AMENDMENT TO
OPERATIONS AND MAINTENANCE PLAN
SOUTH TACOMA FIELD SITE

SOIL MANAGEMENT PLAN FOR
PROPERTY REDEVELOPMENT

South Tacoma Field Site

South 56th Street and South Burlington Way
Tacoma, Washington

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ABBREVIATIONS AND ACRONYMS

Abbreviation/ Acronym	Definition
BMPs	Best management practices
BNSF	Burlington Northern Santa Fe Railroad
COC	Contaminant of concern
cPAHs	Carcinogenic polycyclic aromatic hydrocarbons
DDC	Deep dynamic compaction
EPA	U.S. Environmental Protection Agency
HAZWOPER	Hazardous Waste Operations and Emergency Response
IEA	Initial exposure assessment
mg/kg	Milligrams per kilogram
MTCA	Model Toxics Control Act
NPL	National Priorities List
O&M	Operations and maintenance
OU	Operable Unit
PCBs	Polychlorinated biphenyls
PLPs	Potentially liable parties
PPE	Personal protective equipment
RAO	Remedial action objectives
RAR	Remedial Action Report
RI	Remedial investigation
RI/FS	Remedial Investigation and Feasibility Study
SDICP	Site Development and Institutional Controls Plan
SMP	Soil Management Plan
STF	South Tacoma Fields
SVOCs	Semivolatile organic compounds
TESC	Temporary Erosion and Sediment Control
TPH	Total petroleum hydrocarbons
TRC	TRC Environmental Corporation
UST	Underground storage tank
VOCs	Volatile organic compounds
WAC	Washington Administrative Code

1.0 INTRODUCTION

On behalf of Bridge Point Tacoma LLC (Bridge), TRC Environmental Corporation (TRC) has prepared this Amendment to the Operation and Maintenance (O&M) Plan (Kennedy/Jenks 2000) for the South Tacoma Field Superfund Site located north of the intersection of South 56th Street and South Burlington Way in Tacoma, Washington. The original O&M Plan was prepared by Burlington Northern Santa Fe Railway Company (BNSF) to address the requirements of the *Record of Decision, Commencement Bay, South Tacoma Channel, South Tacoma Field Operable Unit* (ROD; EPA 1994) and the *Consent Decree/Statement of Work for the Remedial Design and Remedial Action at the South Tacoma Field Operable Unit of the Commencement Bay South Tacoma Channel Superfund Site* (Consent Decree; EPA 1996). The South Tacoma Field Site (Site) is Operable Unit (OU) 3 of the larger South Tacoma Channel Superfund Site. The Site location is indicted on Figure 1.

The existing O&M Plan presents important considerations that were developed to maintain protectiveness at the Site in its current condition. The fundamental objectives of the O&M Plan are to address the routine O&M procedures to be followed, memorialize modifications or corrective actions undertaken at the Site to maintain protectiveness, and provide reporting requirements and administrative duties to be followed. This Amendment to the O&M Plan will continue to address those objectives during the implementation of the planned property redevelopment. After completion of the redevelopment, the environmental covenants will be updated to reflect the then-current conditions and will include additional updates to the O&M Plan for maintaining the protectiveness of the redeveloped property.

This document has been prepared in support of a planned redevelopment of 150 acres (Project Area) of the larger approximately 260-acre OU 3. The Project Area is indicated on Figure 2. Bridge currently intends to complete its purchase of the Project Area from BNSF and redevelop it as warehousing and associated parking. This amendment to the O&M Plan presents a *Soil Management Plan* (SMP) for the property redevelopment that is focused on a portion of the Site that is currently solely owned by BNSF. BNSF participated in the development of this plan and was provided a copy of the SMP prior to submission to EPA.

This SMP covers work proposed by Bridge and addresses contaminated soils remaining on-the Project Area that will be safely relocated (excavated and placed beneath buildings, parking lots, roadways, and rights of way) and or otherwise covered with asphalt and concrete to maintain the protectiveness of the cleanup remedy previously completed by BNSF and approved by EPA. This amendment to the O&M Plan will demonstrate how the planned redevelopment will comply with the provisions of the existing O&M Plan, will continue to meet the Remedial Action Objectives (RAOs), and will in all other respects comply with the provisions of the existing ROD and Consent Decree.

This amendment to the O&M Plan is being submitted to the U.S. Environmental Protection Agency (EPA) in support of a request for a Comfort Letter confirming that the planned redevelopment actions are consistent with the O&M Plan and that the completed development will be consistent

with the RAOs for the original remedial action and will continue to be as, or more, protective of human health and the environment than the originally completed remedial action.

This amendment has been prepared in consultation with EPA. EPA has indicated that the Project Area is considered within the Area of Contamination (AOC) for the completed remedial action and that residual controlled impacts currently present on the Project Area may continue to remain on, within, and beneath the Project Area during and after the redevelopment with the provision that the completed project continues to meet the RAOs for the OU and under the same or other appropriate environmental covenants currently in effect under the ROD and Consent Decree. As discussed in additional detail below, this goal will be met through further consolidation and isolation of the residual impacts and construction of an engineered asphalt and concrete cover above all remaining impacted soils. An amended O&M Plan for the site will be submitted to EPA after the property development is complete and a new environmental covenant has been prepared.

With the submission of this amendment to the O&M Plan, Bridge respectfully requests that EPA provide a Comfort Letter confirming that the proposed actions are consistent with the ROD and Consent Decree and that, if implemented, the OU for the Project Area will remain delisted from the National Priorities List (NPL). Bridge will prepare or share any additional necessary plans that may be required or requested by EPA.

1.1 Substantive Requirements

The ROD, O&M Plan, and Consent Decree contain certain conditions that must be met relative to the maintenance and redevelopment of the Site. Those conditions and how they will be met by this SMP are discussed below.

1.1.1 The Record of Decision (ROD)

The ROD presented the nature and extent of contamination, identified and finalized contaminants of concern (COCs), summarized the Site's environmental risks, provided a description and comparative analysis of the selected remedial alternatives for each area of the Site and listed the statutory determinations and requirements for the selected alternative. The ROD focused on protecting human health and the environment by limiting exposure risks through the reduction of toxicity, mobility and volume(s) of contaminated soils through focused treatment and containment.

This plan will help meet those objectives by, focusing on containment and monitoring of the impacted soils, further limiting and reducing the mobility of any remaining contaminants, and limiting short-term and long-term exposure risks during the execution of the proposed work. As noted above, the post-development O&M Plan to support the revised environmental covenant will also address these objectives through the continued inspection and maintenance of the newly constructed asphalt and concrete covers.

1.1.2 Consent Decree

The Consent Decree provided legally binding technical and fiduciary obligations of potentially liable parties (PLPs), the State of Washington (Washington State Department of Ecology), and the EPA for the continued funding and cleanup of the Site. The Consent Decree provided a schedule for completion of specific milestones and expectations for the management and completion of those milestones.

This plan aims to maintain the overall intent of the Consent Decree by maintaining the specific technical obligations of the decree and maintaining appropriate avenues of public communication between the State, EPA ,and PLPs.

1.1.3 O&M Plan

As stated above, the fundamental objectives of the O&M Plan were to address the routine O&M procedures to be followed for the completed remedial actions, present modifications or corrective actions to be conducted at the Site, and provide reporting requirements and administrative duties to be followed.

This plan will continue to meet the same objectives presented in the O&M Plan by substantially decreasing the overall footprint of the impacted areas and consolidating accessible impacted soils beneath an engineered asphalt or concrete cover. Furthermore, the engineered asphalt and concrete covers are substantially more protective than the current soil covers and institutional controls.

1.2 Organization of Plan

This SMP is organized as follows:

- **Section 2.0 – Site Background and Regulatory Framework:** Presents a general history and background of the Site, the regulatory framework under which past work and the proposed current work will be conducted and general descriptions of Project Area conditions and planned processes.

- **Section 3.0** – **Media Management**: Presents the methodologies to be followed during the earthwork phases. Provides descriptions of the physical work to be performed during relocation and covering of contaminated soils within the Project Area.

- **Section 4.0 – Health and Safety**: Provides an overview of the Health and Safety Plan included in its entirety as Appendix A of this document.

- **Section 5.0 – Dust Monitoring and Mitigation**: Provides a comprehensive plan for monitoring the air during work for off-property emissions or for exposures by workers

- **Section 6.0 – Reporting**: Describes the reporting requirements that will be necessary to fully document and comply with the provisions of the SDIC.

- **Section 7.0 – Recordkeeping Requirements**: Lists the documents and procedures that will be required to document the continued performance of the engineered cover.

- **Section 8.0 – References**: Lists references used in the development of this plan.

2.0 SITE BACKGROUND AND REGULATORY FRAMEWORK

The Site has undergone extensive investigation and remediation under a ROD and Consent Decree with EPA. Substantial documentation exists for this prior work. Historical reports for the Site include, but are not limited to the following:

- Record of Decision, Commencement Bay South Tacoma Channel, South Tacoma Field Operable Unit, dated 1994, by EPA.

- South Tacoma Field Consent Decree, dated 1996, by EPA.

- *Remedial Investigation Report*, Volumes 1 through 6, dated February 1993, by Kennedy/Jenks Consultants.

- *Feasibility Study Report*, dated April 1994, by Kennedy/Jenks Consultants.

- *Final Remedial Design Report*, dated February 1998, by Kennedy/Jenks Consultants.

- *Remedial Action Work Plan*, dated April 1998, by Kennedy/Jenks Consultants.

- Remedial Action Management Plan for Site Remediation, dated June 24, 1998, by RCI Environmental Inc.

- *Operation and Maintenance Plan*, dated March 2000 by Kennedy/Jenks Consultants.

- *Site Development and Institutional Controls Plan* (draft), dated March 2000, by Kennedy/Jenks Consultants.

- *Remedial Action Report*, dated March 2000, by Kennedy/Jenks Consultants.

- *Site Development and Institutional Controls Plan for Properties under a Restrictive Covenant, South Tacoma Field*, periodically updated through June 2, 2020, by Kennedy/Jenks Consultants.

EPA and the Bridge team have had numerous communications with EPA regarding the intent of this work, the known environmental risks, and the general plan for redevelopment. The content of this document was discussed in a video call on April 30, 2021 between the Bridge team and senior EPA staff including Ms. Piper Peterson, Mr. Jeff Philip, and Mr. Ted Yackulic. Separate communications are ongoing with BNSF regarding this SMP.

A prior draft version of this SMP was sent to EPA on July 16, 2021 for review and comment. Bridge received written follow-up comments from EPA on August 11, 2021 from Ms. Peterson. The contents of this revised plan responds to and addresses EPAs comments.

The Site has undergone a full Remedial Investigation / Feasibility Study (RI/FS) and completion of remedial actions under the ROD. The remedial actions began in June 1998 and were completed in July 1999. The remedial actions were documented in the *Remedial Action Report* (Kennedy/Jenks 2000). As a result of the remedial actions and subsequent post-closure groundwater monitoring, the OU has been de-listed from the NPL.

The remedial action focused on remediating surface and subsurface soil containing the following COCs:

- Arsenic
- Copper
- Lead
- Zinc
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs)
- Polychlorinated biphenyls (PCBs)

The remedial action as it related to the Project Area involved four primary components.

The first component included “hot spot” remediation consisting of excavation, treatment, and covering of 6,300 tons of highly contaminated soil (Figures 2 and 3 in orange). Treated and consolidated soils were placed on the prior ground surface with a general thickness of about 4 to 5 feet. These treated soils were covered with 1 foot of clean soil.

Soil with COC concentrations exceeding the following was targeted for treatment:

- Arsenic at greater than 570 milligrams/kilogram (mg/kg)
- Lead at greater than 18,000 mg/kg
- cPAHs (total) at greater than 50 mg/kg
- PCBs (total) at greater than 50 mg/kg
- Copper at greater than 45,000 mg/kg

These soils were placed in the northern portion of the Site over an area of impacted surface soils referred to as the BNSF Dismantling Yard. The approximately location of these treated soils is indicated on Figure 2.

The second component consisted of excavation, consolidation and covering approximately 113,000 tons of contaminated soil, with 93,000 tons placed in the BNSF Dismantling Yard of an approximately 12-acre area, as indicated on Figure 2. The remaining consolidated soils are not

within the Project Area. Soil with COC concentrations in the following ranges was targeted for excavation and consolidation:

- Arsenic between 200 mg/kg and 570 mg/kg
- Lead between 1,000 mg/kg and 18,000 mg/kg
- cPAHs (total) between 20 mg/kg and 50 mg/kg
- PCBs (total) between 10 mg/kg and 50 mg/kg

Both the treated hot spot soils and the excavated and consolidated soils were placed on the underlying BNSF Dismantling Yard surface and range in thickness from about 1 to 6 feet. These soils were then covered with 1 foot of clean soil. This area is approximately 12 acres in total area and is indicated on Figure 3.

The third component included placing a 1-foot soil cover over isolated areas of impacted soil with concentrations exceeding the covering levels described above, but which could not be cost-effectively excavated and consolidated. Those isolated locations are indicated on Figure 2 in "blue".

The fourth component included placing an environmental covenant on areas of the Site containing COCs at concentrations greater than applicable residential cleanup levels but less than the covering levels described above. The two primary COCs driving the need for this fourth component were arsenic and lead. For arsenic, soil with a concentration greater than 20 mg/kg and less than 200 mg/kg were subject to this requirement. For lead, soil with a concentration greater than 250 mg/kg and less than 1,000 mg/kg were subject to this requirement. Figure 2 depicts the areas of the Site in yellow meeting those requirements.

The third and fourth components of the remedial action include areas that were inaccessible at the time and/or were adjacent to wetlands. Some portions of these areas are within the current wetland buffers and cannot be addressed as part of this SMP. Further descriptions below of redevelopment actions and scraping and consolidation of impacted soils can only apply to areas outside of the current wetland buffers. Impacted soils within the wetland buffers will remain as they were at the completion of the original remedial action for the Site.

As documented by BNSF and as accepted by EPA, the remedial action was deemed to be in accordance with the *Final Remedial Design* (Kennedy/Jenks 1998) and the *Remedial Action Work Plan* (Kennedy/Jenks 1998). This approval is confirmed by the acceptance of the final reports by EPA and the delisting of the OU from the NPL.

2.1 Remedial Action Objectives

As expressed in the fourth Five-Year Review Report (EPA 2013) the RAOs for the OU are stated as follows:

- The objective of the subsurface soil cleanup goals is to prevent further groundwater contamination.

- The objective of the groundwater cleanup goals is to reduce total excess cancer risk from all carcinogens to no greater than 1 in 100,000 (10^{-5}) and a Hazard Index that will not exceed 1.

As noted above, with the acceptance of the completed *Remedial Action Report* submitted in March of 2000, the delisting of OU3 on June 5, 2002, and EPA's November 6, 2019 letter titled "Corrected Groundwater Attainment Analysis and Modification to Sampling Requirements," accepting that groundwater within the Project Area is not impacted, the RAOs have been met.

The RAOs have been met with a combination of soil treatment and placement of a soil cover over areas of residual elevated concentrations. The remedial action has relied primarily on a combination of soil cover over more impacted materials and the use of institutional controls. The covered soils are within 1 foot of the surface beneath a permeable soil cover and surface vegetation.

Additionally, the ongoing monitoring and periodic reviews by EPA have confirmed that the completed actions remain protective of human health and the environment.

The intent of soil handling during redevelopment is to consolidate and/or cover, to the maximum extent possible, all impacted soils within the Project Area with concrete and asphalt. As described in additional detail below, the planned activities at the Project Area will include the placement of a cover comprising both asphalt and concrete over the entire area of formerly consolidated soils within the former BNSF Dismantling Yard, including previously treated soils (6,300 tons) and consolidated impacted soils (93,000 tons). The planned activities within the Project Area also include the scraping of all remaining impacted soils from throughout the Project Area and placement of those soils beneath the to-be-constructed buildings. The minor exception to this statement is that impacted soils currently located within the wetland buffer will remain in place and subject to environmental covenants as is the current condition.

The completed redevelopment of the Project Area will result in continued isolation of all contaminated material on the Site and placement of a significantly more robust and engineered cover, which is significantly less permeable than the current soil cover and much more protective of potential exposure than simple environmental covenants and site access controls.. Furthermore, rather than being broadly distributed across the Project Area, impacted soils will also be consolidated and isolated. Additionally, due to the nature of the completed redevelopment, the cover will necessarily be maintained to insure continued functionality of the Project Area.

As a result of the redevelopment of the Project Area, all soil with impacts exceeding a residential land use cleanup level established under the Model Toxics Control Act Regulation ("MTCA," Washington Administrative Code [WAC] 173-340) will either be covered with asphalt or concrete. By definition, such a cover is more protective of all potential exposure pathways, including protection of groundwater quality as expressed in the RAOs, than the current soil cover and institutional controls.

Therefore, the redevelopment action will continue to meet the RAOs for the Project Area.

2.2 General Description of Redevelopment and Soil Handling

The Project Area is currently undeveloped containing only remnants of historical land uses. Those remnants include isolated concrete slabs associated with historical shops and some isolated areas of degraded asphalt cover. The remainder of the Project Area is either bare soil with local vegetation such as grasses, or small trees/shrubs.

The redevelopment will consist of converting the approximately 150-acre Project Area into 2.5 million square feet of warehouse space within four separate buildings. The remainder of the Project Area will be either covered with asphalt tractor and trailer parking, roadways, a stormwater overflow/detention pond, and minimal sidewalks and narrow landscaping strips. It is estimated that greater than 98 percent of the Project Area will be covered with either asphalt or concrete. The impacts at the Project Area have been well characterized through the RI process.

The redevelopment of the Project Area will result in an engineered asphalt or concrete cover over all soils with contaminant concentrations exceeding a residential cleanup standard. The minor exception to this is the small amount of impacted soils within the current wetland buffer that cannot be accessed or disturbed.

As noted above, the Project Area contains an area of approximately 93,000 cubic yards of contaminated soil and 6,300 cubic yards of contaminated and treated soil covered in an approximately 12-acre portion of the northern portion of the Site as indicated on Figure 2. The Project Area also contains a broad area (approximately 100 acres) of impacted near surface soil. As indicated in the RI, these impacts are limited to within the upper 1 foot of the surface. This broad area of impacts also contains isolated areas of soil with 1 foot of surface cover as indicated on Figure 3.

The redevelopment grades have been developed to create a cut and fill balance for the Project Area that requires neither import nor export of soils. The redevelopment has been planned to limit, to the maximum extent possible, contact with the most highly impacted soils in the northern portion of the Project Area. Of the 93,000 cubic yards of impacted soil in this area, it will only be necessary to excavate and relocated about 9,500 cubic yards to accommodate the construction of a truck loading dock on the east side of the Building A. Some minor amounts of soil may also be encountered during excavation of structural footings on the northern side of Building A, which is estimated at less than 3,500 cubic yards. These impacted soils will be placed beneath the floor of the southern portion of that building at a depth of at least 4 feet below the top of the finished floor. These soils will generally be excavated with track-mounted excavators and loaded into off-road trucks for placement in the target area. The soils will be placed and compacted as structural fill according to the recommendations of the geotechnical engineer.

Impacted soil that is more broadly distributed within the shallow soils in the Project Area will be consolidated beneath Building B. The calculated volume of impacted soil is about 150,000 cubic yards, which will be placed approximately 6 feet below the top of the finished floor. These soils will generally be removed using bulldozers and graders, loaded into off-road trucks and placed

within the containment cell beneath Building B. The soils will be compacted as structural fill according to the recommendations of the geotechnical engineer and covered with non-impacted soil from other areas of cut, which are below the 1-foot depth of contamination, based on the RI.

This SMP presents specific protocols for managing the known impacted soils that will be encountered during redevelopment activities and potential unknown sources for contamination such as underground storage tanks or debris piles, and presents the rationale for implementing those protocols.

These protocols consider known and reasonable exposure scenarios, are protective of human health and the environment, and are consistent with the planned future land use of the Site. The SMP identifies the specific risk management measures that will be implemented prior to, and during construction and have been prepared in general accordance with the requirements of MTCA and Ecology and EPA guidance and policy. This document will be used by contractors, subcontractors, and consultants during earth working activities at the site.

If unanticipated impacted soils are encountered during site development, as indicated by field observations such as discoloration, odors, debris, or other apparent wastes, sampling and analysis will be conducted. Sampling and analysis may consist of a broad suite of analytical parameters including volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), PCBs, PAHs, and metals. Sampling and analysis will be performed consistent with the practices and procedures presented herein and will be consistent with the requirements of MTCA and the EPA approved remedial action Quality Assurance Project Plan (QAPP).

During the redevelopment action, TRC representatives will be on-site to document soil handling and placement and the health and safety protocols used during the work. At the completion of all handling of impacted soil, a report documenting those actions will be prepared for Bridge and for submission to EPA.

2.3 Notification of Changed Conditions

The redevelopment plan presented herein represents Bridge's current projection of how the redevelopment will be completed based on current knowledge and feedback from the City of Tacoma and the redevelopment team. It is possible that the City of Tacoma or other permitting agency may impose additional requirements on the planned project that may require modifications to this SMP. Those modifications cannot be known at this time, but such modifications would not be expected to lessen or decrease the scope of protective mitigation measures set forth in this SMP.

To the extent possible, modifications to this SMP will not affect the means and methods to be used or ability to continue to meet the RAOs. EPA will be notified as soon as reasonably possible of any changed conditions that require substantive changes to the means and methods presented in this SMP. If substantive changes are required, an addendum to this SMP will be submitted to EPA for review and consideration.

Regardless of changes required by appropriate agencies, the substantive components of this SMP will include the following:

- Containment and covering of contaminated soils.
- Placement of asphalt or concrete covers over contaminated soils to the extent possible under the final development permit and other regulations.
- The use of appropriate health and safety protocols during redevelopment.

Any non-substantive changes to this plan necessitated by a permitting or other agency will be documented in the final report for submission to EPA.

In the unlikely event that substantive changes to the SMP are required, Bridge will notify EPA as soon as reasonably possible to discuss those changes and to confirm that they do not negatively affect Bridge's ability to meet the RAOs for the Site.

2.4 Roles and Responsibilities

The project organizational structure establishes the specific chain of command and specifies the overall responsibilities of supervisors and employees. The organizational structure shall be reviewed and updated as necessary to reflect the current status of site operations. The following will be the primary on-site contractors:

- EPA – the environmental regulatory agency of authority and grantor/administrator of the Consent Decree, ROD, and O&M Plans.

- Bridge – the prospective property buyer and Client to the following parties.

- Synthesis – Architects responsible for the final Site grades, structural design elements and final Site layout.

- Sierra Incorporated (Sierra) – the General Contractor overseeing the project.

- Hos Brothers (Hos) – the soil and utility Contractor performing demolition, site grading, excavation, filling, compacting and final surfacing.

- Terra Associates (Terra) – Geotechnical engineers responsible for monitoring geotechnical compaction requirements and consulting with Bridge on geoengineering support.

- TRC – Environmental consultant overseeing and documenting site safety and health procedures and placement of impacted soils.

Each contractor/consultant will be responsible for their specific tasks associated with the overall performance of the work. As field conditions change, each respective contractor or consultant will be informed, as necessary, and as it pertains to their specific function(s).

2.5 Site Description

The Site and Project Area are generally flat, with some slope to the west toward the former airport and lakebed and the current wetland and surface water drainage. The Site is generally fenced with restricted access.

All above grade structures in the Project Area have been removed and only isolated building footings and slabs remain. The balance of the Project Area is either bare soil or natural vegetation such as grasses and small shrubs. Isolated trees are located on the interior or the Project Area and near the surface water drainage on the western portion of the Project Area.

As detailed in the RI, the Site and Project Area have been used by BNSF and its predecessor as since as early as 1890 through the late 1970s for manufacturing, repair and dismantling of railcars. Some on-Site smelting and metals founding were performed but not within the Project Area. Those activities were limited to the Amsted Foundry property and the Griffin Wheel and Bearing operations, which are not a part of the Project Area and have been previously redeveloped.

As detailed in the *Remedial Action Report*, the remediation of the Project Area has been completed. This has resulted in excavation, consolidation and covering of approximately 93,000 cubic yards of contaminated soils on the northern portion of the Project Area. A portion of that soil (6,300 cubic yards) was treated prior to being consolidated and covered. Isolated areas within the interior of the Project Area also have 1 foot of soil cover with the remainder of the lower level contaminated soil addressed through the use of an environmental covenant and institutional controls. The area of consolidated soil and isolated areas of cover are indicated on Figure 3. These areas are also subject to institutional controls consisting of an environmental covenant that includes a requirement to maintain the cover and limit Site access.

2.6 Geology and Hydrogeology

The Site is in the southern portion of the Puget Sound Lowlands region, which is a broad glacial drift plain dissected by a network of multiple north-south trending embayments. The ground surface is generally characterized by a thick accumulation of Quaternary age sediment of glacial and alluvial origin. The shallowest naturally deposited sediments in this area are interlayered units of riverine, terrace, lacustrine, and fan deposits on top of recessional Pleistocene glacial deposits.

The Site sits atop the South Tacoma Channel, which has been interpreted as a historical drainage pathway for glacial meltwaters to Commencement Bay. The current wetland drainage and remains of the swamp/lakebed in the southwestern portion of the Site are remnants of this drainage feature.

Soil at the Site, down to the maximum depth of exploration, is generally a mixture of well- to poorly-sorted sands and gravels with some silts. These soils are generally well drained. The surface of the Site contains a thin layer of vegetation, topsoil, and sandy loam.

2.7 Previous Environmental Investigations

The Site has undergone substantial investigative and remedial work beginning in 1994. Numerous documents have been prepared and submitted to the EPA during the advancement of the Site investigation and cleanup work. The principal documents are referenced in Section 8.0 and the reviewer is directed to those documents for a detailed and chronological history of Site investigation and remediation.

2.8 Environmental Covenant

This SMP has been prepared in consideration of the *Site Development and Institutional Controls Plan for Properties Under a Restrictive Covenant (*SDICP), prepared by Kennedy Jenks, dated June 2, 2020. Section 3.1.1 of that document requires that advanced written notification is given to EPA prior to access to areas defined within the restrictive covenants, consistent with Section XXIV of the 1996 Consent Decree.

It is Bridge's intent to comply with all appropriate rules and regulations and to comply with the conditions of the SDICP during redevelopment. This SMP uses the SDICP as the basis for following the appropriate notifications to EPA prior to performing any on-Site work.

The information presented in this SMP will be shared with EPA prior to any redevelopment activities in order to obtain a "Comfort Letter" (or similar opinion or documentation) from EPA confirming that the SMP is consistent with the ROD, the environmental covenant, and any O&M Plans for the Site, and confirming that implementation of the SMP and redevelopment of the Project Area will not affect the current regulatory status of the Site. It is understood that it is Bridge's responsibility to ensure that these provisions are met.

In addition to the notification requirements discussed above, other agency notifications may be required. Prior to the initiation of construction activities that are covered under this SMP, the Owner will confirm the contact information listed below. An agency contact sheet will be provided to the General Contractor and posted in an accessible and suitable location at the Site.

Contact information for other agency notifications that may be required are provided below:

Table 1
Agency Notifications

Conditions Posing an Immediate Threat. For life-threatening or serous hazardous materials incidents, the following number will be contacted immediately upon discovery.	
Local police, fire, and rescue services	911
Releases to Surface Water. For spills or releases of hazardous substances or petroleum hydrocarbons to surface water, the following agencies will be contacted immediately upon discovery.	

National Spill Response Center	(800) 424-8802
United States Coast Guard – Puget Sound Sector (if spill may reach navigable waters)	206-217-6200
Local Emergency Response Agency	911

3.0 MEDIA MANAGEMENT

This section describes the appropriate risk management measures to be implemented to control potential impacts to human health and the environment during redevelopment activities.

Because the Site is considered a hazardous waste Site, all on-Site workers involved in the handling of contaminated soil will be required to have current Hazardous Waste Operations and Emergency Response (HAZWOPER) training and certification in compliance with 29 CFR 1910.120. This will include both professional service providers such as TRC personnel and equipment operators and laborers. Additional details regarding this requirement and the Site-specific health and safety plan (HASP) are presented in Appendix A.

Development activities at the Project Area that are likely to disturb soil will include various site preparation activities, including, but not limited to: site clearing, grading, grubbing, concrete/pavement demolition, excavation, stockpiling, trenching, backfilling and compacting.

Activities associated with construction and development that may have the potential to impact human health and/or the environment may include physical hazards associated with construction work, excavation, loading, moving, backfilling and compacting soils, fugitive dust, and off-Site transport of soil through surface water runoff from exposed surface soils and exposed stockpiles.

Based on the recently decommissioned groundwater monitoring wells at the Site, groundwater, may be present at depths between approximately 7 and 25 feet below ground surface, and is not expected to be encountered during construction activities in the Project Area. The local groundwater gradient is generally flat and the depth to groundwater is most closely related to surface elevation. Accordingly, the depths to groundwater are deeper in the eastern higher elevation portions of the property than in the far western portions of the Project Area nearest the wetland. Placement and consolidation of impacted soils will occur in the eastern portion of the Project Area.

3.1 Well Decommissioning

Prior to mobilizing equipment and materials, groundwater monitoring wells that currently exist within the Project Area will have been decommissioned by BNSF according to Ecology's Minimum Standards for the Construction and Maintenance of Wells, WAC 173-360. A total of 3 wells will be decommissioned, including the following wells: VMW-2, VMW-3, and NMW-17A1. Wells that are currently used to monitor conditions around the former Amsted and Pioneer Builders properties are not within the Project Area and will remain intact.

3.2 Mobilization

The contractor will mobilize the necessary personnel and equipment and will establish the necessary work zones to manage the known impacted areas with elevated lead. The creation of working hot zones, contaminant reduction (decontamination) zones and staging areas are discussed in greater detail in the HASP (Appendix A).

The contractor will mobilize to the Site prior to breaking ground and will set up the following features to support earthwork activities:

- Temporary mobile offices
- Communications, power, and water connections
- Materials and equipment staging area
- Erosion and sediment control features (silt fence, construction entrance, wheel wash)
- Portable restrooms
- Temporary lighting, as necessary
- Decontamination Zone (Warm Zone)

All construction-related setup will be conducted in advance of any clearing or grubbing operations to ensure proper containment methods will be sufficient in minimizing the potential for off-Site impacts during earthwork.

3.3 Erosion and Sediment Control

The redevelopment of the Project Area will be subject to a Construction General Permit that will include requirements for erosion and sediment control throughout the duration of the redevelopment. That plan will necessarily be compliant with all applicable regulations and subject to review and approval by the City of Tacoma and additional reviewing stakeholder.

There are not currently any stormwater catch basins within the Project Area. The Project Area and the completed redevelopment will not have any stormwater discharge as all stormwater will be infiltrated. Discussions with the City of Tacoma similarly indicate that stormwater runoff will not be allowed during the redevelopment actions. The Project Area and local soils are well drained and do not currently exhibit any discernable runoff or sheet flow.

During redevelopment, standard best management practices (BMPs) will be used as required by the Temporary Erosion and Stormwater Control (TESC) plan. The TESC is under development and will be submitted with appropriate permit applications to the City of Tacoma. The TESC can be provided to the EPA upon submission to the City of Tacoma. The BMPs will be upgraded and revised during the redevelopment action to assure that BMPs are maintained and effective.

Erosion and sediment control will include the management and mitigation of water and wind-blown sediment migration during and after construction.

In general, the entirety of the Project Area will be protected by placing silt fence around the perimeter of the areas to be disturbed. Straw waddle will be used to temporarily stabilize the areas that were disturbed during the installation of the silt fence to minimize sediment migration.

Erosion and sediment control measures will be upgraded as necessary to prevent the mobilization of soils during redevelopment activities. If the current BMPs being conducted are insufficient at preventing the mobilization of soils, additional BMP measures will be conducted to rectify the problem. Water spraying for dust suppression will be an ongoing component of this work as seasonally required. Maintaining adequate erosion and sediment control features will be a fundamental condition of this work.

Infiltration basins used to manage and infiltrate construction stormwater during the handling and placement of contaminated soils will generate sediments. Those sediments will need to be cleaned out at the completion of that phase of work. The sediments that exceed MTCA Method A cleanup levels (CULs) will be placed with the impacted soils that are consolidated beneath Building B.

Pre-settlement basins will be used to settle and collect sediments prior to on-property infiltration. Once pre-settlement basins exceed 1 foot of sediment on the bottom or sides, the sediments will be sampled to determine appropriate disposal options. One composite sediment sample will be collected for every 10 cubic yards of sediment generated and will be analyzed for total lead and arsenic. Sediments that exceed the residential MTCA Method A Soil CUL for either COC will be decanted free of water and mixed and consolidated into the waste soils placed beneath Building B.

In addition, the infiltrated water will accumulate some sediment on the ground surface from the unsettled suspended solids in the pre-settlement tanks. At the completion of the infiltration activities, these sediments will be addressed using the following procedures:

- Remove obvious fine sediment (anticipated to be generally less than 1 foot thick) down to the depth of original native soils);
- Collect soil samples at a frequency of 1 per 2,000 square feet and analyze for arsenic and lead;
- Remove any soils with concentrations exceeding MTCA Method A Soil CUL; and
- Collect and analyze confirmation soil samples to document compliance.

Sediments that exceed the MTCA Method A Soil CUL for either COC will be mixed and consolidated into the wastes placed beneath Building B.

At the completion of all handling of contaminated soils, the TESC and BMPs will be maintained as required by the permit and City of Tacoma, but will no longer need to consider the potential impacts associated with contaminate soil runoff and sedimentation.

3.4 Earthwork

Figure 2 presents the project layout. Building A and associated adjacent parking will be located in the northern area of the Site where the 93,000 cubic yards of previously consolidated contaminated soil is located. The grade for Building A has been adjusted to minimize the potential for construction to be encountered the under impacted material. Only an area on the east side of Building A will encounter the underlying contaminated material. This area is necessarily at a depth below the building finished floor to allow for construction of a truck loading dock. The impacted material excavated for that loading dock will be placed beneath the southern portion of Building A. The remainder of the consolidated soil will be undisturbed and will ultimately be beneath the Building A or the adjacent paved tractor and trailer parking.

All other impacted soil outside of the wetland buffer in the Project Area will be placed beneath Building B in a single consolidation cell. Portions of the Site outside of the Project Area will not be addressed as part of this SMP.

Appropriate public and private underground utility detection services will be performed at least 72 hours prior to breaking ground to mark and locate existing utilities. In addition, contractors will secure sources of water at various locations along the alignment for use in dust suppression and/or equipment decontamination activities. TRC personnel will monitor attendance of Site personnel as they enter and exit the Site, as necessary.

Earthwork and other related activities are discussed in detail in the following sections.

There are currently no above-ground existing structures within the Project Area. All waste materials that are generated during surface grading including asphalt, concrete, metal, rubber, cloth, plastic, or other materials that are not structurally suitable for re-use will be segregated and placed on plastic sheeting awaiting transportation off-Site for recycling and re-use, or for disposal, as appropriate. These materials are not considered contaminated.

The general strategy for earthwork during redevelopment is to minimize the disturbance of soils to the extent practical and to manage the soils on-Site to limit the potential for off-Site disposal. As noted, the current grading plan has a balanced cut and fill so that neither import nor export will be necessary. As such, there is not currently an intention to export any soils off-Site, either impacted or non-impacted.

Activities that have the potential to generate emissions in the form of fugitive dust or wheel tracking include the following activities:

- Demolition Activities – crushing of asphalt concrete for recycling/reuse and off-Site transport.
- Construction Traffic – Movement of construction equipment around the construction area in excavated or cleared areas. Vehicular traffic on unpaved roads.
- Preparation and Foundation Work – Grading, excavation of foundations and footings.

- Trenching Activities – Excavation of trenches for the installation of infiltration basins and underground utilities can cause fugitive dust emissions.

- Final Site Grading – Final elevation grading, backfilling, compacting, and paving operations.

Some of these activities such as foundation excavation, trenching, and final site grading will be performed only after all impacted soil has been consolidated and placed, with no potential for fugitive dust from impacted soils.

The potential for wheel tracking off-Site will be addressed through the placement of a rip-rap wheel wash at the exit of the Project Area. The wheel wash will be used to remove any residual impacted soils from the equipment prior to leaving the Project Area. The project will employ a "No Track Out" policy to ensure that impacted soils remain within the Project Area. The HASP includes additional decontamination procedures and project area control procedures to be followed to limit the inadvertent tracking of contaminated soils off-site or to other portions of the Project Area (Appendix A).

3.5 Project Area Control

Prior to disturbing any soils, the outer limits of existing contamination and excavation areas will be identified using GPS coordinates and GIS data. The outer limits of the consolidated soils will be identified in the field with orange color-coded stakes and/or orange flagging, and the areas identified as having impacts at concentrations above the industrial cleanup level(s) (Figure 2) will be identified with blue color-coded stakes, and/or blue flagging to notify all personnel on-Site as to the locations and hazards associated with those soils. Impacted locations (i.e., orange or blue demarcations) will be clearly identified to personnel, so that workers will know when they are working in contaminated areas that will require specialized handling and personnel protective equipment (PPE) provisions.

As described in the HASP, exclusion zones and contaminant reduction zones will be established for ingress and egress to those areas (Appendix A). The HASP contains a general Site figure that presents the proposed layout for establishing the various exclusion zones and support zones.

Routine surveying will be conducted throughout the duration of the project to ensure that grades and redevelopment goals are being met, to ensure that adequate excavation depth has been achieved in areas undergoing soil relocation, and to document when "clean", native soils have been encountered, which will not require relocation.

Once final grade elevations have been achieved in any particular location, surveyors will be utilized to confirm elevations in a minimum of one location for every 10,000 square feet of graded soil (approximately every 100-foot by 100-foot area) to ensure site grade control.

The ultimate locations of construction features such as the wetland buffer, containment cells, stormwater infiltration galleries, contaminated/covered soils and building features will be maintained through continued site control monitoring and surveying by a Washington-licensed surveyor.

3.6 Clearing and Grubbing

The initial phase of work will be collecting large debris such as concrete, metal wood, tires or other general debris and will brush off any soils. This phase will also include removal of remnant concrete foundation and building slabs. All such debris will be loaded onto trucks and hauled off-Site for disposal at the local transfer station as construction debris.

Debris removal will be followed by clearing and grubbing of near surface vegetation and organic matter. Site vegetation will be cut as close to the surface as possible using brush hogs or mowers in areas of heavy vegetation and other mechanical methods in areas of small trees and shrubs or bushes. Larger trees will be logged using appropriate methods.

Mowed or cut vegetation will be loaded onto trucks and hauled off-Site for disposal at the local transfer station as organic waste for recycling. Timber will be taken off-Site to local mills or other appropriate facilities for re-use.

Larger trees and brush are present throughout the Project Area where shallow contamination is known to exist. Trees will be felled, logged, and exported as clean debris. Stumps and root balls typically extend 3 feet or more into the subsurface and the deeper soils potentially attached to the root balls are not impacted. Therefore, it is unlikely any minor amount of soil retained on the root balls will be impacted.

Large root balls and stumps will be removed using excavators or similar methods. The loosely attached soil will be removed by shaking or other methods and left on-Site for inclusion under Building B. The root balls and stumps will then be shredded on-Site and the resulting chips and soil debris will be sampled and analyzed for lead and arsenic. One sample will be collected for every 20 cubic yards of material.

If contaminant concentrations of the shredded root balls and soil exceed a residential CUL, and if geotechnical information suggest that it is structurally suitable, the soils and shredded organic material may be placed under Building B. If this waste is structurally unsuitable and less than residential CULs, it may be disposed on-Site as clean vegetative debris and landscaping enhancement in unpaved areas. Selected materials may be used as a component of the wetland and habitat enhancements within the buffer.

3.7 Excavation and Grading

The redevelopment will generally progress from north to south. Equipment appropriate for the planned earthwork activity will be used including excavators, bulldozers, front-end loaders off-road trucks and bottom-dumps, depending upon the specific activity to be performed. Dust suppression and control will be performed using water trucks, hoses and sprayers, or other

equipment as necessary and appropriate. Excavated soil will be handled in a manner to limit the potential for fugitive dust generation (see Section 5.0 for dust control measures). As practicable, personnel will stand up-wind from earthwork operations to minimize exposures from windblown dust.

3.7.1 Scraping

Scraping will be conducted as the initial phase of Project Area redevelopment. The objective of scraping is to remove the upper 1 foot of impacted soil throughout the Project Area. This will generally be conducted in two phases. Figure 2 presents the extent of scraping and sequencing.

The first phase of scraping will include the southern end of Building A in preparation for placement of excavated material from the loading dock area at Building A (Figure 2). This material constitutes highly impacted, but untreated soil. Those scrapings will be moved to allow for placement of this material beneath Building A.

The second phase of scraping will include all other portions of the Project Area with soil impacted with concentrations greater than a residential CUL (Phase 2 scraping – Figure 2). The upper 1 foot of impacted soil in the area indicated on Figure 2 (2 feet in the two areas of covered soil) will be scraped and set aside for later placement beneath Building B (see below). The entire Phase 2 scraping (Figure 2) will be completed in a single mobilization.

All of the Phase 2 scraped soils will be placed within the cell beneath Building B (Figures 2 and 3). In total this will constitute about 150,000 cubic yards of soil over an area of about 92 acres (approximately 4,000,000 square feet). As noted on Figure 2, the areas to be scraped include locations that are not impacted, which will serve to further mix the concentrations within the consolidation cell. This dilution is unavoidable given the high cost of surgically removing only the areas of impacts indicated by the RI. The inclusion of these non-impacted soils within the cell does not negatively impact the ability of the redevelopment to meet the RAOs for the Site.

At the completion of all scraping and placement of all material under Buildings A and/or B, all soil beneath 1 foot will be considered non-impacted for the purposes of the redevelopment. This soil will be considered clean fill for use at the property. While there are some documented areas of deeper soil impacts in isolated areas of the Project Area, the documented concentrations only marginally exceed the CULfor lead and are very limited in extent. Give the volume of soils to be moved and handled, these limited quantities of impacted soils will be mixed with very large volumes of the surrounding non-impacted soils. This consideration, combined with the fact that 98 percent of the Project Area will be covered with asphalt or concrete, will continue to allow the Site to meet the RAOs.

It is not possible at this time to identify the exact staging and sequencing of scraping and soil placement. That level of construction sequencing is not currently available and is likely to change before the work can be initiated. Regardless of actual sequencing, the scraped soils will be handled and placed in accordance with the objectives and principles of this SMP. Final soil handling and staging will be documented in the project completion report.

3.7.2 Building A

Redevelopment will begin in the northernmost portion of the Project Area at Building A. The initial phase of work in this area will include compaction of the previously placed consolidated materials. These soils were not placed as structural fill and only limited data are available indicating the methods of placement and the relative compaction of the placed soils. Therefore, compaction throughout the approximately 12 acres of consolidated material will be necessary to support redevelopment and to limit the potential for differential settlement both beneath the building and within the large parking areas.

Compaction will be performed using Deep dynamic compaction (DDC). DDC will involve dropping an approximately 30-ton weight from a heigh of about 30 feet on approximately 12-foot centers across the area. It is currently anticipated that this will result in approximately 1 to 2 feet of compaction of the underlying soils.

Prior to DDC the surface of the consolidated area will be covered with about 12 to 18 inches of clean soil cover from other areas of the Project Area. Combined with the clean soil cover already on this area, this will result in about 24 to 30 inches of clean soil above the impacted soils prior to compaction. Combined with dust suppression measures such as water spraying prior to compaction, the potential for fugitive dust during DDC is extremely limited.

After completion of compaction, the area of the loading dock on the east side of Building A will be excavated, which will extend into the underlying consolidated and contaminated soil. It is estimated that approximately 13,000 cubic yards of material must be removed for the loading dock construction. As indicated on Figure 2, these soils will be placed beneath the southern portion of Building A. These soils will generally be placed in 12-inch thick lifts and appropriately compacted. Compaction testing using a nuclear density gage will be used to determine compliance with compaction specifications.

Clean soil from other portions of the Project Area will then be placed throughout the remainder of Building A and the adjacent parking areas to establish final grades. These soils will also be placed in appropriate lifts based on the geotechnical engineer's recommendations and compacted until the final site grade is established.

Figure 4 indicates the locations of three cross-sections through Building A. Figure 4 presents both a north-south and two east-west cross-section through building A illustrating the relative locations and depths of existing consolidated soils, the placement of the loading dock soils, the depth and location of overlying clean fill soils, and the final grade elevations. It must be noted that Building A has a sloped floor and that the finished floor elevation drops about 5 feet from north to south. This is possible due to the large size of the building (approximately 1,000 feet long). The use of a sloped floor allows Bridge to minimize the need to encounter the consolidated material.

3.7.3 Building B

Building B will be the largest of the four buildings in the Project Area. Building B will also be used to cover all of the remaining impacted soils within the Project Area. A containment area will be

excavated beneath the footprint of Building B, filled with the impacted soil, covered with clean fill, and then covered with the building floor.

Figures 5 and 6 illustrate the location of the containment cell beneath Building B and north-south and east-west cross-sections through the containment cell. The cell will be approximately 1,470 feet long by 580 feet wide with a bottom elevation of about 239 feet above mean sea level with impacted soil extending to an elevation of about 243 feet above mean sea level. This cell will place the top of the consolidated material approximately 7 feet below the bottom of the finished floor of Building B once accounting for the capillary break and other subgrade features. All four sidewalls of the consolidation cell will be graded at a 1.5-horizontal to 1-vertical slope to maintain worker entry and egress. The consolidation cell will constitute a volume of about 150,000 cubic yards of impacted soil.

The clean soil excavated at depth to create the containment cell will be used as clean fill on other portions of the Project Area such as beneath Building A or above the consolidation cell beneath Building B.

The impacted material will be placed in the consolidation cell in accordance with the geotechnical engineer's recommendation and tested for relative compaction. If compaction standards are unachievable, and where settlement and structural concerns are an issue, Portland Cement may be used as necessary to achieve the appropriate compaction standards.

3.8 Off-Site Disposal

There is currently no plan for disposing of any soils off-Site. However, in the event unexpected and unknown contaminants of concern are encountered, it may be prudent to send that material off-Site for proper disposal. This off-Site disposal would constitute a substantive change requiring EPA notification as soon as reasonably possible but prior to sending any material off-Site.

If unexpected impacted soil is encountered, the apparent impacts will be sampled and submitted for a broad scan of potential analytes. The target analytes would include:

- Gasoline and diesel-range petroleum hydrocarbons using the Northwest Total Petroleum Hydrocarbons Methods (NWTPH-Gx and NWTPH-Dx)
- VOCs using EPA Method 8260C
- SVOCs and PAHs using EPA Method 8270
- PCBs using EPA Method 8082A
- Priority Pollutant Metals (13) using appropriate SW-846 Methods

Depending on analytical results, Bridge will consult EPA regarding the identified material and arrange for the disposal of the material(s) in an EPA-authorized designated location. Impacted soil will be profiled for disposal according to applicable regulations and will carry any appropriate State or Federal Waste Codes. The following information will accompany any off-Site disposal of waste:

- Waste type
- Designated disposal facility name and location
- Waste profile number
- Bill-of-lading/Uniform Hazardous Waste Manifest number
- Date shipped
- Net shipping weight

All Bill of Lading/Uniform Hazardous Waste Manifest documents will require an owner representative to sign as the Generator. The driver will sign the shipping papers and a copy will be retained by TRC. These shipping papers will accompany the driver during transport to the disposal facility. Signed copies of all bill-of-lading/Uniform Hazardous Waste Manifest documents will be returned to the Site representative.

All off-Site waste disposal will be in accordance with applicable regulations.

3.9 Visual Indicator Installation

A visual indicator layer will be installed over the top of the relocated contaminated material beneath Buildings A and B prior to placing the final earthen cover. This indicator layer will be a visual indicator to future on-Site workers that the material below the indicator is contaminated and that certain health and safety precautions should be taken.

The visual indicator layer will consist of Marafi 150N or other similar geotextile.

3.10 Infiltration Basin Construction

As noted, all stormwater will be discharged from the completed development. This requires the construction of on-Site below-grade stormwater infiltration basins. The infiltration basins are located on the east and west sides of Building B in the location indicated on Figure 2, and as presented on the cross-sections (Figures 5 and 6). The completed project will also include a detention basin to serve as an overflow structure if the capacity of the infiltration basis is exceeded by a 100-year storm event.

The infiltration basins will receive all of the stormwater runoff from the on-property catch basins. The depth and horizontal separation of the infiltration basins from the consolidation cell beneath Building B will prevent contact between infiltrating precipitation and the consolidated soils. As indicated above, the sidewalls of the consolidation cell are on a 1.5 to 1 vertical to horizontal slope and are laterally separated from the infiltration basin by approximately 100 feet.

The infiltration basins are constructed of a free draining gravel such as pea gravel. The soil removed to construct the infiltration basins will be used as clean fill in other portions of the Project Area.

3.11 Import Soils

As stated, it is currently anticipated that the cut and fill for the Project Area will balance with no need for either import or export soils. However, if import soils are required, those soils will be tested at the source prior to being transported to the Project Area. Before accepting any soils for import, they will be tested for the following:

- TPH (by Methods WA-HCID and follow-up for NWTPH-Dx); no visual or olfactory evidence of staining or odors and concentrations less than 2,000 mg/kg
- Priority pollutant metals (by EPA Methods 6010, 6020 and 7471)
- Total PCBs (by EPA Method 8082), and
- SVOCs and PAHs (by EPA Method 8270).

No import material found to exceed the current residential cleanup standards established under MTCA for the analyte list above will be placed within the Project Area.

3.12 Groundwater

Groundwater is not a medium of concern based on current data and it is unlikely that groundwater will be encountered during construction. Current groundwater elevation data suggest that groundwater is considerably deeper than the proposed maximum depth of excavation, and therefore will not be encountered.

The current groundwater conditions were highlighted in the November 6, 2019 letter titled Corrected Groundwater Attainment Analysis and Modification to Sampling Requirements, prepared by the EPA and submitted to the property owners for the Amsted Industries property. This letter reflects the attainment of the groundwater quality standards, and further affirms that the groundwater beneath the Project Area is not a medium of concern.

3.13 Unforeseen Impacts

However unlikely, there remains the potential for unforeseen or unexpected conditions to be encountered during mass excavation. Any apparent impacts will be communicated by on-Site personnel to TRC's on-Site staff. The area of interest will be assessed and if appropriate sampled and characterized as discussed above in Section 3.8.

If remnant underground storage tanks (USTs) are encountered during excavation they will be addressed in accordance with local regulations and Ecology's *Guidance for Site Checks and Site*

Assessments for Underground Storage Tanks. USTs must be assessed by a Washington Licensed UST Assessor and decommission by a Washington Licensed UST Decommissioner. If a UST is encountered, it will be addressed in accordance with the requirements of MTCA and applicable and appropriate Ecology guidance. Any USTs encountered will be reported to EPA as a substantive change.

Any unforeseen impacts or unexpected conditions on-Site will be reported to EPA as soon as reasonably possible. If the identified material or conditions requires a substantive change to this SMP, such potential changes will be discussed with EPA and an addendum to the SMP may be prepared for EPA review and consideration.

3.14 Utility Work

Following completion of the re-location of contaminated soils to areas below Buildings A and B, utility installation work may be performed by non-HAZWOPER trained workers. A minimum 2-foot-thick engineered soil cover will be covering the contaminated soils preventing direct contact by Site workers during utility work. A proposed 24-inch-diameter sewer line will be installed in a west to east orientation between Buildings A and B as presented on Figure 2. This sewer line will be installed well above the relocated contaminated soils and will not require specialized handling or PPE, unless air monitoring data require it. Utilities will not be placed in the re-located treated or impacted consolidated soils.

Utilities servicing the proposed buildings will be routed through backfilled soils as appropriate, as long as there remains 2-feet of vertical separation from contaminated soils.

If modifications to the building design or utility plans necessitate work within contaminated soils, such actions will follow the general principles outlined in this SMP and will incorporate appropriate health and safety protocols necessary to protect workers and the public.

4.0 HEALTH AND SAFETY

The Project Area is considered a hazardous waste site and until work to consolidate and cover contaminated soils is complete, workers likely to encounter contaminated soil are subject to requirements of 29 CFR 1910.120 and will require current HAZWOPER training. TRC has developed a Site-specific HASP, which is included as Appendix A.

TRC will provide on-Site health and safety guidance on behalf of Bridge. The TRC/Bridge HASP will be maintained on-Site at all times.

The HASP will be provided to all on-Site subcontractors and their designated Safety Officer. Each subcontractor will be required to maintain their own HASP and all HASPs will be maintained on-Site.

5.0 DUST MONITORING AND MITIGATION

Work at the Project Area will be performed in a manner that is consistent with the Puget Sound Clean Air Agency's (PSCAA) Regulation I, Sections 9.11 and 9.15, respectively, whereby:

- *"It shall be unlawful for any person to cause or allow the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property, and*

- *It shall be unlawful for any person to cause or allow visible emissions of fugitive dust unless reasonable precautions are employed to minimize the emissions."*

The project development permits with the City of Tacoma will specify the necessary dust suppression and mitigation measure necessary to address nuisance dust during construction. This project will implement a "no visible dust" standard. If visible dust is witnessed during the course of the project, work will cease until the visible dust is eliminated through engineering controls. Section 11.0 of the HASP identifies the air monitoring plan and dust mitigation measures (Appendix A).

Additionally, while work proceeds within area of contaminated soil Bridge will maintain additional dust suppression measures and will conduct testing to assure that any airborne particulates do not represent potential impacts to on-Site workers or off-Site populations.

The dust and chemical action levels and suppression and mitigation measures are detailed in the HASP in Appendix A. Those measure include performance of an initial exposure assessment (IEA), personal air monitoring of selected personnel, and perimeter air monitoring. The reviewer is directed to the HASP for additional specific detail regarding the IEA, air monitoring and the action levels that will be used for nuisance dust and potential contaminants.

6.0 REPORTING

Following completion of the relocation and covering of restricted soils, Bridge will prepare an Amended O&M Manual in accordance with the requirements of Section 3.3 of the SDICP. The Amended O&M Manual will be specific to the Project Area and the Bridge redevelopment, but will not address the full Site. The Amended O&M Manual will document the work performed, present the current status of the Project Area and the location of any relocated soils, and will provide operational guidelines to be followed to maintain the integrity of the cover.

The Amended O&M Manual will include the specific requirements as defined under EPA guidelines for such documents and will follow the appropriate templates (if any). The O&M Manual and environmental covenant will include a survey of the locations of the consolidated soils.

It is also anticipated that the environmental covenant specific to the Project Area will be modified to reflect the post development conditions and will be recorded with the appropriate authorities.

After review and consideration by Bridge, the Amended O&M Manual will be provided to EPA.

7.0 RECORDKEEPING PROCEDURES

Recordkeeping and inspection procedures will be implemented to monitor compliance with the SDICP and the environmental covenant. TRCs primary responsibility will be to handle quality assurance and observe contractor's quality control practices through observing site development activities and taking photographs. TRC will maintain a written daily log that will provide detailed documentation of the work that will include the following:

- Personnel, materials, and equipment involved
- Site control measures conducted
- Excavation areas and soil placement
- Soil disposal documentation (if any)
- Dust control measures employed
- Use of PPE and confirmation with air sampling requirements

Records will be maintained in the on-Site project trailer and will be included as an attachment to the Amended O&M Manual. Bridge will maintain all project records for 7 years after completion of the project. These records will be provided to EPA upon their completion.

8.0 REFERENCES

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Figures

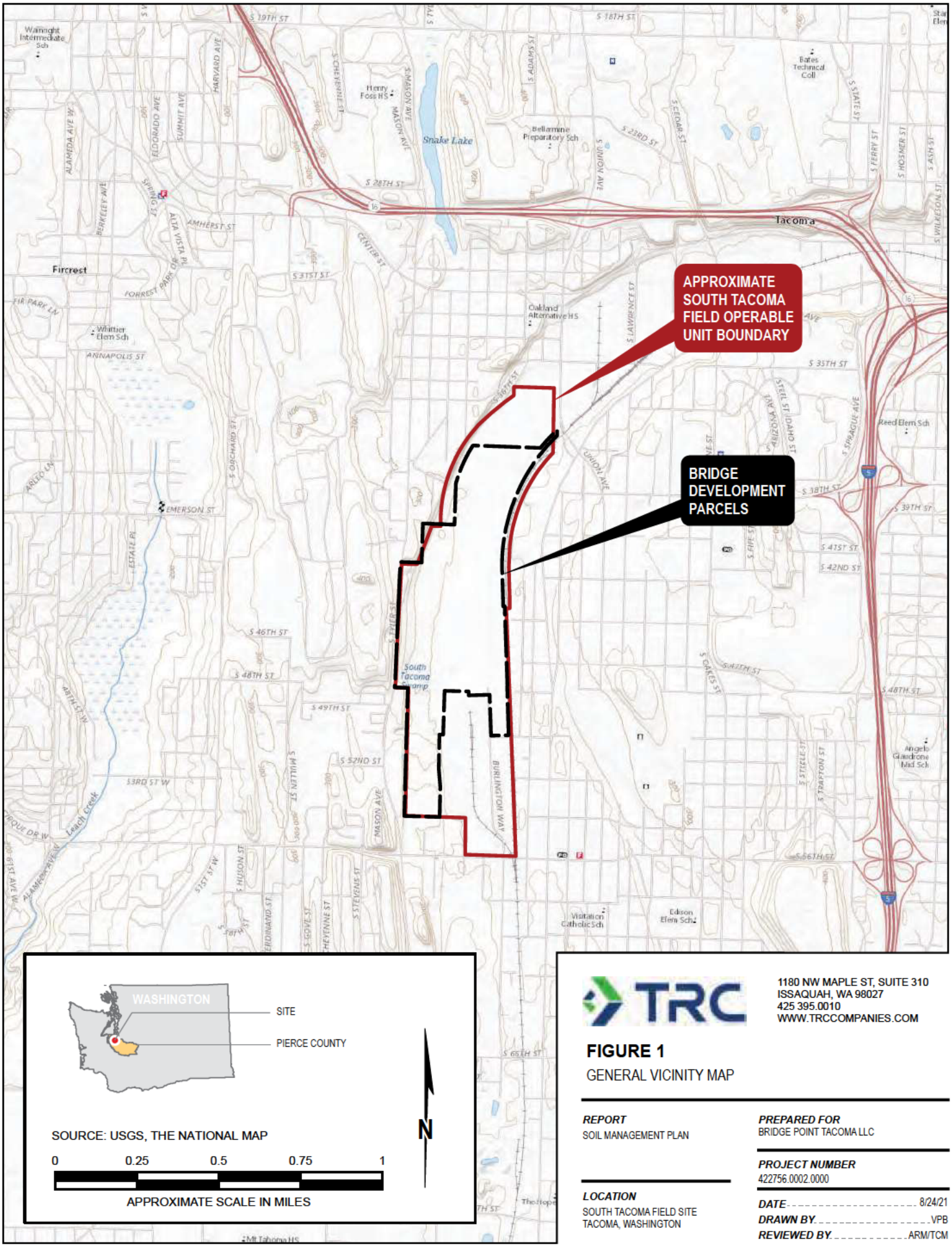

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FIGURE 1

GENERAL VICINITY MAP

REPORT
SOIL MANAGEMENT PLAN

PREPARED FOR
BRIDGE POINT TACOMA LLC

PROJECT NUMBER
422756.0002.0000

LOCATION
SOUTH TACOMA FIELD SITE
TACOMA, WASHINGTON

DATE 8/24/21
DRAWN BY VPB
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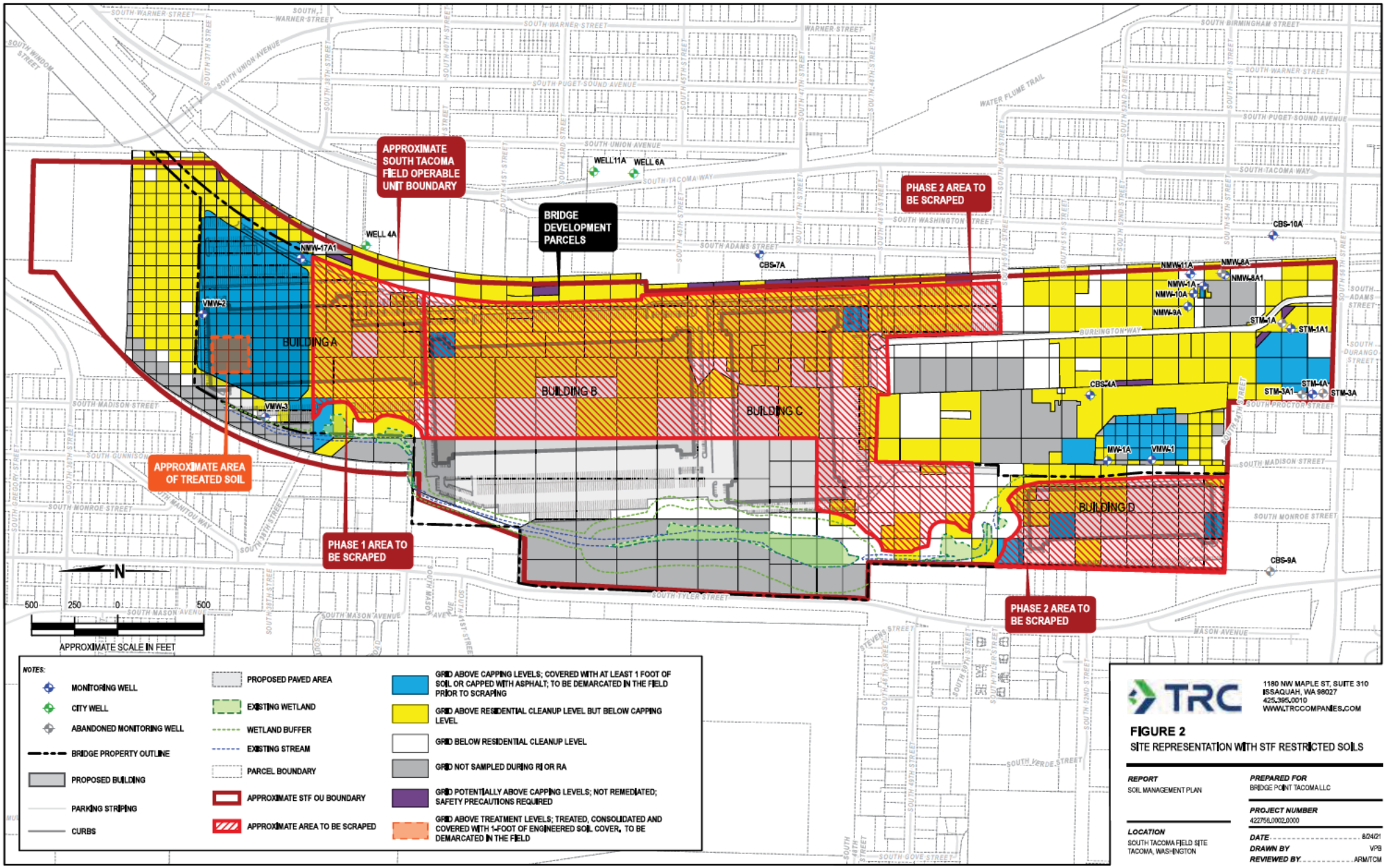

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FIGURE 2
SITE REPRESENTATION WITH STF RESTRICTED SOILS

REPORT
SOIL MANAGEMENT PLAN

PREPARED FOR
BRIDGE POINT TACOMA LLC

PROJECT NUMBER
422756.0002.0000

LOCATION
SOUTH TACOMA FIELD SITE
TACOMA, WASHINGTON

DATE 8/24/21
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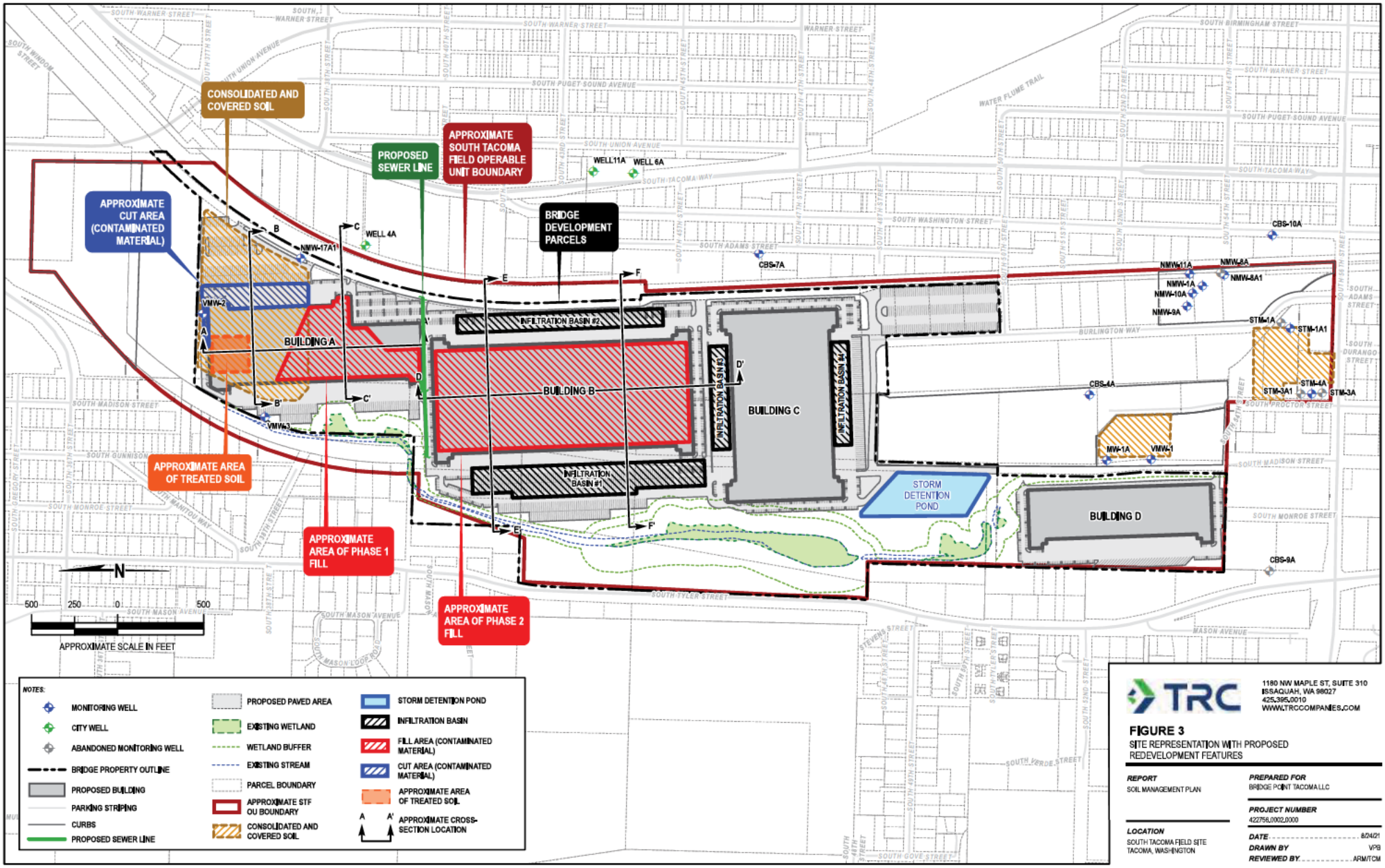

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FIGURE 3
SITE REPRESENTATION WITH PROPOSED REDEVELOPMENT FEATURES

REPORT
SOIL MANAGEMENT PLAN

PREPARED FOR
BRIDGE POINT TACOMA LLC

PROJECT NUMBER
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LOCATION
SOUTH TACOMA FIELD SITE
TACOMA, WASHINGTON

DATE 8/24/21
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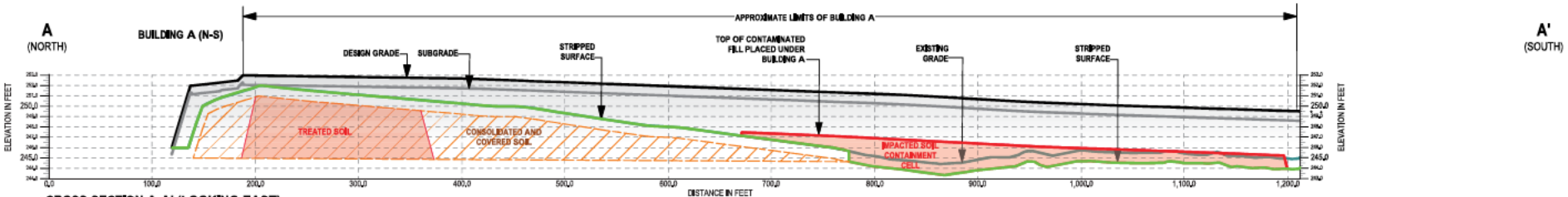
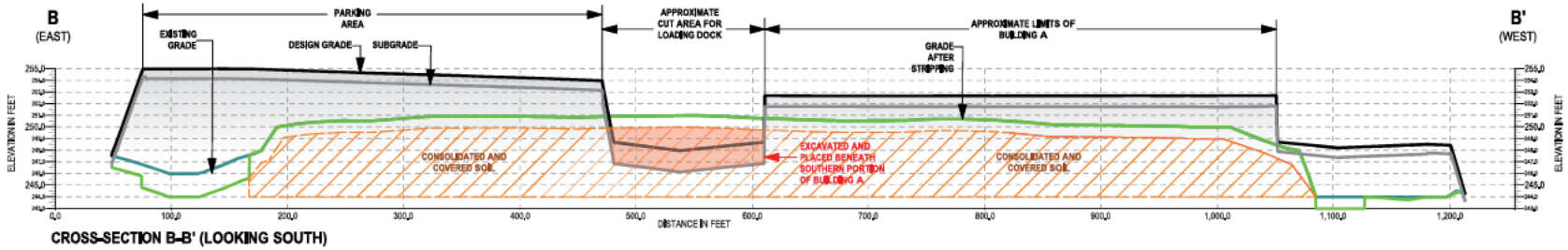
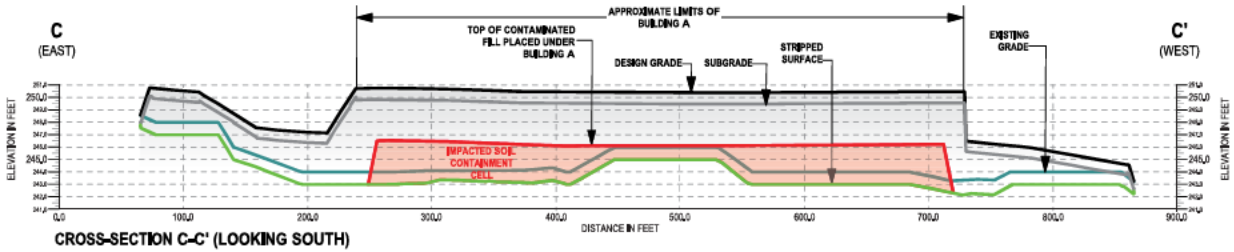


CROSS-SECTION A-A' (LOOKING EAST)



CROSS-SECTION B-B' (LOOKING SOUTH)



CROSS-SECTION C-C' (LOOKING SOUTH)

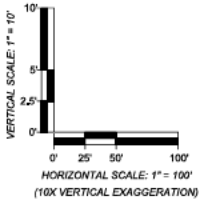


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FIGURE 4

BUILDING A CROSS-SECTIONS
A-A' (NORTH TO SOUTH), B-B' (EAST TO WEST),
AND C-C' (EAST TO WEST)

REPORT
SOIL MANAGEMENT PLAN

PREPARED FOR
BRIDGE POINT TACOMA LLC

PROJECT NUMBER
422756.0000.0000

LOCATION
SOUTH TACOMA FIELD SITE
TACOMA, WASHINGTON

DATE 8/24/21
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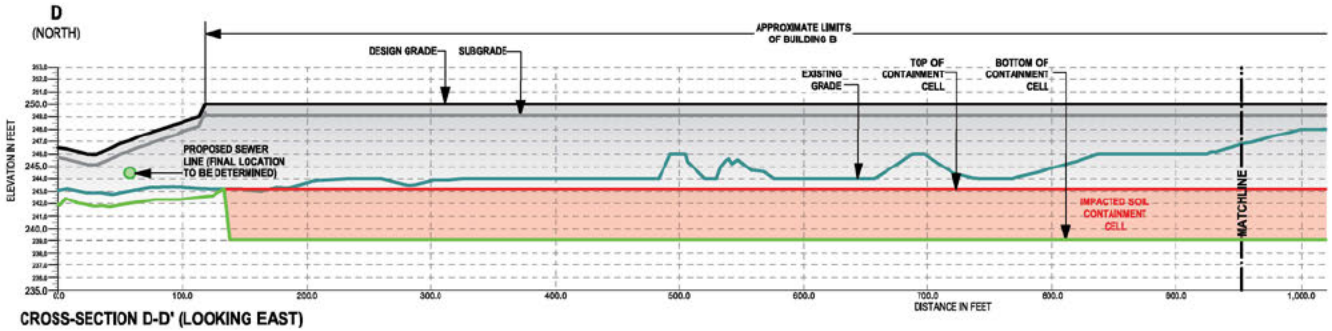
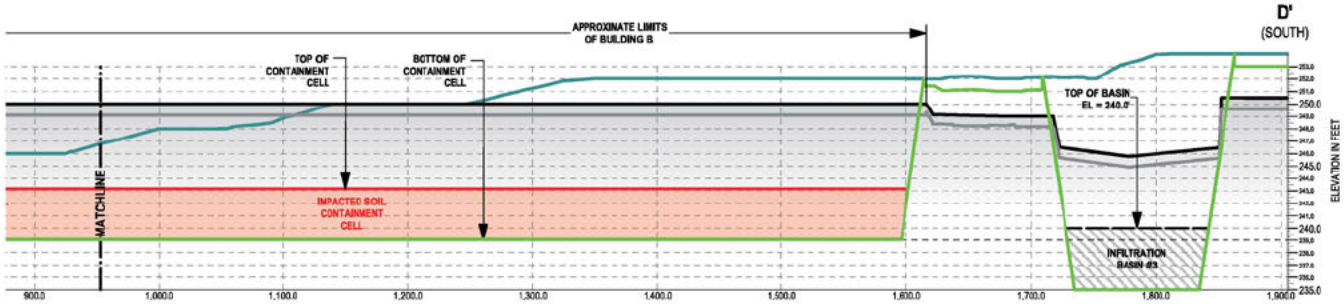


CROSS-SECTION D-D' (LOOKING EAST)



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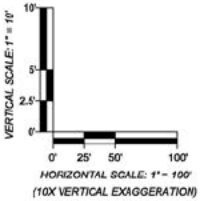

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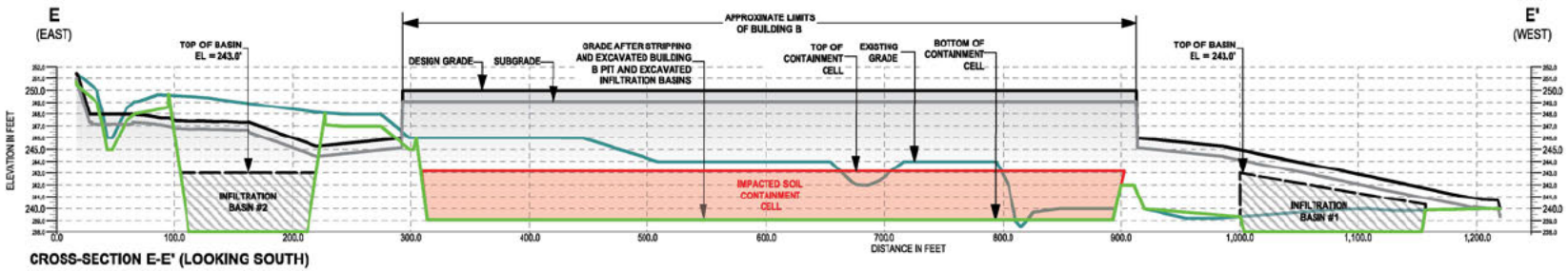
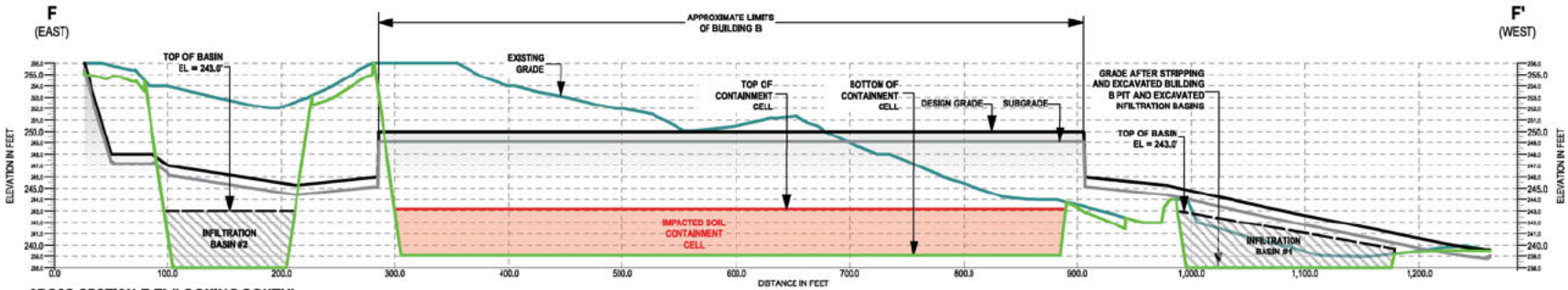
FIGURE 5

BUILDING B CROSS-SECTIONS
D-D' (NORTH TO SOUTH)

REPORT SOIL MANAGEMENT PLAN	***PREPARED FOR*** BRIDGE POINT TACOMA LLC
LOCATION SOUTH TACOMA FIELD SITE TACOMA, WASHINGTON	***PROJECT NUMBER*** 422756.0000.0000
	DATE 8/24/21
	DRAWN BY ..... VPB
	REVIEWED BY ..... ARM/TCM



CROSS-SECTION E-E' (LOOKING SOUTH)



CROSS-SECTION F-F' (LOOKING SOUTH)

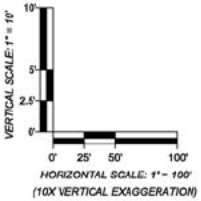


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FIGURE 6

BUILDING B CROSS-SECTIONS
E-E' (EAST TO WEST) AND F-F' (EAST TO WEST)

REPORT SOIL MANAGEMENT PLAN	***PREPARED FOR*** BRIDGE POINT TACOMA LLC
LOCATION SOUTH TACOMA FIELD SITE TACOMA, WASHINGTON	***PROJECT NUMBER*** 422756.0000.0000

DATE 8/24/21
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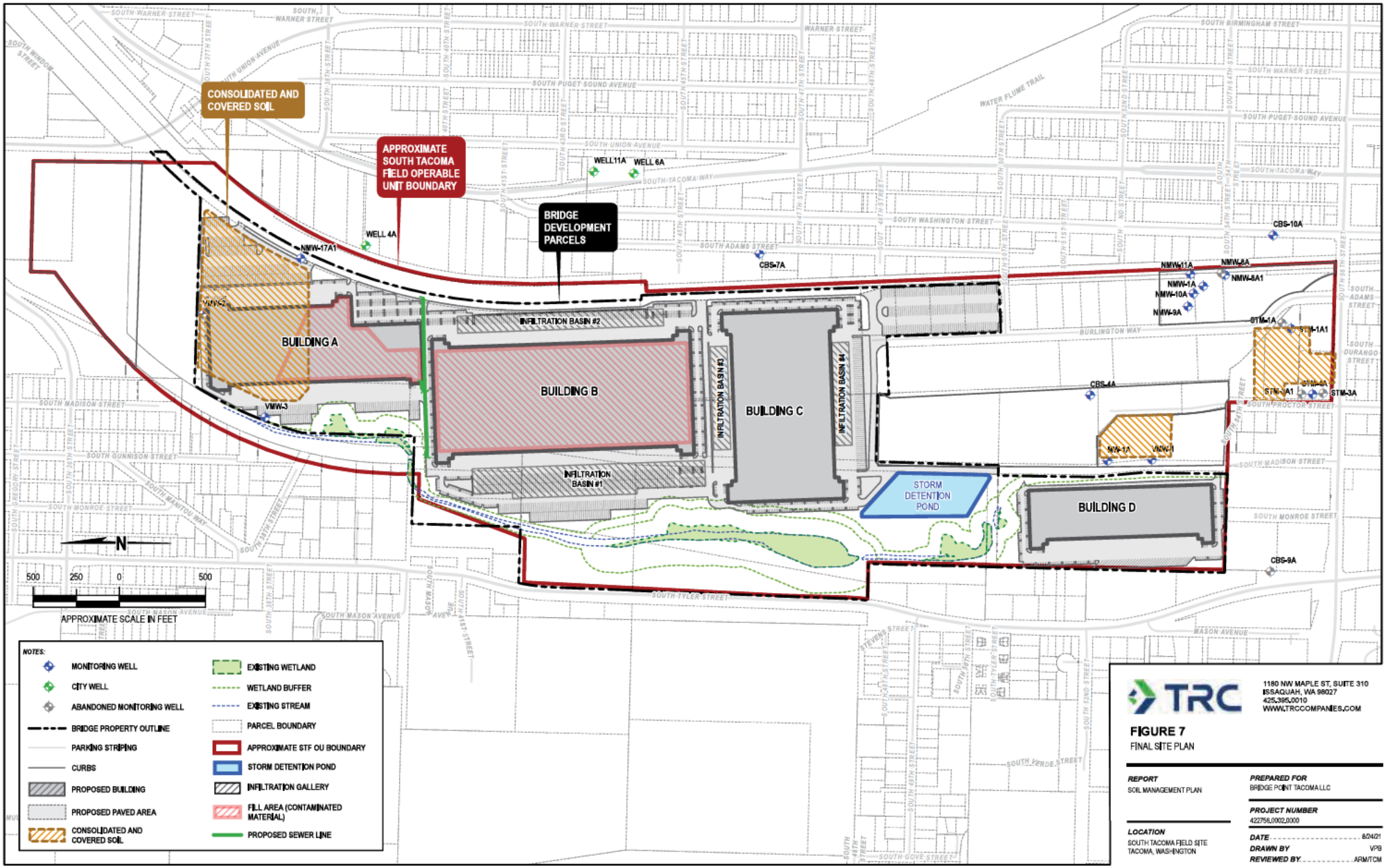

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FIGURE 7
FINAL SITE PLAN

REPORT
SOIL MANAGEMENT PLAN

PREPARED FOR
BRIDGE POINT TACOMA LLC

PROJECT NUMBER
422756.0002.0000

LOCATION
SOUTH TACOMA FIELD SITE
TACOMA, WASHINGTON

DATE 8/24/21
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REVIEWED BY ARM/TCM

Appendix A
Health and Safety Plan

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Health and Safety Plan

South Tacoma Field Site
South 56th Street and South Burlington Way
Tacoma, Washington

Former South Tacoma Field Soil Operable Unit
South Tacoma Field NPL Site

Prepared For:

Bridge Point Tacoma LLC
10900 NE 4th Street, Suite 2300
Bellevue, Washington 98004

August 26, 2021

Prepared By:

TRC Environmental Corporation
1180 NW Maple Street, Suite 310
Issaquah, Washington 98027
(425) 395-0010

Ramsey Mauldin

Prepared by:
Ramsey Mauldin
Project Environmental Scientist

Adam R. Morine

Reviewed and approved by:
Adam R. Morine, P.E.
Senior Engineer

TRC Project Number: 422756.0

QR _____ TR _____

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ABBREVIATIONS AND ACRONYMS

Acronym/ Abbreviation	Definition
APR	Air purifying respirator
BNR	Burlington Northern Railroad
BNSF	Burlington Northern Santa Fe
Bridge	Bridge Development Partners, LLC
COC	Contaminant of concern
CIH	Certified industrial hygienist
cPAHs	Carcinogenic polycyclic aromatic hydrocarbons
CPR	Cardiopulmonary resuscitation
CSP	Certified safety professional
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
HASP	Health and Safety Plan
HEPA	High efficiency particulate air
Hos	Hos Bros. Construction
IDLH	Immediately dangerous to life and health
IIPP	Injury and Illness Prevention Program
JSA	Job Safety Analysis
LEL	Lower explosive limit
lpm	Liters per minute
MCEF	Mixed cellulose ester filter
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
mg/m^3	Milligrams per cubic meter
mm	Millimeter
NIOSH	National Institute for Occupational Safety and Health
NPL	National Priorities List
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated biphenyls
PEL	Permissible exposure limit
PPE	Personal protective equipment
ppm	Parts per million
PVC	Polyvinyl chloride
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SDIC	Site Development and Institutional Controls Plan for Properties Under a Restrictive Covenant
SOU	Soil Operable Unit
SOW	Scope of Work
SSO	Site Safety Officer
STEL	Short term exposure limit
TLV	Threshold limit value

Acronym/ Abbreviation	Definition
TRC	TRC Environmental Corporation
TWA	Time weighted average
$\mu g/m^3$	Micrograms per cubic meter
µm	Micrometer
VOC	Volatile organic compound
WISHA	Washington Industrial Safety and Health Act

1.0 INTRODUCTION

On behalf of Bridge Development Partners, LLC (Bridge), TRC Environmental Corporation (TRC) has prepared this *Health and Safety Plan* (HASP) for a portion of the South Tacoma Field Soil Operable Unit 3 of the South Tacoma Field Commencement Bay South Tacoma Channel National Priorities List (NPL) Site ("Site"). This document is an Attachment to TRC's July 2021 *Amendment to Operations and Maintenance Plan, South Tacoma Field Site – Soil Management Plan for Proposed Redevelopment* (SMP).

The Site is generally located at South 56th Street and South Burlington Way, Tacoma, Washington. Bridge is currently evaluating the potential purchase of approximately 150 acres of the approximately 260-acre Site. The Site has undergone a full Remedial Investigation / Feasibility Study (RI/FS) and completion of remedial actions under a Record of Decision (ROD) with U.S. Environmental Protection Agency Region 10 (EPA), which was completed in 2002. As a result of the remedial actions and subsequent post-closure groundwater monitoring, the Soil Operable Unit (SOU) 3 has been de-listed from the NPL.

As a component of the remedial actions, approximately 93,000 cubic yards of contaminated soil and 6,300 cubic yards of contaminated and treated soil were encapsulated in an approximately 12-acre section of the northern portion of the Site. Development of the Site will require that the encapsulated soils are partially excavated and relocated to allow for appropriate gradation. This HASP was developed in support of this potential excavation and contaminated soil relocation. The purpose of this HASP is to establish responsibilities, procedures, and contingencies for the protection of TRC employees, contractors, visitors, and the public while performing activities at the Site.

The use of proper health and safety procedures in accordance with applicable Occupational Safety and Health Administration (OSHA) shall be required during Site work. The Site work include the procedures and tasks outlined in the *Soil Management Plan*, prepared by TRC dated August 26, 2021. The procedures presented in this HASP are intended to serve as guidelines, and are not a substitute for sound judgment by on-Site personnel.

1.1 Key Companies Involved in Project

Site Owner:	Burlington Northern Santa Fe (BNSF)
Site Developer:	Bridge
Contractor:	Sierra Incorporated
Construction Contractor:	Hos Bros. Construction (Hos)

2.0 SITE BACKGROUND

The Site was generally described as comprising the Burlington Northern Railroad (BNR) Railyard, BNR Dismantling Yard, Airport, Former Swamp/Lakebed, and the Amsted Property. It must be noted that the Amsted Property is not a portion of the Site to be purchased by Bridge.

The Site was generally used by BNSF from approximately the early 1890s through late 1980 for manufacturing, repair, and dismantling of railcars with some on-Site smelting (which was restricted to the Amsted Property). The Site was impacted primarily with elevated concentrations of lead, which was the primary regulatory driver for remediation. Other contaminants of concern (COCs) detected at concentrations greater than action levels identified in the ROD include arsenic, copper, zinc, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and polychlorinated biphenyls (PCBs).

The Site was placed on the NPL and underwent the RI/FS and cleanup process under a ROD with EPA. SOU 3, which is the subject of Bridge's potential purchase, was removed from the NPL and is currently undergoing limited post-closure monitoring.

The remedial action included encapsulation of highly impacted soils, whereby material was placed on native soil and covered with a 1-foot soil cap, hydroseeded, and fenced. Soil in other portions of the Site with lead and other contaminants at concentrations exceeding a residential cleanup level were allowed to remain in place. The *Remedial Action Report* for the Site, dated March 2000 by Kennedy/Jenks Consultants, documents the post-remediation conditions at the Site.

3.0 SCOPE OF WORK

As noted above, Bridge is evaluating a potential purchase of about 150 acres of the Site. The portion subject to the potential purchase includes the approximately 12-acre area on the northern portion of the property containing approximately 92,000 cubic yards of encapsulated soil and 6,300 cubic yards of treated and encapsulated soil. The *Soil Management Plan* presents the current development plan with locations of buildings and shows that the footprint of one of the proposed buildings is partially located on the encapsulated area. The grades in this area will require adjustment for development and some amount of encapsulated material will be encountered.

The proposed Scope of Work (SOW) will be conducted by Hos and will include the following operations:

- Excavation
- Grading and Backfilling
- Truck Loading
- Dust Mitigation
- Surveying
- Waste Removal

4.0 ROLES AND RESPONSIBILITIES

Contact information and names of key health and safety personnel are detailed in Table 1, below.

Table 1
Key Project Personnel and Contact Information

Role	Name	Number
TRC Personnel		
TRC Project Manager	Adam Morine	425-677-5727
TRC Office Safety Coordinator	Douglas Kunkel	425-241-8170
TRC Site Safety Officer	Nathanael Dorfner	253-307-5227
TRC Assistant Site Safety Officer	Eric Stata	425-273-7681
Bridge Personnel		
Site Safety Officer	To be determined	*
Hos Personnel		
Site Safety Officer	To be determined	*

The TRC Site Safety Officers or Assistant Safety Officer must report all site incidents immediately to the TRC Project Manager.

The TRC Project Manager must immediately report all incidents *involving personal injury* to the TRC Director of Human Resources:

Jenny Moczygemba Cell: (b) (6)

The TRC Project Manager must report all incidents *not involving personal injury* within 24 hours to the TRC National Safety Director:

Mike Glenn Cell: (b) (6)

4.1 TRC Project Manager Responsibilities

The TRC Project Manager is responsible for the following:

- Overall responsibility for development of a complete and accurate HASP. The HASP shall account for foreseeable hazards;
- Management and technical direction of all aspects of the project;
- Ensures the completion of periodic Site inspections;
- Conducts incident investigations; and
- Delegates responsibility for field implementation of the HASP to TRC Site Safety Officer.

4.2 Site Safety Officers – TRC and Contractor Personnel Responsibilities

The Site Safety Officers (SSOs) are responsible for the following:

- Daily implementation of the HASP;
- Ensures HASP is available on-Site and that the plan is understood and signed by all personnel entering the Site;
- Conducts (or coordinates the completion of) Tailgate Safety Meetings and ensures documentation of these meeting is available for review;
- Uses Job Safety Analyses (JSAs) to emphasize hazards and protective measures discussed in the HASP;
- Communicates any revisions to the SOW or HASP to affected personnel and Project Manager; and
- Implements emergency response procedures.

4.3 Assistant Site Safety Officer – TRC and Contractor Personnel Responsibilities

The Assistant Site Safety Officer will assume the responsibilities of the SSO in their absence.

It is TRC's intent to have a TRC SSO or Assistant SSO available on-Site during work activities. In the event that neither person is physically on-Site, they will be available by phone (see Table 1, above).

4.4 TRC Employees Responsibilities

TRC Employees are responsible for the following:

- Understanding and complying with this HASP, including the JSAs;
- Participation in Tailgate Safety Meetings prior to commencement of Site work; and
- Acknowledge an understanding of the HASP by signing the Daily Pre-Job Safety Briefing and HASP Compliance Agreement (Attachment A).

4.5 Contractors and Subcontractors Responsibilities

A copy of the HASP will be made available to each designated Contractor or Subcontractor ("Contractor") SSO prior to mobilizing to the Site. Upon review or briefing of the HASP, each Contractor and their personnel performing work on-Site will be required to sign the Daily Pre-Job Safety Briefing and HASP Compliance Agreement (Attachment A) to verify their understanding and willingness to comply with the HASP.

TRC hires Contractors to apply their technical expertise to specific work tasks (i.e., construction, drilling, grading, and heavy equipment operation). Although TRC has a certain level of knowledge in these areas, the Contractor is most knowledgeable of the hazards within their particular area of expertise and is in the best position to implement and monitor an effective health and safety program. Contractors are required to follow and operate within their company's health and safety program and policies. TRC will exercise reasonable care to prevent and detect safety violations on-Site; however, direct supervision of Contractor employee safety is the responsibility of the Contractor.

Contractors are to designate a company representative as their own SSO and, if applicable, Assistant SSO. This individual shall monitor the Contractor's employees and ensure that safe working procedures are being followed. The SSO and, if applicable, Assistant SSO shall be identified to TRC in writing, either by email or letter or by having the individual sign and provide contact information on the Daily Pre-Job Safety Briefing and HASP Compliance Agreement (Attachment A).

Contractors shall:

- Provide a copy of their HASP to the TRC SSO or Project Manager prior to Site mobilization;
- Provide safety equipment and personal protective equipment for their employees in accordance with Sections 9.0 and 10.0 of this HASP;
- Ensure their equipment is in proper working order and their employees are trained and medically fit to complete the work assigned to them; and
- Provide evidence upon request that personnel working at the Site have received the necessary training, certifications and, if applicable, medical surveillance.

The Contractor must inform the TRC SSO if the risks associated with a particular task exceed day-to-day safety requirements and necessitate additional safety precautions to protect the employees performing the particular task. In such cases, TRC may dictate that additional safety precautions be implemented. In the event a discrepancy arises between Contractor safety procedures and those of TRC, the more stringent and protective procedures will be implemented.

4.6 Visitors and Regulatory Agents

- Visitors / regulatory agents will be provided an overview of the basic Site safety information. A copy of this HASP will be made available for review.
- All visitors / regulatory agents are required to sign-in on the HASP Compliance Agreement (Attachment A) each time they enter the project Site.
- Visitors / regulatory agents should be escorted by a TRC or designated Contractor employee and should not be allowed to move about the Site alone.

5.0 COMMUNICATION

Communication is an important aspect of project safety and this HASP. The following processes will be implemented during project execution to ensure effective identification and communication of health and safety hazards:

- Pre-job project planning meetings to discuss the scope of work and potential hazards;
- Site walkdowns with the TRC workgroup, subcontractors, and Bridge;
- Development of Site-specific HASP and JSAs;
- Communication and acknowledgement of understanding of HASP and JSAs by signing the HASP Compliance Agreement (Attachment A);

- Daily tailgate safety meetings emphasizing that hazard assessment is a continuous process, and any potentially unsafe actions or condition are to be communicated immediately to the SSO; and
- Communicating results of field observations/audits. Visual observations are to be conducted daily by the SSO. Periodic field observations will also be recorded on the TRC Field Notes Form (Attachment B). Results from either observation will be communicated during tailgate safety meetings.

6.0 REVISIONS TO HEALTH AND SAFETY PLAN

If a situation arises in which this HASP requires revision, the following options are available:

- Except in the case of emergency situations, no deviations from the HASP may be implemented without the prior notification and approval of the TRC SSO.

- If HASP revisions are minor (i.e., not involving significant changes to the SOW, associated hazards or personal protective equipment [PPE] requirements), the TRC Site Safety Officer (SSO) can make hand-written revisions to the HASP in the field. HASP Revisions must then be communicated to affected personnel and the Project Manager/Supervisor.

- If HASP revisions are substantial (i.e. involving significant changes to the scope of work, associated hazards or PPE requirements), the TRC SSO must consult with the Project Manager/Supervisor before making revisions. The TRC SSO can make hand-written revisions to the HASP in the field. HASP revisions must then be communicated to affected personnel and the Project Manager/Supervisor. It is up to the discretion of the Project Manager/Supervisor whether a revised HASP will be reissued to replace the original HASP on the work site.

7.0 HAZARD ASSESSMENT

Hazard assessment is essential for establishing hazard prevention measures. The potential physical, chemical, and biological hazards associated with various TRC project sites are discussed below. Not all hazards apply to this Site-specific HASP. In addition, the list is not necessarily comprehensive and may require additional hazards associated with a particular task to be added.

JSAs have been developed to address hazards or hazardous tasks and are included in Attachment C. If new hazards arise, additional JSAs will be incorporated and discussed at the daily tailgate meeting. The HASP will be updated accordingly and a copy of the updated JSAs will be provided to EPA.

7.1 Physical Hazards

The physical hazards and associated preventative measures to be employed at the Site are provided in Table 2, below.

Table 2
Physical Hazards and Preventive Measures

Prevention of Physical Hazards		
Category	**Cause**	**Preventive Measures**
Head Hazards	Falling and/or sharp objects, bumping hazards.	Hard hats will be worn by all personnel at all times when working around overhead hazards and heavy equipment.
Foot/Ankle Hazards	Sharp objects, dropped objects, uneven and/or slippery surfaces, and chemical exposure.	Chemical-resistant, steel-toed boots with slip-resistant tread must be worn at all times on-Site.
Eye Hazards	Dust, sharp objects, poor lighting, exposure due to splashes.	Safety glasses/face shields will be worn when appropriate, when handling samples, and in the presence of airborne dust.
Electrical Hazards	Underground utilities, overhead utilities, motors, electrical panels equipment, and breakers.	Locator service mark-outs, visual inspection of work area prior to starting work.
Mechanical Hazards	Heavy equipment such as drill rigs, service trucks, excavation equipment, saws, drills, etc.	Competent operators, backup alarms, regular maintenance, daily mechanical checks, and proper guards. Stake out work areas. Only authorized personnel allowed in associated areas.
Noise Hazards	Machinery creating >85 decibels time-weighted average (TWA), >115 decibels continuous noise, or peak at >140 decibels.	Wear earplugs or protective earmuffs.
Fall Hazards	Elevated and/or slippery or uneven surfaces. Trips caused by poor "housekeeping" practices.	Care should be used to avoid such accidents and to maintain good "housekeeping." Fall protection devices must be used when work proceeds on elevated surfaces that are equal to or greater than 6 feet above adjacent surfaces.
Lifting Hazards	Injury due to improper lifting techniques, overreaching/ overextending, heavy objects.	Use proper lifting techniques, mechanical devices where appropriate.
Lighting Hazards	Improper illumination.	Limit work to daylight hours or rent additional construction lighting.

7.2 Chemical Hazards

The following chemical hazards apply at the Site:

- Lead
- Arsenic
- Copper
- Zinc

- cPAHs
- PCBs

Specific risks, target organs, and potential health effects associated with these chemical hazards associated with these compounds are identified in Section 11.2.2.

7.3 Biological Hazards

The following biological hazards apply at the Site:

- Poisonous plants
- Blackberry, thorned plants
- Animals and insects
- Heat and cold stress
- Hypothermia
- Dehydration

7.4 COIVD-19

At a minimum, all personnel shall follow federal, state, and local COVID-19 safety requirements in effect at the time the work is performed. Recognizing that responses to the pandemic are dynamic and evolving, SSOs will monitor workplace safety guidelines issued by health officials, government agencies, and key companies involved in the project. Site operating procedures will be adjusted, as necessary, so that the most protective requirements from the aforementioned entities shall be implemented during Site operations.

8.0 GENERAL SAFETY RULES

This section presents general safety rules for all persons working at the project site. Failure to follow safety protocols and/or continued negligence of health and safety policies will result in expulsion of a worker or firm from the Site and may result in termination of employment.

- Horseplay, fighting, gambling, or the possession of firearms are not permitted.

- Work shall be well planned and supervised to prevent injuries. Supervisors shall assure that employees observe and obey safety rules and regulations.

- An employee reporting for work who, in the opinion of their supervisor, is unable to perform their assigned duties in a safe and reasonable manner shall not be allowed on the job site.

- No employee shall be assigned a task without first having been instructed on proper methods, including safety training, of carrying out the task. Any employee who feels they have not received proper instruction shall notify their supervisor prior to carrying out the task.

- Injuries and accidents shall be reported immediately to the immediate supervisor, who will then report it to the SSO.
- There shall be no consumption of food or drink in either hot or warm zones of the Site. Hands should be thoroughly cleansed immediately prior to eating.
- No use of cell phones in the hot zone.
- Smoking is not permitted in hot or warm zones of the Site.
- When personnel are conducting hazardous operations, there shall be at least one other person (buddy system) on duty in the immediate area as a backup, in case of emergency.
- Wear required PPE in the workplace when appropriate and/or when specified in the Site-specific HASP. Loose clothing and jewelry should not be worn when operating machinery.
- Do not operate any machinery if you are not authorized or qualified to do so. If unsure how to operate a machine or perform any assigned task, ask the Project Manager/Supervisor before proceeding.
- Do not operate motorized equipment until proper training and certification has been provided (e.g., forklifts, etc.)
- No one shall knowingly be permitted or required to work while the employee's ability or alertness is so impaired by fatigue, illness or other causes that it might unnecessarily expose the employee or others to injury.
- Alcohol and drugs are strictly prohibited on any TRC premises, customer property, and/or in company vehicles. Employees shall not report to work under the influence of drugs or alcohol. Employees are prohibited from possessing, using, manufacturing, distributing, dispensing, selling or purchasing illegal drugs or other controlled substances (as defined under federal and state law).

9.0 PERSONAL PROTECTIVE EQUIPMENT

TRC staff and all on-Site personnel are required to wear PPE appropriate for the task and potential physical, chemical, and biological exposures. Selection of PPE is based on the results of the initial determination exposure assessment (discussed further in Section 9.1), hazard assessment (i.e., JSAs), and air monitoring (discussed further in Section 11.0).

9.1 Initial Determination Exposure Assessment

Initial determination exposure assessments will be conducted to verify the appropriate level of PPE required on-Site throughout earthwork operations. Initial determination exposure assessments will be conducted at the beginning of the implementation of the *Soil Management Plan*. Additional exposure assessments will also be conducted if earthwork progresses from an area or condition of lower documented metals concentrations or exposure to one of higher concentrations or increased exposure risk. A confirmatory exposure assessment will be conducted after treated and impacted soils are consolidated or covered to demonstrate the absence of residual dust exposure.

During the initial determination exposure assessment, a more protective level of PPE will be worn to ensure adequate protection for workers to COCs.

Prior to the completion of the initial determination exposure assessment, all on-Site personnel involved in or working within 50 feet or downwind of earthwork activities will wear disposable coveralls with integrated foot coverings, and National Institute for Occupational Safety and Health (NIOSH)-approved half-face or full-face respirators equipped with high efficiency particulate air (HEPA) P100 filters in addition to steel-toed boots, DOT-approved high visibility safety vests, and hard hats when work is conducted around heavy machinery or when conducting overhead work. Staff working in a half-face respirator will also wear safety glasses.

At the completion of the initial determination exposure assessment, all relevant air monitoring data will be reviewed by an American Board of Industrial Hygiene (ABIH) Certified Industrial Hygienist (CIH) and the level of PPE required to execute on-Site operations will be reevaluated. PPE and respiratory protection may be downgraded if initial determination exposure assessments indicate no exceedances of the OSHA permissible exposure limits (PELs). Further details and procedures of the initial determination exposure assessment are described in Section 11.2.5.

9.2 PPE Required by All Personnel at All Times

Prior to entering the Site and while working or moving across any portion of the Site outside of an enclosed job trailer, all personnel must wear:

- Steel-toed boots (rubber, or boots with taped Tyvek booties).
- DOT-approved high visibility safety vests.
- Safety glasses (unless using a full-face respirator).
- Hard hats when work is conducted around heavy machinery, or when overhead work is conducted.

Types of PPE to be Used	
Foot	Steel-toed, steel shank boots. Rubber steel-toed boots or boot covers required if boot decontamination is warranted.
Hand	Nitrile gloves when handling potentially contaminated media, temperature-appropriate gloves for protection during cold weather.
Eye/Face	Safety glasses, COVID-19 appropriate face mask, as required.
Clothing	Temperature appropriate, long pants are required. High visibility vest over Tyvek coveralls in hot zones. Tyvek to be available to all on-Site workers.
Respiratory	Respirators will be worn when exposed to dust or particulates in hot zones above an action level.
Additional Gear	Earplugs, DOT-approved high visibility safety vest, dust masks.

9.3 PPE Required to be Available on-Site

During the entirety of the execution of the work, the following extra PPE should be properly stored on-Site away from moisture: hard hats, safety vests, safety glasses, Kevlar and nitrile gloves, protective Tyvek boot covers, earplugs or protective earmuffs, full-face respirators (HEPA P100 filters), and Tyvek suits.

9.4 PPE Required by Task

The following subsections define PPE requirements for specific tasks associated with the Work Plan.

9.4.1 Working in Hot Zones

Prior to the completion of the initial determination exposure assessment, all on-Site personnel working within the hot zone will wear disposable coveralls with integrated foot coverings, NIOSH-approved half-face or full-face respirators equipped with HEPA filters, as well as the PPE listed in Section 9.2, above. At the completion of the initial determination exposure assessment, the PPE required to complete the task associated with the assessment will be reevaluated and communicated to all SSOs. The hot zone and other site control measures are discussed further in Section 12.0.

9.4.2 Working Near Heavy Machinery

A hard hat will be worn as well as all PPE listed in Section 9.2, above, when working within 50 feet of heavy machinery including haul trucks, excavation equipment, and grading equipment, or if overhead work is being conducted.

10.0 RESPIRATORY PROTECTION

For operations that require the use of a respirator, TRC and Contractor SSOs must verify that Field Personnel are medically approved to use respiratory equipment, fit tested, and trained in the proper use of respirators. Respirators utilized on-Site are required to be approved by NIOSH. Respiratory protection is mandatory if workers are required to complete tasks within a hazardous atmosphere. According to OSHA, a hazardous atmosphere is defined as:

- Flammable gas, vapor, or mist in excess of 10 percent of the lower explosive limit (LEL);
- Atmospheric oxygen is below 19.5 percent or 23.5 percent;
- When concentration of a known contaminant is greater than the PEL; or
- Airborne combustible dust exceeds its LEL (approximated when dust obscures vision at a distance of 5 feet or less).

Personal air monitoring will be conducted for specific work activities and job tasks to assess and monitor occupational exposure levels to assist in the selection of respiratory protection. The air monitoring plan is discussed in further detail in Section 11.0. Initial determination will be performed to include full-shift personal air samples for employees performing work activities and tasks with potential exposure to airborne contaminants. Respiratory protection will be assessed and adjusted based on the results of the initial determination exposure assessment. Random sampling events and/or additional personal air monitoring shall be conducted throughout the project duration to account for changes in Site conditions, equipment, and/or work practices.

10.1 Air Purifying Particulate Respirators

Particulate respirators can be used in situations where nuisance dust and particulates are the only contaminants posing an inhalation hazard. Particulate respirators are not to be used in oxygen deficient atmospheres or if hazardous levels of gas/vapor contaminants are also present.

HEPA, P100 respirator cartridges should be used in place of commercially available “dust masks” prior to completion of the initial determination exposure assessment, or when dust or chemical action levels have been exceeded.

10.2 Air Purifying Gas/Vapor Respirators

TRC employees and Contractors are required to wear half-face, air purifying respirators with the appropriate chemical cartridge under the following circumstances:

- When concentration of a known contaminant continuously exceeds PEL time weighted average or the threshold limit value (TLV) time weighted average;

- When volatile organic compound (VOC) vapors in the work area continuously exceed the threshold limit value time weighted average (TLV TWA) for gasoline (300 parts per million [ppm]); or

- When, at any time, VOC vapors in the work area exceed the threshold limit value short term exposure limit (TLV-STEL) for gasoline (500 ppm).

Air-purifying respirators (APRs) are not anticipated to be required at the Site for VOCs; however, APRs with chemical cartridges can be used under the following conditions:

- If the oxygen concentration is between 19.5 percent and 23.5 percent;

- If chemical contaminants have been identified;

- The toxic concentrations are known and the respirator cartridges are effective in removing the contaminants;

- The respirator and cartridges are NIOSH or Mine Safety and Health Administration (MSHA) approved; and

- The contaminants have noticeable warning qualities such as dust, odor, and visibility characteristics including color.

In the event workers are required to wear APRs with chemical cartridges, the following requirements must be met:

- The TRC or Contractor SSO must verify that workers are:

  - medically approved (within one year) to use respiratory protection;

  - fit-tested for the specific respirator to be used; and

  - trained in the proper use and limitations of the respirator to be used.

- Contractors must provide proof of the above to the TRC SSO, upon request.

- If an employee or contractor has not cleared by the SSO to use a respirator, they will not be assigned tasks that may potentially expose them to contaminants.

- Personnel with interfering facial hair are not permitted to wear respirators and shall not be permitted in areas where respiratory protection is required.

10.3 Air-Supplied Respirators

Air-supplied respirators, such as self-contained breathing apparatus (SCBA) or airline, full-face respiratory protection, are not anticipated to be required at the Site. This level of respiratory protection is utilized in oxygen deficient atmospheres or atmospheres considered to be at or above immediately dangerous to life and health (IDLH) levels. These conditions will only occur in rare, if any, circumstances such as confined space entry or emergency situations. The use of air-supplied respiratory protection is not permitted without approval and guidance from the SSO.

11.0 AIR MONITORING

11.1 Dust Mitigation

The primary potential exposure pathway for Site workers and the surrounding community is inhalation of respirable dust generated during excavation and other soil disturbance activities. To prevent off-Site airborne migration of fugitive emissions, dust control measures will be implemented during active soil disturbances. The dust control measures will be designed to limit dust emissions, and the primary method of controlling the generation of dust will be through the application of water. Water will be obtained from nearby fire hydrants or from mobile water trucks. At a minimum, dust control measures will include the following:

- Watering active excavation areas utilizing a water spray truck and/or hose form a nearby hydrant; use of water will be limited to the extent that it will not generate runoff.
- Watering unpaved access roads used for vehicular and truck traffic.
- Misting or spraying of soil during excavation and loading.
- Minimize soil drop height from an excavator's bucket onto soil piles or into transport trucks.
- Placement of gravel and/or rumble plates on Site access roads.
- Covering loads on trucks while transporting soil.
- Dust monitoring during excavation and soil loading activities (refer to Section 11.0 for additional details).
- Establishing a vehicle speed limit along all unpaved sections of the Site where operational vehicles may travel.
- Street sweeping adjacent public and private streets, as needed.

- Maintaining polyethylene covers on inactive on-Site soil stockpiles, covering stockpiles at the end of each workday.

- Suspending excavation or other potential dust-producing activities if wind speeds exceed 20 miles per hour (mph).

Dust suppression measures will mitigate potential fugitive dust emissions associated with the earthwork. The quantity of water applied will be regulated to prevent runoff. Temporary berms will be installed to control runoff, if necessary.

11.2 Dust Monitoring

Work at the Site will be performed in a manner that is consistent with the Puget Sound Clean Air Agency's Regulation I, Sections 9.11 and 9.15, respectively, whereby:

- *"It shall be unlawful for any person to cause or allow the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property; and*

- *It shall be unlawful for any person to cause or allow visible emissions of fugitive dust unless reasonable precautions are employed to minimize the emissions."*

Particulate monitoring data will be collected for purposes of controlling on-Site work and preventing off-Site migration in the active excavation areas. Particulate monitoring in the active excavation areas will be performed using hand-held continuous real-time air monitoring instrumentation. Monitoring will be performed in representative areas, including locations within the active excavation areas and downwind areas, such as the edge of the active right-of-way (ROW) and other locations within approximately 50 feet of the active excavation limits. The data will be used to help evaluate whether further engineering controls or modified work practices are needed to reduce airborne contaminants. This may include the use of additional water application to reduce airborne dust and particulate levels. The particulate monitoring data will be used to confirm that the engineering controls are effective at reducing fugitive dust migration beyond the Site, in addition to providing real-time airborne particulate concentrations that will be compared with project-specific action levels and used by the SSO to make appropriate decisions regarding PPE and/or respiratory protection for workers.

11.2.1 Total Dust Action Levels (Work Area and Perimeter)

A hand-held continuous real-time air monitoring instrument such as an X MIE DataRAM Model 1000, or similar, will be used to determine fugitive dust emissions in the ambient air at the Site and to monitor dust in the areas of active work. Dust monitors will be used to measure airborne particulate matter concentrations and for comparison with project-specific action levels to provide real-time continuous data regarding changes of potential exposure to COCs and exceedances of applicable action levels over time.

These instruments only indicate total particulate levels and not specific contaminant concentrations; however, using the analytical results from previously collected soil samples, a total particulate Site action level can be calculated.

The OSHA 8-hour TWA PEL for lead is 0.05 milligrams per cubic meter (mg/m^3). The OSHA TWA PEL for arsenic is 0.010 mg/m^3. Lead is the most prevalent metal identified throughout the Site and is also present in the highest concentrations in soil. Therefore, conservatively, for perimeter dust monitoring, lead will be the surrogate for determining a dust action level using the following equation:

$$\frac{\text{OSHA PEL for Contaminant } (mg/m^3)}{\text{Contaminant Concentration} * (\text{Safety Factor})} = \text{Total Dust Action Level } (mg/m^3)$$

Example:

The highest lead concentration detected at the Site historically was 18,000 mg/kg (or 1.8 percent), from a location within former sample grid X. A safety factor of two times (200 percent) is used to help ensure that the PEL for lead will not be exceeded during excavation activities. The resulting Site-specific calculation is as follows:

$$\frac{0.05\ mg/m^3}{(1.8\%) * (2)} = 0.014\ mg/m^3 \text{ particulates}$$

Therefore, the total dust action level of 0.014 mg/m^3 (14 micrograms per cubic meter of air [$\mu g/m^3$]) will be used as the project-specific action level when comparing real-time dust and particulate monitoring data. This concentration is far lower and therefore considered more protective than the OSHA PEL TWA for respirable dust of 5 mg/m^3.

The project-specific stop work limit for soil disturbance activities (excluding direct loading) will be 1 mg/m^3 of respirable dust.

Arsenic and lead have been identified as primary COCs for the project. Associated action levels are discussed further in the following sections. It should be noted that the dust action levels are designed to address potential worker and/or community-related exposures, confirm that such exposures are minimized, and to identify when construction operations and/or dust control measures warrant enhancement or modification. Since the actual concentrations of arsenic and lead in air cannot be measured in real time, total dust concentrations can be used as a conservative surrogate to ensure protection of both Site worker and community health.

11.2.2 Metal Particulate Action Levels (Occupational Exposure)

11.2.2.1 Arsenic

Since arsenic is much less prevalent at the Site, the project-specific action level for dust and particulate air monitoring using real-time dust instrumentation is based on lead concentrations and will be set at

0.014 mg/m^3. The OSHA PEL TWA for arsenic is 0.010 mg/m^3. Occupational exposure levels for workers performing specific earth moving tasks as determined via personal exposure monitoring will be compared to the OSHA PEL for arsenic. Initial determination air samples will be collected to ensure appropriate selection of PPE and respiratory protection.

11.2.2.2 Lead

Lead has been identified as the most prevalent metal in soil at the Site and therefore the project-specific action level for dust and particulate air monitoring using real-time dust instrumentation is based on lead concentrations and will be set at 0.014 mg/m^3. The OSHA PEL-TWA for lead is 0.050 mg/m^3. Occupational exposure levels for workers performing specific earth moving tasks as determined via personal exposure monitoring will be compared to the OSHA PEL for lead. Initial determination air samples will be collected to ensure appropriate selection of PPE and respiratory protection. Table 3 below presents the exposure limits and/or action levels.

Table 3
Exposure Limits and/or Action Levels

Potential Chemical Hazards						
Chemical Name	Exposure Limits			Exposure Route	Target Organs	Symptoms
	PEL	AL	IDLH			
Arsenic	0.010 mg/m^3	0.005 mg/m^3	5 mg/m^3	Inhalation, skin absorption, skin/eye contact, ingestion	Liver, kidneys, skin, lungs, lymphatic system	Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin [potential occupational carcinogen]
Lead	0.050 mg/m^3	0.030 mg/m^3	100 mg/m^3	Inhalation, ingestion, skin/eye contact	Eyes, gastro-intestinal tract, CNS, kidneys, blood, gingival tissue	Weakness, exhaustion, insomnia, facial pallor, anorexia, weight loss, malnutrition, constipation, abdominal pain, colic, anemia, gingival lead line, tremor, paralysis, wrist, ankles, encephalopathy, kidney disease, irritation eyes, hypertension
Respirable Dust	5 mg/m^3	0.014[a] mg/m^3	NA	Inhalation, skin/eye contact	Eyes, skin, throat, upper respiratory system	Eye, skin, throat, upper respiratory system irritation

Notes:

a	OSHA does not have an action level established for respirable dust. The value included is the project-specific calculated action level based on metal particulate concentrations to dust.
PEL	OSHA permissible exposure limit as an 8-hour time weighted average.
AL	OSHA action level as an 8-hour time-weighted average.
IDLH	NIOSH immediately dangerous to life and health maximum level for emergency escape.

11.2.3 Real Time Dust Monitoring Field Protocol – Work Area and Perimeter

TRC will monitor potential generation of fugitive dust at the perimeter of the Site as well as within areas of active work operations.

TRC will strategically place air sampling devices in upwind and downwind locations from Site operations at or near the property fencelines to measure total particulate matter concentrations over the course of every workday. Real-time particulate monitoring will be performed using a combination of X MIE DataRAM Model 1000 Aerosol Monitors (Model 1000), or similar devices. One Model 1000 unit will be placed upwind, away from soil excavation or earth moving activities, and two Model 1000 units will be placed at the downwind Site perimeter approximately 500 feet apart. The intake for the instrument will be set at a height between 4 and 5 feet above ground surface.

The locations of the aerosol monitors will be adjusted throughout the day based upon prevailing wind direction as indicated by a weathervane installed at the Site, weather station readings, or a hand-held wind speed meter. A fourth Model 1000 unit will be a “roving” unit, to be placed at a location adjacent to the active earth moving activity area(s) and will be moved frequently throughout the day to provide real-time total particulate concentrations to the field team and SSO. The use of Model 1000 units will provide a degree of confidence in quantifying potential fugitive dust, provide good coverage for shifting wind patterns, and supply additional data to address community concerns. The monitors will provide instantaneous (every 60-seconds) and TWA concentrations of particulate matter in the size of 10 microns or less (PM10).

Upon identification of an exceedance of the project-specific total dust action level for stopping work (1 mg/m^3), the Contractor’s designated representative will be notified and all work will stop until additional dust suppression measures have been implemented. When work resumes, the Model 1000 unit with the exceedance will be monitored continuously for 15 minutes to verify that dust levels remain less than the action level and that the additional dust suppression measures were effective. If it is not possible to maintain dust levels less than the action level due to high winds or other factors, work may be suspended for an indefinite period until conditions allow for work to resume.

If perimeter air monitoring reveals that current dust suppression techniques are insufficient, additional dust suppression measures will be implemented. Continued perimeter air monitoring will determine where additional resources will be necessary.

11.2.4 Supplemental Sensitive Area Air Sampling Field Protocol

When operations are performed in sensitive areas, supplemental metal particulate air samples will be collected at representative upwind and downwind locations relative to the project alignment. Sensitive areas are defined as those that represent “worst-case” conditions where the nature of the construction operation combined with proximity to potentially sensitive receptors, including residents, result in a greater risk of exposure to off-Site receptors. The supplemental air sampling will be performed concurrent with the real-time particulate monitoring.

Sensitive area air samples will be collected using Gilian GilAir 5 sampling pumps, or equivalent attached to a 37-millimeter (mm) mixed cellulose ester filter (MCEF) or a 37-mm polyvinyl chloride (PVC) filter media. Area air samples will be staged at a height of 4 to 5 feet above ground surface using tripods. Air sampling pumps will be field calibrated before and after each sampling event using a field rotometer with current calibration curve against a National Institute of Standards and Technology (NIST) traceable

primary calibration standard. Based on laboratory analytical detection limits of between 0.02 and 0.04 µg per filter media, a nominal flow rate of approximately 2 to 3 liters per minute (lpm) is expected to provide sufficient flow during the course of an 8-hour sampling event to yield lead and arsenic concentrations in air within the range of 0.02 to 0.04 µg/m^3. These concentrations are well below the OSHA Action Levels for airborne arsenic and lead of 5 µg/m^3 and 30 µg/m^3 respectively. Following each air sampling event, at least one field blank will also be prepared and submitted for laboratory analysis of lead and/or arsenic particulate. The field blank will serve as a control for the filter media and sample handling activities. Samples will be submitted to a Washington State accredited analytical laboratory for analysis of lead and/or arsenic by NIOSH Method 7300 using Inductively Coupled-Argon Plasma, Atomic Emission Spectroscopy (ICP-AES).

11.2.5 Occupational Exposure Air Sampling Field Protocols

At the commencement of earthwork operations, an initial determination exposure assessment will be performed as described in Section 9.1. The purpose of the initial determination exposure assessment is to establish worker exposure concentrations for work activities and tasks with potential exposures to arsenic and/or lead particulate. The results of the initial determination exposure assessment will be reviewed by an ABIH Certified Industrial Hygienist (CIH) and will be used in the selection of appropriate task-specific PPE and respiratory protection.

Initial determination exposure assessment air samples (i.e., personal air samples) will be collected using Gilian GilAir 5 sampling pumps, or equivalent attached to a 37-mm MCEF or a 37-mm PVC filter media. Personal air samples will be placed within the breathing zone (i.e., area between the chest and the nose) of workers. Air sampling pumps will be field calibrated before and after each sampling event using a field rotometer with current calibration curve against a NIST traceable primary calibration standard. Based on laboratory analytical detection limits of between 0.02 and 0.04 µg per filter media, a nominal flow rate of approximately 2 to 3 lpm is expected to provide sufficient flow during the course of an 8-hour sampling event to yield lead and arsenic concentrations in air within the range of 0.02 to 0.04 µg/m^3. These concentrations are far less than the OSHA action levels for airborne arsenic and lead of 5 µg/m^3 and 30 µg/m^3 respectively. Following each air sampling event, at least one field blank will also be prepared and submitted for laboratory analysis of lead and/or arsenic particulate. The field blank will serve as a control for the filter media and sample handling activities. Samples will be submitted to a Washington State accredited analytical laboratory for analysis of lead and/or arsenic by NIOSH Method using ICP-AES.

Additional exposure assessments will be conducted if a change in location or condition of the work area, equipment, conditions and/or work practices is expected to substantially increase worker exposure to dust and/or metal particulates.

12.0 SITE CONTROL

The primary objective of site control is to minimize the exposure to potentially hazardous substances and/or situations. Supervision and controlling access to the work site is necessary to protect on-Site personnel, visitors, and the public.

Site control boundaries will be clearly identified and communicated by the SSOs. In addition, sufficient space must also be available to conduct operations while providing a protective buffer for persons and property outside the controlled areas. Exclusion zones will change throughout earthwork operations as the locations of and exposure to varying concentrations of metals will vary as the work progresses. The SSOs will adjust and maintain the exclusion zones to be protective of on-Site personnel, visitors, and the public through the entirety of the execution of the Work Plan. A representation of typical site control boundaries is presented in Figure 1.

12.1 Exclusion Zones

12.1.1 Hot Zones

Hot zones will be considered anywhere lead concentrations are greater than 1,000 mg/kg and in locations of active grading or dust generation. Work areas located within the fenced north end of the Site, including areas under proposed Building A, will be considered a hot zone wherever soils are disturbed at the time the work is conducted and until the contaminated soils and 2 feet of soil cap materials are relocated. As the most impacted area of the Site, it poses the highest potential risks to health and safety.

While performing work in a hot zone, all personnel must wear the PPE identified in Section 9.2 as well as disposable coveralls with integrated foot coverings. Respiratory protection requirements in the hot zones will be based on the results of the determination exposure assessments, as discussed in Sections 9.1 and 11.2.5.

No eating or drinking can occur within the hot zones. The hot zone must be clearly identified and should be isolated with cones, barricades, construction fencing, or high visibility caution tape to alert other Site workers of the increased health and safety risks in those areas.

12.1.2 Warm Zones

The warm zone is also known as the contaminant reduction zone. Warm zones will be identified as exclusion zones that are supporting work in the hot zones. The warm zones will be set up immediately adjacent to the hot zones and will contain all of the equipment and personnel necessary to decontaminate Site workers as they leave the hot zone. This contaminant reduction zone will be demarcated through decontamination stations, pop-up shelters, additional PPE, and emergency health and safety equipment.

While performing work in the warm zone, all personnel must wear the required PPE at all times, as identified in Section 9.2. Workers who leave the hot zones must enter the warm zone for decontamination procedures before entering the cold zones, or before leaving the Site. No eating or drinking can occur within the warm zone. Decontamination procedures are explained in greater detail in Section 13.0, below.

12.1.3 Cold Zones

Cold zones will be used to segregate "hazardous" operations from "non-hazardous" operations. Items that will be staged in the cold zones will include portable toilets, materials and equipment staging, utility services, water stations, mobile trailers and tents for operations and work breaks, and other operations and logistics that will support the work in the hot and warm zones. Cold zones may move depending on the operations but will generally be located at the south end of the Site. Work occurring within the cold zones will not require specialized PPE, such as respirators, but will still include the PPE required by all personnel at all times, identified in Section 9.2.

12.2 Site Security

Appropriate security measures will be established in coordination with the Site owner/operator and communicated to Site personnel. The objective of these measures is to (1) protect the public from potential exposure to physical/chemical hazards; (2) avoid public interference with personnel and safe work practices; and (3) prevent theft or vandalism of equipment staged at the Site.

The Site is currently protected to the north, east, and west by security cyclone fencing. Entry and egress from the Site will be from Monroe Street and will be limited to monitor for the presence of trespassers. Adequate signage will be erected to notify the general public that access to the Site is restricted.

13.0 DECONTAMINATION

The purpose of decontamination is to: (1) remove chemical containments from personnel and/or equipment and (2) significantly reduce the spread of chemical contaminants beyond the hot and warm zones.

Decontamination is intended to occur within the warm zone and should be appropriate to the chemical hazards present. For example, metals-contaminated soil on work boots/shoes may only require physical removal of the soil with a sturdy brush. However, decontamination of equipment may require additional steps to ensure contaminants are not spread beyond the hot/warm zones. Heavy equipment (i.e., excavators, trucks used for waste transportation, etc.) may require a combination of steps, including the placement of gravel at the entrance/exit of the Site. The location of the active decontamination stations will depend on the active hot zones and work areas. Decontamination stations will be located at the interface of the active hot and warm zones.

13.1 Personnel Decontamination Procedures

Personnel exiting the hot zone will be required to follow the following decontamination steps:

- Step into a secondary containment tub such as a plastic or vinyl kiddie pool with 1 to 2 inches of clean water in the bottom.

- Brush off loose soil, dust, vegetation, or other debris into the pool.
- Use a garden sprayer to spray clean water over the boots or disposable coveralls; use the brush to further remove sediment, if necessary.
- Briefly rinse the boots or disposable coveralls again, from top to bottom; step out of the secondary containment.
- Remove respirator and wipe with disposable cleaning wipes.
- Remove gloves and disposable coveralls by peeling off so they are inside-out; place in dedicated trash receptacle.
- Wash hands in a portable handwash station.

Signs will be provided that include the specific decontamination procedure to be conducted at each step of the decontamination process. Dedicated dumpsters will be made available for used PPE and will be disposed off-Site as municipal waste at LeMay Pierce County Refuse.

13.2 Equipment Decontamination Procedures

Large equipment such as dozers, graders, compaction equipment, loaders, and excavators will be decontaminated prior to leaving hot zones. Decontamination of large equipment will require the construction of a temporary containment area. The temporary containment areas will be constructed at the interfaces of active hot and warm zones. The containment area will consist of a berm of hay bales covered with 6-mm plastic sheeting. Hoses will be used to spray down the equipment. Water generated during the process will be pumped from a sump in the lowest corner of the containment area to storage tanks or drums for chemical testing.

Decontamination and rinsate water collected during decontamination of workers and equipment will be sampled and analyzed for lead and arsenic by Toxicity Characteristic Leaching Procedure (TCLP) EPA Method 1311. If TCLP results indicate concentrations of arsenic or lead greater than 5 milligrams per liter (mg/L), the rinsate will be designated as hazardous and will require disposal to the Pierce County publicly owned treatment works (POTW), as long as the rinsate concentrations meet the following requirements, per Table to Chapter 13.06 of the Industrial Pretreatment Standards:

- Arsenic 24-hour average concentration of 0.10 mg/L
- Lead 24-hour average concentration of 0.40 mg/L

If rinsate water cannot be sent to the POTW, it will be containerized and sent off-Site or stabilized and placed under Building B.

13.3 Personnel Training

TRC staff, Contractor personnel, and all on-Site visitors are required to acknowledge their understanding and willingness to comply with this HASP before admission to the Site by signing the HASP Compliance Agreement (Attachment A).

All on-Site personnel working within areas of the Site with COCs at concentrations exceeding the Site-specific action levels (hot and warm zones) shall meet the training requirements specified in the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard (29 CFR 1910.120(e).

14.0 MEDICAL MONITORING PROGRAM

TRC has established a medical surveillance program to assess, monitor, and help protect the health of employees, in particular, employees who may be exposed to potentially hazardous substances during Site work. Personnel will undergo medical examinations as follows:

- **Initial**: Pre-employment or prior to any assignment involving work in a hazardous or potentially hazardous environment. The initial examination is used to establish a baseline picture of health against which future changes can be measured, and to identify any underlying illnesses or conditions that might be aggravated by chemical exposures or job activities. This exam also certifies whether an employee is medically fit to wear a respirator.

- **Periodic**: At least once every 12 to 24 months (depending on the employee's involvement in field activities) to measure changes in health status. This exam certifies whether an employee is still medically fit to wear a respirator.

- **Upon Notification**: As soon as possible upon notification by an employee that they have developed signs or symptoms indicating possible overexposure to hazardous substances, or in response to an injury or exposure during an emergency situation.

- **Exit**: At termination of employment.

15.0 EMERGENCY RESPONSE PLAN

The TRC SSO will have controlling authority during an emergency. In the SSO's absence, the Alternate SSO will be in charge.

15.1 Evacuation Protocol

Evacuation protocol, routes, and assembly areas from the Site will be established by the SSO, and communicated to Field Personnel during the Tailgate Safety Meetings prior to initiating work. Wind direction will play an important role in determining safe evacuation routes and meeting locations.

In the event of an evacuation, personnel will meet at a pre-established assembly areas and the TRC SSO will conduct a "head count" to ensure all Field Personnel are present. Contractor SSO is responsible for being able to provide an accurate head count of Contractor personnel.

15.2 First Aid and CPR

TRC employees and Contractors with current first aid and cardiopulmonary resuscitation (CPR) certification and who are willing to provide first aid and CPR will be asked to identify themselves at Tailgate Safety Meetings. Their names will be documented on the Daily Pre-Job Safety Briefing and HASP Compliance Agreement (Attachment A).

It is preferable that one CPR-certified member be working in proximity to those workers with increased health and safety risks. CPR and first aid should be administered if possible in the cold or warm zone(s).

15.3 Emergency Medical Assistance

A list of emergency medical assistance sources has been established as part of this HASP. Attachment D lists the names, locations, and telephone numbers of emergency response organizations in the vicinity of the project site, and a map to the nearest hospitals with an emergency room.

A vehicle shall be available on-Site during work activities to transport injured personnel to the identified emergency medical facilities, if necessary. Company vehicles are to be equipped with a fire extinguisher and first aid kit.

15.4 Emergency Procedures

In the event of an accident, injury, or other emergency, remember to:

- **Stop work and REMAIN CALM.**
- **Move personnel to a safe location, preferably upwind of operations (evacuation plan). If the incident is the result of a fall, do not move injured personnel until a trained medical expert states that it is safe to do so.**
- **Call 911 or notify other emergency facilities, as necessary. If the emergency occurs in a hot zone, it will be necessary to contact the SSO via radio. The SSO will then contact 911.**
- **Address medical emergencies and apply first aid, if necessary.**
    - Move injured or exposed person(s) from immediate area only if it is safe to do so.

- If serious injury or life-threatening condition exists, call 911. Clearly describe the location, injury and conditions to the dispatcher. Designate a person to direct emergency equipment to the injured person.

- **Contain physical hazards.**
  - Act only if hazard is minimal and you are trained to deal with the situation. Otherwise evacuate upwind of operations and wait for emergency services to arrive.

- **Notify SSO and initiate incident reporting procedures.**
  - Refer to Section 4.0 for contact information. In the event the SSO is not available, the order of notification should be (1) Assistant SSO; (2) TRC Project Manager, and (3) TRC Director of Human Resources (if incident involves injury) or TRC National Safety Director (if incident does not involve injury).
  - TRC SSO is to notify TRC Project Manager/Supervisor as soon as reasonably possible.

- Do not resume work until the SSO has determined it is safe to do so.

15.5 Non-Emergency Medical Assistance

If an injury does occur and it is not life threatening, then the employee or employee's supervisor/project manager should contact WorkCare within the first hour after an injury. WorkCare's Early Incident Intervention information is provided in Attachment E. This information will help assist the injured employee by connecting them with instant access to a medically qualified professional in order to provide guidance on appropriate first aid measures and medications.

16.0 INCIDENT REPORTING

In case of an accident, TRC personnel are to immediately report the incident to their Project Manager/Supervisor and follow the TRC incident reporting procedures detailed in the TRC Incident Notification Report (Attachment F). TRC's incident reporting forms are available through the Project Manager and include:

- TRC Incident Report
- Driver's Report of Accident
- TRC Potential / Near Miss Reporting Form
- TRC Employees Report of Incident
- TRC Witness Report of Incident
- Corrective Action Form

All incidents and near misses are investigated in accordance with TRC's Injury and Illness Prevention Program (IIPP). The TRC Incident Report Form is to be completed and submitted to the TRC National Safety Director within 24 hours following any incident.

Contractor personnel are to report incidents to their SSO who is then required to report the incident to the TRC SSO, TRC Alternate SSO, or TRC Project Manager immediately.

Some important information to include when reporting an incident include:

1. A description of the event (including date and time).
2. Details regarding personal injury and property damage, if any.
3. Whether emergency services were notified (i.e., medical facilities, fire department, police department) and the basis for that decision. Including time and names of persons/agencies notified, and their response.
4. Clarify the need for and type of TRC support.
5. Immediate corrective action(s) taken.

17.0 HEALTH AND SAFETY PLAN SIGNATURE PAGE

Job Safety Analysis Author	Date:	HASP Author	Date:
Ramsey Mauldin		Ramsey Mauldin	
	08/26/2021		08/26/2021
_____	_____	_____	_____

Review/Approvals:

Site Safety Officer Facility/Field Supervisor	Date:	Project Manager/ Supervisor*	Date:
Ramsey Mauldin	08/26/2021	Adam Morine	08/26/2021
_____	_____	_____	_____
Local Safety Coordinator* ☐ **NA**	**Date**	**EHS Supervisor/Safety*** ☐ **NA**	**Date**
_____	_____	_____	_____

Additional Information or Instruction:

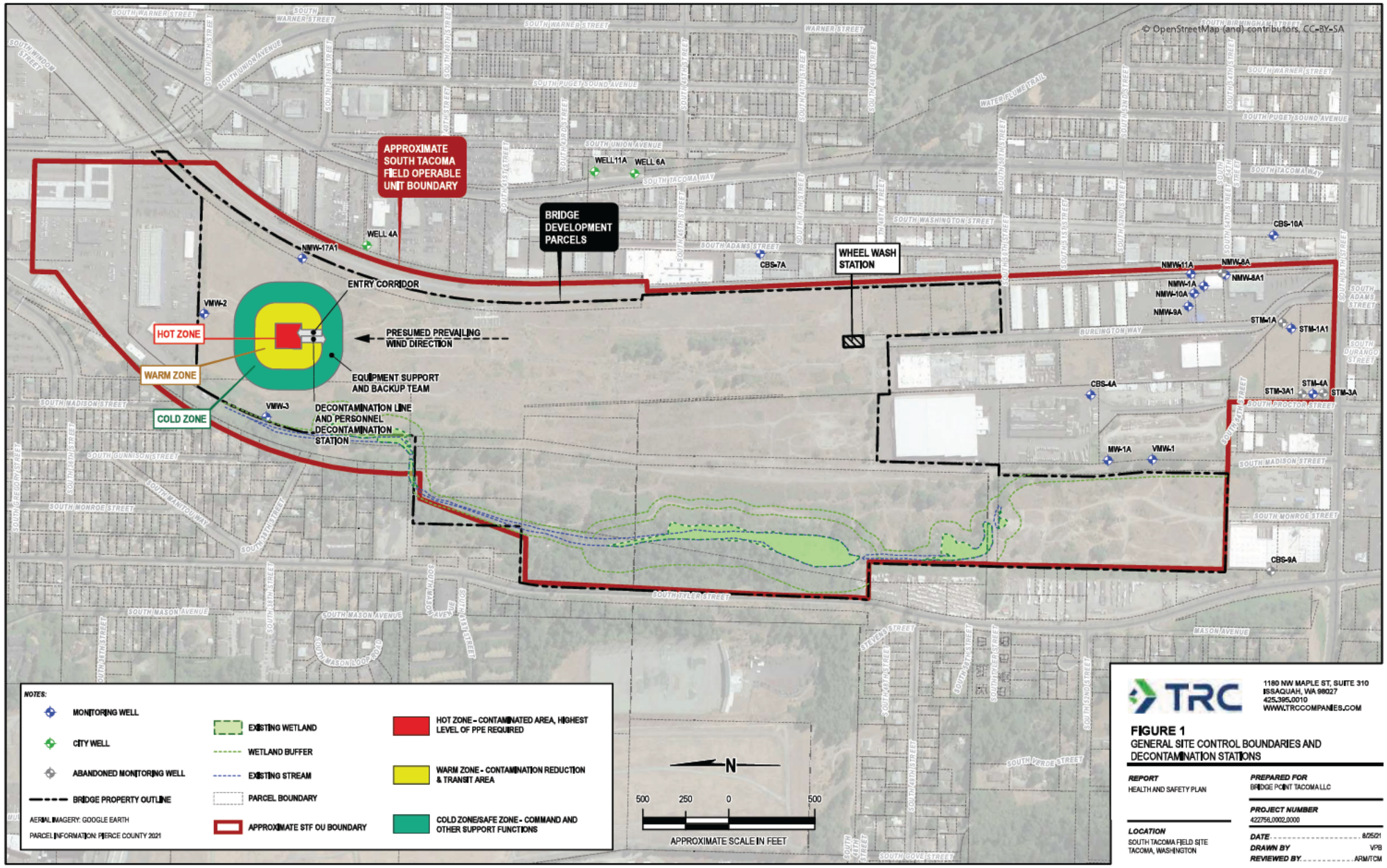
_____

_____

_____

* Note: **For most projects, the Project Manager/Supervisor will review, approve and sign the HASP.** In the event the operations are beyond the normal scope of work, additional review is available upon the request from the PM/Supervisor. The Local Safety Coordinator is the first recourse for reviewing HASPs **not** involving high-risk operations. It is recommended that for HASPs involving high-risk operations (i.e. hazardous exposures to chemicals, large scale or deep excavations, confined space entry, etc.), the EHS Supervisor and/or a Safety Professional [Certified Industrial Hygienist (CIH), Certified Safety Professional (CSP) or other professionally qualified person] be consulted for review of the HASP to ensure proper protective measures are being implemented.

Figure



TRC

1180 NW MAPLE ST, SUITE 310
ISSAQUAH, WA 98027
425.395.0010
WWW.TRCCOMPANIES.COM

FIGURE 1
GENERAL SITE CONTROL BOUNDARIES AND DECONTAMINATION STATIONS

REPORT
HEALTH AND SAFETY PLAN

PREPARED FOR
BRIDGE POINT TACOMA LLC

PROJECT NUMBER
422756.0002.0000

LOCATION
SOUTH TACOMA FIELD SITE
TACOMA, WASHINGTON

DATE 8/25/21
DRAWN BY VPB
REVIEWED BY ARM/TCM

Attachment A
Daily Pre-Job Safety Briefing and HASP Compliance Agreement

Daily Pre-Job Safety Briefing

Project Name: _____ Project Number: _____

Work Location: _____ Date: _____

Tasks Performed: _____ Time: _____ AM PM

Client Name: _____ Submitted By: _____

HASP Available Onsite: Yes ☐ No ☐ Emergency Evacuation Location: _____

Emergency Facility(s): _____ Number(s): _____

Physical Address: _____

First Aid/CPR Persons: _____

For Emergencies Dial 911/For Non-Emergencies Dial WorkCare (888) 449-7787

Personal Protective Equipment Required	Yes	No	Type
Fall Protection	☐	☐	_____
body harness, lifelines, barricades, other (specify)			
Eye/Face	☐	☐	_____
goggles, face shield, glasses, other (specify)			
Respirator	☐	☐	_____
SCBA, supplied air, HEPA, dust, other (specify)			
Foot Protection	☐	☐	_____
safety toe, EH rated, rubber boots, other (specify)			
Hand Protection	☐	☐	_____
Kevlar, cut resistant, chemical, EH, other (specify)			
Head Protection	☐	☐	_____
hard hat, helmet, electrical hazard, other (specify)			
Clothing	☐	☐	_____
coveralls, welding, sleeves, rain, FR, reflective vest, chemical, other (specify)			
Hearing Protection	☐	☐	_____

Procedures/Programs Required	Yes	No
Hot Work	☐	☐
LOTO/Energy Control	☐	☐
Trenching/Excavation	☐	☐
Signs/Barricades	☐	☐
Confined Space	☐	☐
Cranes/Critical Lifts	☐	☐
Scaffolds/Aerial Lifts	☐	☐
Employee Certification/Training Required		
Crane Operator	☐	☐
Forklift Operator	☐	☐
Mobile Equipment Operator	☐	☐
Railroad/eRailsafe	☐	☐
OSHA 10/30	☐	☐
HAZWOPER	☐	☐
MSHA	☐	☐
Client Specific Training (_____)	☐	☐

Additional Considerations

Work Procedures:
☐ Check for utility clearance ☐ Adequate work zone
☐ Vehicle grounds ☐ Working clearances
☐ Discuss potential exposure to hazards

People: ☐ Worker fatigue ☐ Other work groups
☐ Public safety ☐ Pedestrian control ☐ Experience
☐ Traffic control ☐ Other utilities ☐ Spec. Training

Tools/Equipment: ☐ Inspection of drilling equipment
☐ Inspection of hoses
☐ Inspection of tools
☐ Specialized tools/equipment
☐ Correct tool/equipment for the job

Special Precautions: ☐ Adjacent structures
☐ Condition of structures ☐ Weather conditions
☐ Lighting conditions ☐ Terrain ☐ Water bodies
☐ Spills and leaks ☐ Environmental ☐ Cultural

Other: _____

If Conditions CHANGE…Stop Work, Review, and Revise the Plan!!

Daily Pre-Job Safety Briefing

Hazards Associated with the Job (focus on the GEMS)

Gravity	Electrical	Mechanical	Kinetic	Other/Environmental
☐ Falling from a height	☐ Electrical contact	☐ Equipment failure	☐ Traffic	☐ Asbestos/Lead
☐ Falling objects	☐ Utility strike	☐ Cable tension	☐ Driving conditions	☐ Animals/Insects
☐ Falling structures		☐ Moving parts	☐ Moving/Shifting loads	☐ Confined space
☐ Climbing obstructions		☐ Crane/Rigging	☐ Rotating machinery	☐ Excavations
☐ Dangerous trees			☐ Vehicle stability	☐ Heat/Cold
			☐ Heavy equip. operation	☐ Poisonous Plants

List all hazards associated with this task

Signatures of Crew Members Present

Barriers to eliminate/control above hazards?

Supervisor Signature Date

OSHA's Unqualified Minimum Clearances

Powerline Voltage Phase to Phase (kV)	Minimum Safe Clearance (ft.)
50 or below	10
Over 50 to 200	15
Over 200 to 350	20
Over 350 to 500	25
Over 500 to 750	35
Over 750 to 1,000	45

Post Task Safety Analysis

Did any injuries or incidents occur today? If yes, explain.

☐ Yes ☐ No

Was the injury or incident reported to the safety department?

☐ Yes ☐ No ☐ N/A

What problems did you have with today's work assignment?

What can we do tomorrow to improve performance?

HASP COMPLIANCE AGREEMENT

By signing below, I have completed the Tailgate Safety Meeting Checklist, reviewed this Site Health and Safety Plan and the Job Safety Analysis (JSA) and understand their contents. I hereby agree to comply with all safety requirements outlined herein:

TRC

Signature: _____, Site Safety Officer (SSO)

Print Name: _____ Date: _____

Signature: _____, Asst. Site Safety Officer (Asst. SSO)

Print Name: _____ Date: _____

Contractor:

Signature: _____, Site Safety Officer (SSO)

Print Name: _____ Date: _____

Signature: _____ Asst. Site Safety Officer (Asst. SSO)

Print Name: _____ Date: _____

Contractor:

Signature: _____, Site Safety Officer (SSO)

Print Name: _____ Date: _____

Signature: _____, Asst. Site Safety Officer (Asst. SSO)

Print Name: _____ Date: _____

TRC Employees / Contractor Personnel / Visitors

Signature: _____Date: _____

Print Name: _____Company: _____

Signature: _____Date: _____

Print Name: _____Company: _____

HASP COMPLIANCE AGREEMENT (cont.)

By signing below, I have completed the Tailgate Safety Meeting Checklist, reviewed this Site Health and Safety Plan and the Job Safety Analysis (JSA) and understand their contents. I hereby agree to comply with all safety requirements outlined herein:

TRC Employees / Contractor Personnel / Visitors (cont.)

Signature: _____ Date: _____
Print Name: _____ Company: _____

Signature: _____ Date: _____
Print Name: _____ Company: _____

Signature: _____ Date: _____
Print Name: _____ Company: _____

Signature: _____ Date: _____
Print Name: _____ Company: _____

Signature: _____ Date: _____
Print Name: _____ Company: _____

Signature: _____ Date: _____
Print Name: _____ Company: _____

Signature: _____ Date: _____
Print Name: _____ Company: _____

Signature: _____ Date: _____
Print Name: _____ Company: _____

Signature: _____ Date: _____
Print Name: _____ Company: _____

Signature: _____ Date: _____
Print Name: _____ Company: _____

Attachment B
Field Note Form

FIELD NOTE FORM

Project Number: _____ Page ___ of ___

Project Name: _____

Date: _____ **Weather:** _____

TRC Personnel: _____

Subcontractors: _____

TRC

FIELD NOTE FORM

Attachment C
Job Safety Analysis

Job Safety Analysis (JSA)

COMPANY/ PROJECT NAME or ID/ LOCATION (City, State)	DATE PREPARED FOR HASP:	☒ NEW
TRC / South Tacoma Field (S. 56th, Tacoma)	August, 2020	☐ REVISED
JSA WORK ACTIVITY (Description): **Mobilization**	List of Contractor(s) and key work activity: HOS-Earth moving operations	

SITE SPECIFIC JSA AUTHOR	POSITION / TITLE	DEPT	SIGNATURE
Adam Morine	**Senior Engineer**	**ECRW**	

TRC HEALTH AND SAFETY MANAGEMENT	POSITION / TITLE	APPROVAL DATE
Doug Kunkel	**ISS HAS Director**	
Ramsey Mauldin	**Site Safety Officer**	

PERSONAL PROTECTION EQUIPMENT (PPE) QUICK SUMMARY
Required PPE (indicate with "R") vs. Must Have Available On-site (indicate "A")

__R__ REFLECTIVE VEST __A__ HARD HAT __R__ GLOVES: ANSI Cut Level ____ Kevlar __R__ SAFETY GLASSES ____ GOGGLES ____ FACE SHIELD	__A__ HEARING PROTECTION __R__ SAFETY SHOES: Steel Toe ____ 5pt.HARNESS / LANYARD PPE CLOTHING: ____ Coveralls __A__ Tyvek Suit ____ Nomex ____ Other (specify):	RESPIRATORY PROTECTION: ☐ NA __R/A__ ½ face Air Purifying Respirator (APR) ____ Particulate Mask: ☐ PM100 ☐ PM95 ____ Cartridge: ☐ P100-Multigas ☐ ____ ____ Full face ARP; specify cartridge type: ____ Air Supplied Respirator ____ SCBA ____ Air-line	Additional PPE: .

Always perform a Safety Assessment (Hazard Hunt): 1) prior to starting work; 2) when changing tasks; and 3) throughout the day. Focus on each new task, procedures, and skill sets to be used.

[1] JOB TASKS	[2] POTENTIAL HAZARDS	[3] HAZARD CONTROLS (beyond wearing "Required" PPE)
1) Grading	a. Chemical Hazards / Airborne particulates	Conduct perimeter and personal air monitoring. Perform negative exposure assessment, conduct medical monitoring, safety meetings and acknowledgement forms.
	b. Physical Hazards	Daily site-specific tailgate-style meetings. Describe the slips, trips, falls, water hazards, heavy equipment operation, communication program, create haul roads, establish work zones, keep clean work spaces, pick up tools and put away equipment when not in use.

Always perform a Safety Assessment (Hazard Hunt): 1) prior to starting work; 2) when changing tasks; and 3) throughout the day. Focus on each new task, procedures, and skill sets to be used.		
[1] JOB TASKS	[2] POTENTIAL HAZARDS	[3] HAZARD CONTROLS (beyond wearing "Required" PPE)
2) Compaction	Chemical Hazards/Airborne dust	Conduct perimeter and personal air monitoring. Perform negative exposure assessment, conduct medical monitoring, safety meetings and acknowledgement forms.
	Physical Hazards	Daily site-specific tailgate-style meetings. Describe the slips, trips, falls, water hazards, heavy equipment operation, communication program, create haul roads, establish work zones, keep clean work spaces, pick up tools and put away equipment when not in use.
	Noise	Wear hearing protection when around compaction equipment.

Always perform a Safety Assessment (Hazard Hunt): 1) prior to starting work; 2) when changing tasks; and 3)		
[1] JOB TASKS	[2] POTENTIAL HAZARDS	[3] HAZARD CONTROLS (beyond wearing "Required" PPE)
3) Excavation	Chemical Hazards/Airborne dust	Conduct perimeter and personal air monitoring. Perform negative exposure assessment if necessary, conduct medical monitoring, safety meetings and acknowledgement forms. Maintain wind direction and speed.
	Physical Hazards	Daily site-specific tailgate-style meetings. Excavating and heavy equipment operation, communication program, use and maintain haul roads.
	Noise	Wear hearing protection when working around excavators, graders and loaders
4) Cap construction	Chemical Hazards/Airborne dust	Conduct perimeter and personal air monitoring. Perform negative exposure assessment if necessary, conduct medical monitoring, safety meetings and acknowledgement forms. Maintain wind direction and speed.
	Physical Hazards	
	Noise	

Field Notes:

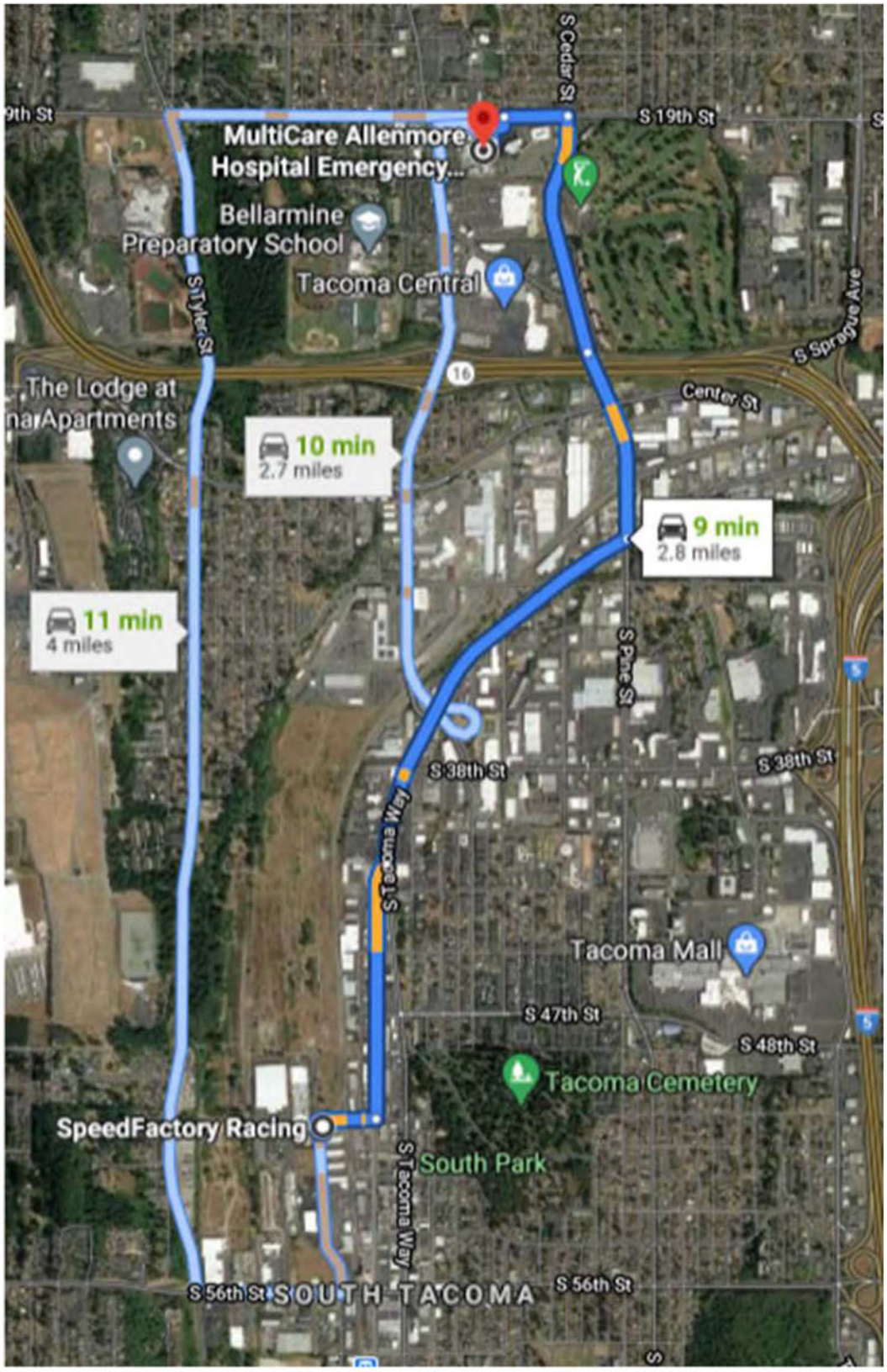
L MITATION: As part of TRC's EHS Policy, a JSA is provided by TRC for its employees. The purpose of a JSA is NOT to identify all hazards associated with a task, but to identify key potential hazards to get TRC and other onsite personnel thinking about other potential safety hazards and mitigating actions for unsafe conditions and behavior during various works. TRC recognizes that JSA's may not cover every conceivable step or hazard that emerges during a job, so we've provided a "Field Change" section below to amend a JSA if required. The JSA does not supersede or replace any local, state or federal permit, regulation, statute or other entities policies and procedures but is simply a tool for enhancing the execution of safe work at a jobsite under TRC's supervision. Similarly, all subcontractors are required to provide their own JSA(s) for their specialty prior to performing any work for TRC or its customers in accordance with TRC's EHS Policy; however, any unsafe condition or hazard not covered in any JSA is ultimately the direct responsibility of the person or entity performing the work.

Attachment D
Contact List and Route to Hospital

Emergency Planning		
Service	**Name**	**Number**
Local Police:	Tacoma Police Department	911
Local EMS:	Tacoma Fire Department	911
Local Fire Department:	Tacoma Fire Department	911
Local Hospital:	Multicare Allenmore Hospital Emergency Department	253-459-6400
Client Contact:	Matt Gladney	425-505-5173
Site Phone Number:	TRC personnel	
WorkCare		888-449-7787
TRC Office Safety Coordinator	Douglas Kunkel	425-395-0016 office (b) (6) cell

Directions to Nearest Medical Facility (Map Attached):

MultiCare Allenmore Hospital, 1901 S Union Ave, Tacoma, WA 98405
Take S 50th St to S Washington St, TURN LEFT
Take S Washington St to S Tacoma Way TURN LEFT
Take S Tacoma Way to S Pine St, TURN LEFT
S Pine St becomes S Cedar St, continue NORTH.
Take S Cedar St to S 19th St, TURN LEFT
Take S 19th St to S Lawrence St, TURN LEFT
DESTINATION WILL BE ON THE RIGHT
MultiCare Allenmore Hospital Emergency Department
1901 S Union Ave, Tacoma, WA 98405


MultiCare Allenmore Hospital Emergency...
Bellarmine Preparatory School
Tacoma Central
The Lodge at
Apartments
10 min
2.7 miles
9 min
2.8 miles
11 min
4 miles
S Cedar St
S 19th St
S Tyler St
S Sprague Ave
Center St
S Pine St
S 38th St
S Tacoma Way
Tacoma Mall
S 47th St
S 48th St
Tacoma Cemetery
SpeedFactory Racing
South Park
S 56th St
SOUTH TACOMA

Attachment E
WorkCare Early Incident Intervention

WorkCare® Making Health Count

FACT SHEET

EARLY INCIDENT INTERVENTION®

Immediate Access to Medical Advice for Work Related Incidents

(888) 449-7787

INTRODUCTION

WorkCare, Inc. (WorkCare) and TRC have partnered together to promote Incident Intervention®, a resource designed to support company safety goals/targets—while reducing runaway-costs associated with workplace injuries and illnesses.

PURPOSE

Early Incident Intervention provides TRC employees with **IMMEDIATE** telephonic access to WorkCare clinicians at the time of a presumed, non-emergency workplace injury or illness. Clinicians provide expert guidance on the evaluation of symptoms, appropriate first aid, and the need for additional medical evaluation or treatment.

When utilizing this service within the first hour of an incident, known as the "Golden Hour," licensed medical staff can guide the case so that medical evaluation and treatment are rendered appropriately.

> ***"…helps the worker traverse the unpredictable terrain of work-related injuries and illness."***

PRINCIPLES OF EARLY INCIDENT INTERVENTION

- Utilizes principles of the "Golden Hour."
- Provides workers immediate clinician support at the time of an incident.
- Focuses on providing the right care, at the right time in the proper setting.

BENEFITS FOR EMPLOYEES

- Instant access to a medically qualified professional for evaluation of symptoms and possible outcomes.
- Professional guidance on appropriate first aid measures and medications.
- Professional advice regarding the need for additional medical evaluation or treatment.

BENEFITS FOR TRC

- Point of contact for emergency and non-emergency medical clinicians.
- Triages the incident to determine risk and urgency, delivering interventions that are consistent with medical guidelines for the specified injury and illness.
- Maintains communication with clinicians to ensure accurate and timely reporting.

Attachment F
Incident Notification Report

INCIDENT NOTIFICATION REPORT

(To be completed immediately after an Injury, Illness, Incident or Significant Near Miss by Employee's Supervisor and Employee involved)

Incident Category

☐ Injury/Illness ☐ Near Miss/Loss ☐ Property Damage ☐ Other

1 Incident Location: _____

2 Project #: _____

3 Client: _____

4 Date Incident Occurred: _____ Time: _____

5 Date Incident Reported: Time:

TRC Employee Information

6 Name: _____ Phone: _____

7 Office: _____ Address: _____

8 Supervisor Name: _____ Phone: _____

9 Title or Occupation: _____

10 Sector/Practice:

Incident Description

11 Task Performed/Description of Incident:

12 Conditions at the Time of Incident (weather, lighting, etc.):

13 Description of Property Damage:

Employee Injury or Illness Description

14 Describe the Injury or Illness:

15 First Aid/Medical Treatment Administered:

16 Was WorkCare Contacted? ☐ Yes ☐ No

17 Name of Doctor's Office, Clinic or Hospital: _____

18 Address: Phone:

INCIDENT NOTIFICATION REPORT

(To be completed immediately after an Injury, Illness, Incident or Significant Near Miss by Employee's Supervisor and Employee involved)

Subcontractor Involvement

19 Was a subcontractor involved? ☐ Yes ☐ No

20 Name of Company: _____

21 Address: _____

22 Contact Name: _____ Phone: _____

23 Description of the Incident:

Witness Information

24 Were there witnesses to the incident? ☐ Yes ☐ No

25 Name(s) Address(es) Number(s)

_____

_____

Immediate Corrective Actions

26 Describe the Immediate Corrective Actions Taken:

Client Notification

27 Is there a client incident notification requirement? ☐ Yes ☐ No

28 Contact Name _____

29 Date of Notification: _____ Time: _____

30 Notification Method:

Supervisor: _____ Signature: _____ Date: _____

Employee: Signature: Date: