

October 31, 2025

Stacey Rutherford
City of Berkeley
Department of Parks, Recreation, and Waterfront
1947 Center Street, 5th Floor
Berkeley, California 94704
srutherford@berkeleyca.gov

FINAL REMOVAL ACTION WORKPLAN, SANTA FE TRACKBED TO PARK PROPERTY, BERKELEY, ALAMEDA COUNTY, CALIFORNIA, October 2025

Dear Ms. Rutherford:

The Department of Toxic Substances Control (DTSC) has completed its review of the Final Removal Action Workplan (RAW), dated on October 29, 2025, for the Santa Fe Trackbed To Park Property (Site), located at the Blake to Ward Along Acton Street, Berkeley, California. The Site encompasses approximately 1.32 acres and is bordered by residential properties. The Final RAW was prepared by GSI Environmental Inc. on behalf of the City of Berkeley Department of Parks, Recreation, and Waterfront (City) and was submitted under the Standard Voluntary Agreement (HSA-FY22/23-069).

The Site is currently vacant land that was historically the Santa Fe Railroad right-of-way (ROW). The Site is approximately 1.32 acres in size and is bordered by residential properties. The owner of the Site, the City is planning to redevelop it into a community garden, dog park, and children's play area. An initial soil investigation was conducted in July 2022, and subsequent sampling occurred in January and April 2024 to confirm the vertical and horizontal extent of the contaminants of concern (COCs), including Arsenic, Lead, Mercury, Pesticides, Total Petroleum Hydrocarbons (TPH), and Polycyclic Aromatic Hydrocarbons (PAHs), throughout the site. TPH and Pesticides were not detected at concentrations exceeding human health screening criteria in any

samples. The approximate contamination depth is estimated to be 6 feet below the ground surface in some areas. On September 23, 2024, DTSC approved the final additional investigation report (GSI., September 9, 2024).

The RAW identifies four alternatives for remediating or mitigating the impacted soil at the Site: (1) No Further action, (2) Soil Excavation and Offsite Disposal, (3) Soil Excavation, Off-Site Disposal, and (4) On-Site Containment, Capping in Place. The RAW proposes excavating up to two-six feet of contaminated soil - approximately 6495 tons- and transporting offsite disposal to accommodate residential use, with the cleanup goals being the residential screening level of 80 mg/kg for lead, 0.67 mg/kg for mercury , background threshold value of 11.0 milligrams per kilogram (mg/kg) for arsenic and Benzo(a)pyrene (BaP) equivalent value of 0.9 mg/kg for PAHs.

DTSC issued the conditional approve letter for the Draft Final RAW on August 13, 2025 and subsequently conducted a 30-day public comment period to solicit input from the community. The comment period started on August 18, 2025, and concluded on September 16, 2025. A display advertisement appeared in the local newspaper announcing the public comment period and a document repository was established to provide public access to the major project documents, including the Draft RAW.

Following the public comment period, on October 29, 2025, DTSC prepared the Response Summary letter to respond to all comments DTSC received during the public comment period. In response to these comments, the Final RAW was revised to update the transportation route (Figures 9A and 9B) to avoid Dwight, Blake, Parker, and Carleton Streets, which are subject to a 3-ton vehicle restriction between Sacramento and San Pablo Streets. In addition, the Final RAW was revised to address comments provided by the DTSC Environmental Equity Office memorandum dated July 24, 2025. DTSC will also file the Notice of Exemption (NOE) to comply with the California Environmental Quality Act.

DTSC hereby approves the Final RAW. Please incorporate the updated Administrative Record, Responsiveness Summary with attachments and NOE with signature into Appendixes of the RAW.

Please provide an email copy to Yang.Dong@dtsc.ca.gov and mail a hardcopy, clean version to:

Yang Dong
Project Manager
Site Mitigation and Restoration Program
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826

If you have any questions, please contact Yang Dong at (916) 255-6607 or via email at Yang.Dong@dtsc.ca.gov to arrange a meeting promptly.

Sincerely,

Dominique Forrester

Dominique Forrester, P.E.
Branch Chief, Sacramento Office
Site Mitigation Restoration Program
Department of Toxic Substances Control

Enclosures: Notice of Exemption

cc: Evelyn Chan, Supervisor
City of Berkeley
echan@berkeleyca.gov

Jennifer P. Duffield, P.E.
Senior Associate Engineer, GSI
jpduffield@gsi-net.com

cc: (cont.)

Duane White, P.E.
Unit Chief - DTSC
Duane.White@dtsc.ca.gov

Yang Dong
Project Manager - DTSC
Yang.Dong@dtsc.ca.gov

Daniel Brannick
Senior Environmental Planner - DTSC
Daniel.Brannick@dtsc.ca.gov

CALIFORNIA ENVIRONMENTAL QUALITY ACT
NOTICE OF EXEMPTION

To: Office of Land Use and Climate
Innovation, State Clearinghouse
1400 Tenth Street, Room 212
Sacramento, CA 95812-3044

From: Department of Toxic Substances Control
Site Mitigation and Restoration Program
700 Heinz Avenue
Berkeley, CA 94710

Project Title: Berkeley Santa Fe Trackbed to Park Removal Action Workplan

Project Location: Blake Street to Ward Street along Acton Street, Berkeley, CA 94702

County: Alameda

Project Applicant: City of Berkeley

Approval Action Under Consideration by DTSC: Removal Action Workplan

Statutory Authority: California Health and Safety Code, Division 45

Project Description: The project consists of implementing a Removal Action Workplan (RAW) associated with the Berkeley Santa Fe Trackbed to Park Conversion Project being undertaken by the City of Berkeley's Department of Parks, Recreation, and Waterfront. The project is located on approximately 1.32 acres in Berkeley, California on four noncontiguous parcels identified as Alameda County Assessor Parcel Numbers (APNs) 54-1790-28, 54-1794-28, 54-1793-27, and 54-1735-20 (Site). The project includes the excavation and off-Site disposal of approximately 4,640 cubic yards (6,495 tons) of soil impacted with arsenic, mercury, and polycyclic aromatic hydrocarbons (PAHs) such that there are no future restrictions on development and Site use.

Background: The Site is currently vacant land that was historically part of the Santa Fe Railroad right-of-way (ROW). There are no buildings associated with the Site, and the Site surfaces consist of mostly uncovered soils. The Site is located within an urbanized area consisting primarily of residential development. The City of Berkeley plans to develop the Site into a recreational area which will include a community garden, dog park, children's play area, and teaching garden.

The City of Berkeley previously filed a Notice of Exemption for the Berkeley Santa Fe Trackbed-to-Park Conversion Project with the Alameda County Clerk-Recorder's Office in July 2021, which covered construction of a park, including gardens, a playground, dog park, pathways, and other related amenities at the Site. The current NOE covers remediation activities set forth in the RAW which were subsequently determined to be necessary for Site redevelopment.

Project Activities:

The activities set forth in the RAW consist of excavation and off-Site disposal of impacted soils. Excavation depths will range between 2 feet and 6 feet below ground surface (bgs) at the Site. In total, approximately 4,640 cubic yards (6,495 tons) of soil will be removed from the Site and transported to an appropriate, permitted off-site facility for disposal. A similar volume of clean backfill will be imported.

The RAW activities will be undertaken using conventional grading equipment, such as loaders, backhoes, and/or other appropriate equipment. Assuming each truck carries 18 tons, up to 357 truckloads will be required to transport the impacted soil.

It is anticipated that work will require approximately 3 to 5 weeks for completion. Sitework will be conducted on weekdays between 7:00AM and 5:00PM, unless otherwise required by a permit.

The RAW includes a Community Air Monitoring Plan (CAMP) to protect community health and ensure compliance with regulatory standards by minimizing the amount of fugitive emissions (i.e., dust) released during the removal action. The CAMP describes air monitoring protocols that must be

performed during soil activities when fugitive emissions could be released. These protocols are designed to protect the community and ensure that Site workers react quickly to make appropriate changes to emission control measures, as needed. The RAW also includes a Transportation Plan to minimize potential health safety, and environmental risks resulting from the movement of material and/or equipment during Site remediation. The Transportation Plan's truck route was selected in coordination with the City to minimize impacts on local traffic and sensitive receptors (e.g., schools, residential areas).

It is noted that the RAW includes an analysis assessing the air quality and greenhouse gas (GHG) emissions associated with remediation of the Site. Based on modeling for the project using CalEEMod, the project's emissions of criteria pollutants and GHGs are below applicable thresholds.

Although not anticipated, in the event subsurface cultural or historical resources are discovered in the course of project activities, work will be suspended while a qualified archaeologist or other cultural or historical specialist makes an assessment of the area and arrangements are made to protect or preserve any resources that are discovered. If human remains are discovered, no further disturbance will occur in the location where the remains are found, and the County Coroner will be notified pursuant to the Health and Safety Code, Chapter 2, Section 7050.5.

Name of Public Agency Approving Project: Department of Toxic Substances Control

Name of Person or Agency Carrying Out Project: City of Berkeley

Exempt Status: Common Sense Exemption [CCR Title 14, Sec. 15061(b)(3)]

Reasons Why Project is Exempt:

Based on information presented above as well as information contained in the RAW, DTSC has determined with certainty that there is no possibility that the activities in question may have a significant effect on the existing environment because the project would not result in "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

The administrative record for this project is available to the public by appointment at the following location:

Department of Toxic Substances Control
Site Mitigation and Restoration Program
700 Heinz Avenue
Berkeley, CA 94710

Additional project information is available on EnviroStor:
https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60003466

Contact Person	Contact Title	Phone Number
Yang Dong	Project Manager	(916) 255-6607

Approver's Signature:

Date: 10/31/2025

Dominique Forrester

Click or tap to enter a date.

Approver's Name	Title	Approver's Phone Number
Dominique Forrester	Branch Chief	(916) 255-3613