

Site-Specific Environmental Health and Safety Plan (EHASP)

Wood Middle School

420 Grand Street

Alameda, Alameda County, California 94501

Terracon Project Number: NB257123

EnviroStor Case No. 60003799

May 27, 2025, revised ~~June 10~~August 14, 2025



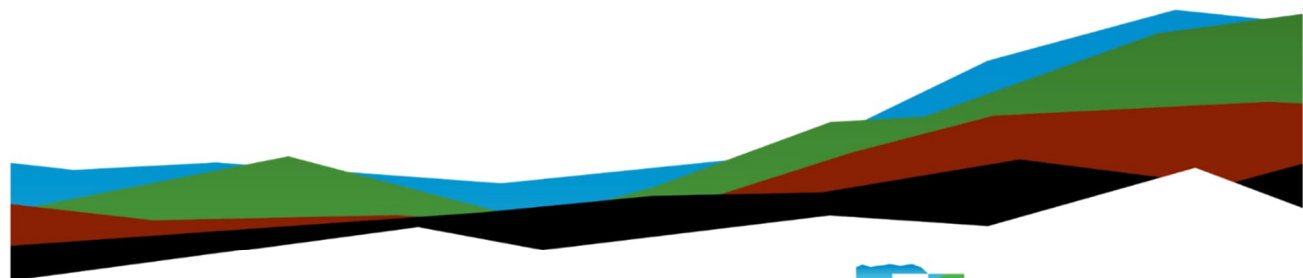
For



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1.0 General

1.1 Introduction

This document addresses the site safety issues associated with the redevelopment of the Wood Middle School campus, including the installation of a new roadway, located at 420 Grand Street in Alameda, California (Site).

This site-specific Environmental Health & Safety Plan (EHASP) has been prepared by Terracon for the use of contractors performing excavation and handling of hexavalent chromium-contaminated soil at the site.

This plan has been developed to provide: (1) health and safety guidelines for those who will be in direct contact with contaminated soil during site excavation and earthwork as part of the project; (2) provide protection to the public and surrounding community during site remediation; and (3) contingency procedures to be implemented by contractors to protect worker health and safety.

1.2 Background

The project site is located within the Wood Middle School Campus located at 420 Grand Street in Alameda, Alameda County, California. The site encompasses an approximately 5.4-acre area, identified as Alameda County Assessor Parcel Number (APN) 17-1250-1-5. The site is undergoing development of a new Wood Middle School campus as of November 2024. The adjoining properties consist of residential neighborhoods, Rittler Park, and portions of the former Donald D. Lum Elementary School campus, currently used as a temporary campus for Wood Middle School, and associated athletic fields.

In addition to the procedures and requirements described in this EHASp, all onsite personnel shall follow applicable procedures and requirements specified by applicable Federal, State, and local authorities. Accordingly, this site-specific EHASp meets the Federal requirements of 29 CFR 1910.120. As such, this EHASp addresses the activities associated with field operations to be conducted at the site in conjunction with the redevelopment activities. Any modifications made to this EHASp because of encountered field conditions must be approved by the site-safety officer (SSO) and/or project manager (PM). All above and/or below grade site remediation work where contact with contaminated soil is expected is included in this specification and subject to the requirements of HAZWOPER standard. HAZWOPER provisions do not apply to above-grade work where contact with existing soil is not expected.

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This plan addresses the potential for hazardous constituents identified at the site in accordance with the hazardous material regulations found in California Occupational Health and Safety Administration (Cal/OSHA) Construction Safety Orders within Title 8 of the California Code of Regulations (CCR *General Industry Safety Orders §5192*). Additional work tasks and/or activities performed at other locations of the site may involve compliance with other hazardous materials/safety regulations and thus, this plan may not include appropriate information or protective measures for those activities.

This plan is not intended to meet or satisfy applicable regulatory standards associated with construction safety (i.e., trenching/shoring, electrical safety, welding/cutting, etc.). Furthermore, the construction activities to be conducted at the site are not applicable to those requirements outlined in the HAZWOPER standard.

Compliance with this plan is required of all personnel, contractors, subcontractors, etc. associated with the earthwork activities mentioned above. Other construction activities not currently expected nor specifically identified herein, but where contact with affected soil may occur, shall also comply with this plan.

A copy of this EHASP will be available at the Site during all construction activities where the environmental conditions described herein might be encountered. At this time, it is expected these activities consist of: concrete slab/asphalt demolition and removal, soil excavation, soil handling/loading, soil disposal, foundation installation, piling, and utility installation work.

1.3 Purpose

The primary purpose of this plan is to provide appropriate personnel with an understanding of the potential chemical and general physical hazards that exist or may arise while the applicable tasks of this project are being performed. Additionally, the information contained herein will define the safety precautions necessary to respond to such hazards should they occur.

1.4 Objective

The primary objective is to ensure the well-being of all field personnel and the community surrounding this site. In order to accomplish this, project staff and approved subcontractors shall acknowledge and adhere to the policies and procedures established herein. Accordingly, all personnel and subcontractors assigned to this project and visitors to the site shall read this plan and sign the Agreement and Acknowledgment Statement (Appendix A) to certify that they have read, understood, and agreed to abide by its provisions.

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1.5 Amendments

Any changes in the scope of this project and/or site conditions must be amended in writing on the EH&S Plan Amendment Sheet (Appendix B) and approved by the Health and Safety Representative or applicable individual.

1.6 Medical Monitoring Program

All personnel engaged in work that will disturb contaminated soil for this project will be required to be medically qualified, trained in the use of respiratory protection, and fit-tested (within the last year) prior to donning a respirator should respiratory protection become necessary. If site conditions vary drastically from those anticipated in the plan, other medical surveillance procedures may become necessary, as appropriate or required.

1.7 Employee Training

The environmental conditions of the property shall be disclosed to all workers and subcontractors who will be engaged in earthwork activities including soil excavation, dewatering (if any), and other subsurface activities where contact with arsenic and/or hexavalent chromium contaminated soil is possible. It is the individual contractor's/subcontractor's responsibility to provide additional site-specific construction safety training. The contractor should also be aware that the possibility exists that hazardous materials and/or conditions may differ from those expected and described herein. These conditions could necessitate compliance with additional regulatory requirements (e.g., 8 CCR 5192 HAZWOPER, 8 CCR 5144 RESPIRATORY PROTECTION) and should be brought to the attention of the SSO or HSC immediately.

1.8 Safety Meetings

Safety meetings must be held at least once every 5 working days and may include a discussion of site work plans, personal protective equipment, site rules, site hazards, trenching/shoring, and the requirements of this Safety Plan. Meeting frequency should be reevaluated as site conditions and work activities change.

2.0 Project Personnel

2.1 Background

All contractors and subcontractors will act in accordance with applicable federal, State, regional, and local regulations during all phases of the project. The following management structure will be instituted for the purpose of successfully and safely completing this project.

2.2 Contact Summary

The primary contact for this project will be Ms. Ruth Boyd with Alameda Unified School District (property owner). Contact information for Ms. Boyd and other parties involved in the project are provided below:

Project Responsibility	Company Name	Name	Phone #
Owner/ Developer	Alameda Unified School District (AUSD)	Monty Patterson	Cell: (510) 812-9228
Construction Manager (Site Superintendent)	Lathrop Construction Associates, Inc.	Brian Bianchi	Cell: (707) 974-2689
Waste Transport	TBD		Cell:
EH & S Director	TBD		Cell:
Site Safety Manager	TBD		Cell:
Environmental Project Manager	Terracon	Sadie Bodiford Joe Rosenbery, PG	Cell: (916) 246-5080 Cell: (714) 336-4043
Health & Safety Consultant	Terracon	David Block, Ph.D. Jeremy Mott, CIH	Cell: (925) 382-9760 Cell: (408) 591-1537

2.3 EH & S Director – Lathrop; Brian Bianchi

The Health & Safety Manager shall be responsible for the overall coordination and oversight of the EHASP. Specific duties will include:

- Approving the selection of and providing the types of personal protective equipment (PPE) to be used on site for specific tasks and monitoring the compliance of field

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personnel for the routine and proper use of the PPE that has been designated for each task. For the current Site conditions, this EHASP identifies Level D PPE as the anticipated PPE recommended. The Technical Advisor/Health & Safety Consultants will recommend changes to the PPE Levels if warranted based on air and personal air monitoring data, and/or future soil analytical data.

- Monitoring the compliance activities and the documentation processes undertaken by the Site Safety Officer.
- Ensuring compliance with Cal/OSHA Construction Safety Orders in Title 8 CCR. Additionally, ensuring compliance with the Hazardous Waste Operations & Emergency Response Standard Title 8 CCR 5192, when site conditions are identified to be applicable under this standard. The Technical Advisor/Health & Safety Consultants will provide notice to the EH & S Director if the Hazardous Waste Operations & Emergency Response Standard Title 8 CCR 5192 are applicable to the site based on future monitoring and sampling data.
- Evaluating weather and chemical hazard information and making recommendations to the Project Manager about any modifications to work plans or personal protection levels in order to maintain personnel safety.
- Coordinate upgrading or downgrading PPE with the Site Safety Officer and the Technical Advisor / Health & Safety Consultants, as necessary, due to changes in exposure levels, monitoring results, weather, or other site conditions.
- Approving all field personnel conducting earthwork activities, taking into consideration their level of safety training, their physical capacity, and their eligibility to wear the protective equipment necessary for their assigned tasks; (i.e., respirator fit testing results). For the current Site conditions, this EHASP identifies Level D PPE as the anticipated PPE recommended. The Technical Advisor/Health & Safety Consultants will recommend changes to the PPE Levels if warranted based on air and personal air monitoring data, and/or future soil analytical data. It will be the responsibility of the EH & S Director to approve field personnel for activities requiring PPE Levels more restrictive than Level D.
- Stopping work or changing work assignments or procedures if any operation threatens the health and safety of workers or the public. For activities relating to the Soil Management Plan, the Technical Advisor/Health & Safety Consultants will notify the EH & S Director of changed site conditions based on air and personal air monitoring data, and/or future soil analytical data.
- Stopping work on the site or changing work assignments or procedures if unidentified hazards are encountered and reporting those hazards immediately to the Environmental Project Manager and/or Site Health & Safety Representative/Consultant. For activities relating to the Soil Management Plan, the Technical Advisor/Health & Safety Consultants will notify the EH & S Director of changed site conditions based on air and personal air monitoring data, and/or future soil analytical data.

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- Dismissing field personnel from the site if their actions or negligence endangers themselves, co-workers, or the public.
- Reporting any signs of fatigue, work-related stress, or chemical exposures immediately or as soon as possible to the Environmental Project Manager and/or Site Health & Safety Representative/ Consultants.
- Reporting any accidents or violations of the plan immediately or as soon as possible.
- Knowing emergency procedures, evacuation routes and the telephone numbers of the ambulance, local hospital, poison control center, fire, and police departments.
- Ensuring that all project-related earthwork personnel have signed the personnel agreement and acknowledgment form contained in this plan; and
- Ensuring that air monitoring will be conducted in general accordance with Section 5.0 of this plan. The responsibilities of the EH & S Director include notifying the Environmental Project Manager and/or Site Health & Safety Representative/ Consultant of the site construction schedule, project progress, and changes in schedule. Additionally, the EH & S Director will ensure air monitoring is being conducted at the applicable times agreed upon with the Environmental Project Manager and/or Site Health & Safety Consultants.

2.4 Site Safety Manager – Lathrop; Caleb Castanchoa

The Site Safety Officer shall be responsible for the implementation of the EH&S Plan. Specific duties will include:

- Monitoring the compliance of field personnel for the routine and proper use of the PPE designated for each task. For the current Site conditions, this EHASP identifies Level D PPE as the anticipated PPE recommended. The Technical Advisor/Health & Safety Consultants will recommend changes to the PPE Levels if warranted based on air and personal air monitoring data, and/or future soil analytical data.
- Routinely inspecting PPE and clothing to ensure that it is in good condition and is being stored and maintained properly.
- Stopping work on the site or changing work assignments or procedures if any operation threatens the health and safety of workers or the public. For activities relating to the Soil Management Plan, the Technical Advisor/Health & Safety Consultants will notify the Site Safety Manager of changed site conditions based on air and personal air monitoring data, and/or future soil analytical data.
- Monitoring personnel who enter and exit the site and all controlled access points within the soil work zones.
- Reporting any signs of fatigue, work-related stress, or chemical exposures to the Project Manager and/or Health and Safety Manager immediately or as soon as possible.

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- Dismissing field personnel from the site if their actions or negligence endangers themselves, co-workers, or the public, and reporting the same to the Project Manager and/or Health and Safety Manager immediately or as soon as possible.
- Reporting any accidents or violations of the site safety plan to the Project Manager and/or Health and Safety Manager immediately or as soon as possible.
- Knowing emergency procedures, evacuation routes and the telephone numbers of the ambulance, local hospital, poison control center, fire, and police departments.
- Ensuring that all project-related personnel have signed the personnel agreement and acknowledgment form contained in this EH&S Plan.
- Coordinate upgrading and downgrading of PPE with the Health and Safety Manager, as necessary, due to changes in exposure levels, monitoring results, weather, and other site conditions. For the current Site conditions, this EHASP identifies Level D PPE as the anticipated PPE recommended. The Technical Advisor/Health & Safety Consultants will recommend changes to the PPE Levels if warranted based on air and personal air monitoring data, and/or future soil analytical data.
- Ensuring that air monitoring will be conducted in general accordance with Section 5.0 of this plan. The responsibilities of the EH & S Director include notifying the Environmental Project Manager and/or Site Health & Safety Representative/Consultant of the site construction schedule, project progress, and changes in schedule. Additionally, the EH & S Director will ensure air monitoring is being conducted at the applicable times agreed upon with the Environmental Project Manager and/or Site Health & Safety Consultants.

2.5 Technical Advisor/Health & Safety Consultants – Terracon; David Block, Ph.D. / Jeremy Mott, CIH

The specific duties of the Advisors/Consultant include:

- Providing technical input into the design of the EHASP; preparation of the Site Specific EHASP.
- Advising worker exposure potential along with appropriate hazard reduction methods.
- Recommending a suitable medical monitoring program for the site workers.
- Provide all analytical results from the sampling/monitoring.
- Provide recommendations for the PPE level for work activities.
- Performing air monitoring in accordance with Section 5.0 of this plan, as appropriate.

Health & Safety Consultants:

David Block, Ph.D., CAC, CDPH IA/PM
Jeremy Mott, CIH
Terracon Consultants, Inc.
1220 Concord Avenue, Suite 450
Concord, CA 94520
(510) 899-7090

2.6 Environmental Project Manager – Terracon; Sadie Bodiford

The Environmental Project Manager will be responsible for implementing the project and obtaining any necessary personnel or resources for the completion of the project. Specific duties of the Environmental Project Manager with regard to health and safety issues will include:

- Coordinating the activities of employees and subcontractors, including their acknowledgement of this plan, and ensuring that all employees and subcontractors have signed the plan Acknowledgment Statement (see Appendix A);
- Selecting field personnel for the work that is to be undertaken on site;
- Ensuring that the tasks assigned are completed as planned and are kept on schedule;
- Performing air monitoring in accordance with Section 5.0 of this plan, as appropriate;
- Providing authority and resources to ensure that the Health & Safety representative is able to implement and manage safety procedures; and
- Ensuring all field personnel shall be responsible for acting in compliance with all safety procedures outlined in this EH&S Plan. Any hazardous work situations or procedures should be reported to the Site Safety Officer so that corrective steps can be taken. The Health and Safety Manager and/or Site Safety Officer have the authority to halt any operation that does not follow the provisions of this plan. All persons allowed to enter the site (i.e., employees, subcontractors, client, client representatives, regulators, state officials, visitors) are made aware of the potential hazards associated with the substances known or suspected to be on site and are knowledgeable as to the location of the on-site copy of this plans.

2.7 Other Field Personnel

All field personnel shall be responsible for acting in compliance with all safety procedures outlined in this EHASP. Any hazardous work situations or procedures should be reported to the Site Safety Manager so that corrective steps can be taken. The EH&S Director and/or Site Safety Manager have the authority to halt any operation that does not follow the provisions of this EHASP.

3.0 Site Characterization/Analysis & Protective Measures

3.1 Site Description

Site Name	Wood Middle School	
Site Location	320 Grand Street, Alameda, California	
Topography of area surrounding the site:		
<input type="checkbox"/> Hilly	<input checked="" type="checkbox"/> Flat	<input type="checkbox"/> Hummocky
<input type="checkbox"/> Marshy	<input type="checkbox"/> Mountainous	<input type="checkbox"/> Other
Area affected:		
<input type="checkbox"/> Urban	<input type="checkbox"/> Rural	<input checked="" type="checkbox"/> Residential
<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Other
Types of bodies of water bordering the site, if any:		
<input type="checkbox"/> Stream	<input type="checkbox"/> River	<input type="checkbox"/> Pond
<input type="checkbox"/> Lake	<input type="checkbox"/> Bay	<input type="checkbox"/> Ocean
<input type="checkbox"/> Other	<input checked="" type="checkbox"/> None	
Properties bordering the site:		
North:	Rittler Park and Otis Drive followed by a residential neighborhood.	
East:	Residential neighborhood.	
Sout:	Multi-family residential complexes.	
West:	Grand Street followed by a residential neighborhood.	

3.2 Site History / Background

The portion of Alameda occupied by Wood Middle School and the surrounding residential properties is comprised of engineered fill used to expand the land usable for urban development, referred to as the South Shore Reclamation Project. These land reclamation activities were conducted in the 1950s, with the fill material being comprised of dredge spoils from the San Francisco Bay and excavated material from nearby projects. Reclamation activities were closely followed by the development of the Site as a school, with the areas surrounding the Site being developed as single and multifamily residential properties. The Site has no history of industrial or commercial land use; however, the fill material has been known to contain elevated concentrations of heavy metals and petroleum hydrocarbons. Based on the historical review of the Site and boring logs prepared by ACC, the fill material present at the Site appears to consist of a homogeneous light-gray to brown poorly-graded sand.

3.3 Project Tasks

In general, all earth work including excavation and soil handling or contact (excavation, loading, stockpiling, excavation entry, backfilling etc.) will be included in this EHASP.

Excavation and Soil Handling Activities

Of primary concern will be ingestion and/or inhalation of airborne dusts as well as dermal contact with surface and subsurface soils at the hands and feet. Excavation may involve contact with soil and dust potentially containing arsenic and/or hexavalent chromium. As such, exposure to arsenic and/or hexavalent chromium in soil may be present during all soil handling (e.g., excavation, underground utility installation, drilling, loading, and stockpiling) activities. The potential for exposure will be evaluated using integrated industrial hygiene sampling pumps with appropriate sample collection media for arsenic and hexavalent chromium (refer to Section 5.0 of this plan).

The contractor will also need to make provisions to appropriately stockpile excavated materials (refer to the Section 6 of Soil Management Plan). In addition, the contractor must make provisions for the collection and management of rainwater during this phase of the project if encountered (refer to Section 7 of the Soil Management Plan).

3.4 Hazardous Chemicals

Potential effects of any exposure are dependent on several factors such as: toxicity of substance, time frame of exposure, concentration of substance producing the exposure, general health of person exposed, and individual use of hazard reduction methods.

Based on previous soil sampling results, the primary classification of contaminants includes arsenic and hexavalent chromium. This plan concentrates on hazards and measures necessary to prevent unnecessary exposure to these potential contaminants, as summarized in Table 1.



Table 1. List of Potential Contaminants	
Arsenic	Maximum Reported Soil Concentration – 9.1 mg/kg
Hexavalent Chromium	Maximum Reported Soil Concentration – 0.9 mg/kg

*Additional information has been provided for these chemicals; refer to Table 2.

Table 2. Chemical Hazard Descriptions and Properties		
Chemical Name	Arsenic	Hexavalent Chromium
Physical Description	A brittle, crystalline, silvery to black metal. Arsenic has no odor	Very hard gray solid with a metallic luster.
Chemical/Physical Properties		
flash point	none	None established
vapor density	none	None established
Relative dens.	5.7	2.7 g/cm ³
LEL-UEL	none	None
vapor pressure	1 mm Hg @ 702°F	None established
Toxicological Effects	Ingestion of arsenic can cause severe gastrointestinal damage, including vomiting, diarrhea, and shock. Inhalation of arsenic can cause damage to mucous membranes and skin, and is a severe nose, eye, and respiratory irritant. Cough, breathing difficulty, chest pain, and severe damage to the respiratory system can occur from acute inhalation exposures. Severe respiratory effects can occur from chronic inhalation exposure.	Hexavalent chromium is known to cause cancer. Additionally, it targets the respiratory system, kidneys, liver, skin, and eyes.
Exposure Limits		
Cal/OSHA (PEL)	0.01 mg/m ³	0.005 mg/m ³
ACGIH (TLV)	0.01 mg/m ³	0.0002 mg/m ³
NIOSH (REL)	C - 0.002 mg/m ³	0.0002 mg/m ³

3.5 Hazard Determination

Serious _____ Moderate _____ Low X Unknown _____

Non-chemical hazards:		
<input type="checkbox"/> Confined space	<input type="checkbox"/> Drill rig	<input type="checkbox"/> Traffic
<input checked="" type="checkbox"/> Underground utilities	<input type="checkbox"/> Overhead lines	<input checked="" type="checkbox"/> Backhoe
<input checked="" type="checkbox"/> Poisonous animals	<input type="checkbox"/> Dangerous animals	<input checked="" type="checkbox"/> Ticks
<input type="checkbox"/> High crime area	<input checked="" type="checkbox"/> Slip/fall hazards	<input checked="" type="checkbox"/> Welding/cutting
<input checked="" type="checkbox"/> Heat/cold stress	<input type="checkbox"/> Excavation >4 ft.	<input type="checkbox"/> Trench >4 ft.
<input type="checkbox"/> Leaking containers	<input checked="" type="checkbox"/> Electrical	<input checked="" type="checkbox"/> Hot surface
<input type="checkbox"/> Low light conditions	<input checked="" type="checkbox"/> Lifting hazard	<input checked="" type="checkbox"/> Noise
<input checked="" type="checkbox"/> Other construction equipment		<input checked="" type="checkbox"/> Poisonous insects
<input checked="" type="checkbox"/> Other – large construction equipment (backhoe, large dump trucks, etc.)		

If confined space entry was checked above, of what type is the confined space?		
<input type="checkbox"/> Shed	<input type="checkbox"/> Subsurface vault	<input type="checkbox"/> Manhole
<input type="checkbox"/> Crawlspace	<input type="checkbox"/> Trench	<input type="checkbox"/> Excavated pit
<input type="checkbox"/> Other		

Chemicals utilized to perform on-site tasks (include chemicals used to maintain equipment):		
<input checked="" type="checkbox"/> Diesel for construction equipment	<input checked="" type="checkbox"/> Lubricating Oils	<input checked="" type="checkbox"/> Grease
<input checked="" type="checkbox"/> Gasoline for construction equipment	<input checked="" type="checkbox"/> Spray Paints	<input checked="" type="checkbox"/> Utility Pipe Glue
<input type="checkbox"/> Other		

As indicated above, the potential hazards to personnel working at the site have been principally identified as: chemical exposures and physical hazards. Physical hazards include those associated with working in the vicinity of: (1) excavators; (2) other heavy equipment (such as trucks); and (3) open excavations of varying sizes.

3.6 Other Hazards/Procedures for Reducing Hazards

The potential for unknown hazards cannot be eliminated. Hazards can exist for all exposure routes such as inhalation, dermal contact, ingestion, and eye contact.

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The following are potential site hazards and the corresponding procedures for hazard reduction:

POTENTIAL HAZARDS	PROCEDURES FOR HAZARD REDUCTION
Ingestion of hazardous materials	<p>Ingestion of hazardous materials can occur by accidental swallowing of contaminated soils, liquids and/or transfer of the contaminated particles onto ingestible substances (such as food).</p> <p>Eating, smoking, drinking and application of cosmetics is prohibited on-site. This minimizes the possibility of exposure to hazardous materials potentially encountered on-site via ingestion.</p>
Physical hazards in general such as:	
Slippery surfaces	Use of approved skid-proof boots shall be required.
Noise	Approved ear plugs/muffs shall be made available for noisy work operations such as concrete breaking.
Contaminated surfaces	Contact with contaminated surfaces, or surfaces suspected of being contaminated, should be avoided. This includes walking through, kneeling or placing equipment in puddles, mud, or discolored surfaces, or on drums or other containers.
Exposure	<p>Heat stress: Provide plenty of liquids to replace loss of body fluids. Appropriate liquids should consist of juices, juice products, and water. Establish a work schedule that will provide sufficient rest periods for cooling down. As the temperature increases, more frequent and longer rest periods are required. Also, refer to Section 8.7 of this Plan.</p> <p>Cold Stress: Establish a work schedule that will provide sufficient rest periods for warming-up. As the temperature drops, more frequent and longer rest periods are required. Provide adequate thermal protective clothing.</p>
Head/eye protection	ANSI approved hard hats and safety glasses will be worn at all times while on-site, and/or when head or eye hazards are present.
Other hazards.	<p>Avoid standing near the edge of excavations.</p> <p>Look for falling objects, slipping, and tripping hazards (i.e., Visqueen sheets used to hold excavated soil can be slippery).</p> <p>Secure the site with fences and post warning signs to prevent the exposure of unauthorized, unprotected people to site hazards.</p> <p>Do not park or leave equipment near the edge of an excavation.</p>

3.7 Required Personal Protective Equipment for Site Operations

Basic requirements while working on a construction site include the following:

- ANSI approved hard hat, safety glasses, gloves, and long pants
- Boots that meet OSHA Standard 1910.130
- Reflective traffic/safety vest (Class 2)

3.7.1 Base Level of Protection (No contaminated soil contact)

For work activities being performed above grade the Level of protection will consist of Level D. Such activities will only consist of those job tasks not involving contaminated soils such as support tasks, excavation, movement, and loading of non-contaminated material to be utilized elsewhere or recycled.

Level D Requirements include:

- Coveralls (normal work uniform)
- Leather/cotton – standard work gloves that meet OSHA Standard 1910.138
- ANSI approved hard hat and safety glasses
- Safety boots that meet OSHA Standard 1910.130
- Reflective traffic/safety vest (Class 2)

3.7.2 Level of Protection if contaminated soil is disturbed

Modified Level D is the minimum acceptable level of required PPE IF contaminated soil is disturbed while performing the tasks. Respiratory protection is optional unless air-monitoring data indicates otherwise. Upgrades in this minimum level of protection may be necessary if contaminated soils are disturbed.

Modified Level D Requirements include:

- Tyvek suits during soil contact, etc.
- Butyl or nitrile gloves
- Chemical resistant (PVC or neoprene) boots or disposable boot covers that can be worn over leather work boots
- ANSI approved safety glasses or goggles
- ANSI approved hard hat
- Reflective traffic/safety vest (class 2)

3.7.3 Additional upgrades:

1. Protocols for upgrading:

Upgraded equipment will be required until it is demonstrated through air monitoring that the levels are acceptable. Once air monitoring data are complete and results are

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tabulated on the initial site entry, the Health & Safety representative will determine if changes in PPE are needed.

2. Upgraded equipment:

a. Respirators

- Half-Face APR with HEPA (magenta), Acid gas (White), and/or VOC (black) combination cartridges as applicable. Acid Gas/Organic Vapor/HEPA combo cartridges are available and are color coded Yellow & Magenta.

Note: Respirator cartridges shall be replaced when the cartridges begin to restrict breathing, the filter becomes dirty, or visible damage is noted.

3.8 Levels of Protection

LEVEL A (not anticipated)

Level A personal protection is required in the area where the highest levels of contamination exist and is designated as the area where maximum respiratory, skin, and eye protection are required. See Section 3.9 for contaminant concentration thresholds that trigger increased levels of PPE.

LEVEL B (not anticipated)

Level B personal protection is required in the area where maximum respiratory protection is required, however, there is a low probability of dermal toxicity. See Section 3.9 for contaminant concentration thresholds that trigger increased levels of PPE.

- Monitored levels of air contamination exceed the protection factors afforded by Air-Purifying Respirators (APR).
- Air contaminants have poor warning properties.
- Contaminants are not known to be absorbed through, or toxic to, skin surface.

Level B Requirements include:

- NIOSH approved positive pressure (pressure-demand), self-contained breathing apparatus, or positive pressure supplied air respirator with escape SCBA.
- Tyvek suits.
- Inner and outer chemical resistant gloves.

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- Chemical resistant (PVC or neoprene) boots with protective toe that meets OSHA Standard 1910.130.
- ANSI approved safety glasses or goggles.
- ANSI approved hard hat.
- Reflective traffic/safety vest (class 2).

LEVEL C (not anticipated)

Level C personal protection is required in the area where respiratory protection of a lesser degree than the criteria established for Levels A or B is required, and the probability of skin contamination by dermal toxic materials is unlikely. An area may be designated as Level C when:

- Monitored levels of air contamination do not exceed the protection factors afforded by Air-Purifying Respirators (APR).
- Air contaminants have good warning properties.
- Contaminants are not known to be absorbed through, or toxic to, skin surface.
- A reliable history of prior site entries exists without indications of acute or chronic health effects.

Level C Requirements include:

- NIOSH approved half-mask or full-face, air purifying respirator.
- Tyvek suits.
- Inner and outer chemical resistant gloves.
- Chemical resistant (PVC or neoprene) boots with protective toe that meets OSHA Standard 1910.130.
- ANSI approved safety glasses or goggles.
- ANSI approved hard hat.
- Reflective traffic vest (class 2).

LEVEL D (anticipated)

Level D personal protection is required in those areas where respiratory protection is not a requirement. An area may be designated as Level D when:

- No hazardous airborne contaminants are known to be present, and the potential for a release of such hazards is low.
- Work operations preclude the splashing of hazardous/toxic materials on body surfaces.
- There are no Level A zones within the same exclusion area.

3.9 Site Action Levels

SITE ACTION LEVEL* = (see table below)
 AREA OF WORK SHALL BE EVACUATED IF <19.5% or > 23.5% O₂
 AREA OF WORK SHALL BE EVACUATED IF LEL > 10%

Air Monitoring Equipment and Levels of Personal Protection				
Air Monitoring Instruments	Level D	Level C	Level B	Level A
Airborne Dust (PM ₁₀) ¹ (Personal)	<1.0 mg/m ³	1-10 mg/m ³	Not Anticipated	Not Anticipated
Airborne Dust (PM ₁₀) (Perimeter)	50 µg/m ³ at site perimeter for offsite migration	N/A	N/A	N/A
Arsenic ²	<5 µg/m ³	5 - 100 µg/m ³ (½ face respirator) 0.1 – 0.5 mg/m ³ (full-face respirator)	Not Anticipated	Not Anticipated
Respirable Silica ² (as Quartz)	<0.025 mg/m ³	0.025 – 0.5 mg/m ³ (½ face respirator) 0.5 – 2.5 mg/m ³ (full-face respirator)	Not Anticipated	Not Anticipated
Hexavalent Chromium Monitoring ²	<0.005 mg/m ³	0.005 – 0.05 mg/m ³ (½ face respirator) 0.05 – 0.25 mg/m ³ (full-face respirator)	Not Anticipated	Not Anticipated

1 - Site action level is based on sustained airborne concentrations above background, detected in the breathing zone of the worker (refer to Section 5.0 "Air Monitoring").

2 –Arsenic, hexavalent chromium, and respirable dust w/silica monitoring requires the collection of air samples and laboratory analysis; direct-reading instrumentation is not available.

If conditions require Level B personal protective measures and the appropriate Level B equipment is unavailable, site personnel shall evacuate immediately. See Section 3.8 for personal protective equipment (PPE) level guidance.

4.0 Engineering Controls and Work Practices

4.1 Engineering Controls

Depending on soil conditions, during earthwork activities there is a potential to generate a nuisance dust condition. The best (most reasonable) available control measures will be used to minimize dust emissions. These control measures will include, but are not limited to, the following:

- Dust monitoring (refer to Section 5.0);
- Watering of active construction areas to prevent visible dust plumes from migrating outside of the site limits, as applicable;
- Misting or spraying while loading transportation vehicles, as applicable;
- Minimizing drop heights while loading transportation vehicles;
- Using tarpaulins or other effective covers for trucks carrying soils that travel on public roads; and
- Using sufficient water during slab coring/cutting operations. If flammable atmospheres are detected below the slab, ventilating or inerting that area may be necessary prior to cutting or using other potential ignition sources.

Earthwork activities shall immediately cease should airborne dust exceed the PM10 criteria specified by the California Air Resources Board (CARB) and shall not recommence until the area is adequately moistened such that no visible dust will be generated. Additional information regarding dust management is provided in Section 5.0 below, and in the Dust Control Plan section included in the Soil Management Plan (SMP).

4.2 Work Practices

Workers are expected to adhere to established safe work practices for their respective specialties (i.e., excavation, drilling, laboratory analysis, construction). The need to exercise caution in the performance of specific work tasks while wearing PPE is made more acute due to (1) weather conditions; (2) restricted mobility and reduced peripheral vision caused by the protective gear itself; (3) the need to maintain the integrity of the protective gear; and (4) the increased difficulty in communicating caused by respirators. Work at the site will be conducted according to established protocol and guidelines for the safety and health of all involved.

Among the most important of these principles for working at a hazardous waste site are the following:

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- In any unknown situation, always assume the worst conditions and plan responses accordingly.
- Because no PPE is 100% effective, all personnel must minimize contact with contaminated materials. Plan work areas, decontamination areas, and procedures accordingly. Do not place equipment on drums or the ground. Do not sit on drums or other materials. Do not sit or kneel on the ground in the Hot or Warm Zones. Avoid standing in or walking through puddles or stained soils.
- Smoking, eating, or drinking in potentially contaminated work areas will not be allowed. Prior to doing such activities (outside of potentially contaminated areas), each individual shall wash his/her hands and face prior to such. Oral ingestion of contaminants is a major route of entry for introducing toxic substances into the body. Personal hygiene stations will be established in both the decon area and the hot zone rest/shade area. Washing the hands and face before eating, drinking, smoking will be strictly enforced on the site due to the potential for ingestion of hexavalent chromium and/or arsenic via contaminated hands & skin.
- Avoid heat and other work stresses related to wearing protective gear. Work breaks should be planned to prevent stress-related accidents and fatigue. Refer to Section 7.7.
- Personnel must be observant of not only their own immediate surroundings, but also those of others. Everyone will be working under constraints; therefore, a team effort is needed to notice and warn of impending dangerous situations. Extra precautions are necessary when working near heavy equipment and while utilizing PPE because vision, hearing, and communication may be impaired.
- Personnel with any facial hair that interferes with the proper fit of the respirator will not be allowed to work on sites requiring Level C, B, or A protection.
- Rigorous contingency planning and dissemination of plans to all personnel minimizes the impact of rapidly changing safety protocols in response to changing site conditions.
- Personnel must be aware that chemical contaminants may mimic or enhance symptoms of other illnesses or intoxication. Drinking of alcohol while working on-site is prohibited during field investigation or soil removal assignments.

4.3 Work Zones

Field project managers working under health and safety plans for hazardous waste operations are required to establish work zones to prevent or reduce the spread of site contaminants to non-contaminated areas on or off site. The work zones (exclusion zone, contaminant reduction zone (CRZ), support zone, and mobile work zone) are described in more detail in the following subsections. Movement between zones should be restricted to those that need access to a specific area, and entry and exit between zones should be through designated access control points.

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The actual locations of the zones will be determined prior to set up. The staging area will be used for communications and will be a contaminant-free zone. The CRZ will lie between the staging area and the exclusion zone and will be determined by the SSO. The exclusion zone may be delineated with red tape and cones or barricades. Personnel not immediately involved in the field activity at hand will not be allowed within the exclusion zone.

4.3.1 Exclusion Zone

The exclusion zone should include any area where contamination is known or suspected. Areas of air, water, or soil that are contaminated with hazardous materials (biohazards, radioactive materials, chemicals) should be included in the exclusion zone. The zone should be well known to site workers. On smaller projects, this can be a verbal identification to site workers, such as "A 20-foot radius around the drill rig." On larger projects, or in areas that may be encountered by observers or the general public, the zone may need to be defined with red tape, traffic cones or in some instances, fencing and barriers. The need will be job specific, and the method should be identified by the site HSO. Some work practices that should be followed in the exclusion zone include:

- Employees in the exclusion zone must wear the PPE designated in this site health and safety plan for tasks executed within the zone;
- No eating, drinking, chewing gum or tobacco, smoking, application of cosmetics, including application of lip balm, sunscreen, or insect repellent is allowed in the exclusion zone;
- Sitting or kneeling in areas of high concentrations of contaminants should be avoided;
- If any PPE becomes defective, the employee should leave the work area via the designated egress area, decontaminate as needed, and replace the defective PPE before returning to work in the exclusion zone;
- The use of illegal drugs or consumption of alcohol is prohibited on all projects; and
- When leaving the exclusion zone, employees should exit via the designated access/egress point(s) and follow decontamination procedures as described by the HSO and this EHASP.

4.3.2 Contaminant Reduction Zone (CRZ)

A CRZ is established to provide a transition between the exclusion zone and the support zone. The CRZ is set up at the access control points of the exclusion zone and will vary in size depending on the complexity of activities that need to occur within the zone. For small site investigations, the CRZ may simply be a designated area near containers set up to collect used disposable PPE and some soap and water. For larger projects, the CRZ may include specific decontamination points and be staffed by personnel specifically designated to participate in the decontamination of personnel and equipment exiting the exclusion zone. Depending on the site contaminants, level of contamination, and decontamination procedures,

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personnel in the CRZ may be required to wear protective clothing, gloves, or respirators. The specific requirements will be outlined by the HSO. The CRZ should be placed in an area that is not contaminated at the boundary of the exclusion zone.

4.3.3 Support Zone

The support zone is established near the entrance to the site and is far enough from the exclusion zone and CRZ that specialized protective clothing or respirators are not used. The use of normal field PPE such as hard hats, safety glasses, and safety work boots is expected except for areas such as office trailers, break and lunch areas, or other designated areas. Operational support activities and equipment storage and maintenance areas are located in the support zone. No equipment or personnel should go from the exclusion zone to the support zone without passing through the CRZ and being decontaminated in accordance with the requirement set forth by the SSO.

4.3.4 Mobile Work Zone

For those projects that involve brief periods of work in multiple locations, a specific area may be designated as the exclusion zone for the duration of the work performed in that area. The exclusion zone can be terminated (provided there are no ongoing hazards or potential exposures to contaminants) and moved to the next area of work. For example, during soil borings or well installation, the exclusion zone can be defined as, "1.5 times the mast height" of the drill rig, or a 20-foot radius, whichever is greater. Once the boring has been closed, or well installed and secured, and all drill cuttings have been secured, the area can be opened up and a new exclusion zone established around the next boring location.

4.3.5 Considerations When Establishing Work Zones

Work zones should be large enough to perform tasks within the zone safely, with no exposure to hazards to personnel outside the zone, but they should also be small enough to be able to secure and control access. Some considerations in establishing work zones include:

- Physical and topographical features of the site;
- Dimensions of the contaminated area;
- Weather;
- Physical, chemical, and toxicological characteristics of contaminants and chemicals used in the zone;
- Potential for exposure to site contaminants;
- Known and estimated concentrations of contaminants;
- Air dispersion of contaminants;
- Fire and explosion potential;
- Planned operations and space needed to perform the work safely;
- Surrounding areas;
- Decontamination procedures; and
- History of job site.

5.0 AIR MONITORING

In accordance with 29 CFR 1910.120 (h), exposure air monitoring will be used to identify and quantify airborne levels of hazardous substances and health hazards to determine the appropriate level of employee protection needed on-site. To the extent feasible, the presence of airborne contaminants will be evaluated through the use of sampling equipment. The information gathered will be used to ensure the adequacy of the levels of protection being employed at the site and may be used as the basis for upgrading or downgrading levels of personal protection, at the discretion of the Health & Safety Representative and/or Construction Project Manager.

The following air sampling equipment may be utilized for site monitoring:

- Industrial Hygiene personal sampling pumps and appropriate sample media – arsenic, dust, hexavalent chromium, and silica (as quartz)
- Dust Monitor (DustTrak or SidePak AM520 or equivalent)

5.1 Air Monitoring Procedures

Air monitoring will be performed by the on-site industrial hygienist, and under direction of the project CIH when warranted. Monitoring may be conducted to properly characterize the potential for exposure to site personnel and to monitor the potential for the migration of contaminants off-site during initial operations. Continuous monitoring should be performed during operations that have not been characterized. After initial site screening and if warranted, monitoring shall be conducted periodically and when site conditions might be altered (i.e., weather, drilling, new area of excavation, etc.).

5.1.1 Personal Sampling for OCPs, Arsenic, Hexavalent Chromium, Silica, and Dust
Personal sampling for arsenic, hexavalent chromium, silica, and dust (total and respirable) will be required during this project to properly characterize site activities and potential personal exposures.

If the results approach or exceed the site action limit additional periodic monitoring may be warranted. The monitoring is necessary to document the adequacy of personal protective equipment, as well as compliance with 8-CCR, Sections 1529, 1532.1 and 5214. Sampling and analysis procedures for total dust, arsenic, and hexavalent chromium will follow those described in Methods 0500 and 7300 of the National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods. The sampling and analysis procedures for respirable dust and silica will follow those described in Methods 0600 and 7500/mod of the NIOSH Manual of Analytical Methods. Daily air samples will be shipped to an AIHA Accredited

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laboratory under chain of custody protocols. Verbal results will be reported to the site safety officer (SSR), within 24 hours. Where exposure to airborne OCPs exceed the action level (AL), employees will be given medical surveillance and a full air monitoring program.

5.1.2 Perimeter Monitoring for Total Dust (as PM₁₀)

In conjunction with the site SMP and this Site-Specific EHASP, a Community Air Monitoring Plan (CAMP) has been prepared to protect the adjoining properties during construction activities.

A SidePak Aerosol Monitor (or equivalent) may be used to measure real-time dust levels. Perimeter monitoring will be conducted upwind and downwind of the work area. If dust levels exceed the PM₁₀ standard for 10 minutes or more, then work should be stopped, and mitigation measures undertaken before work resumes.

During redevelopment activities, the dust standard will be based on the PM₁₀ ambient air quality standards adopted by the CARB, which specifies a ceiling level of no more than 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) difference between upwind and downwind sampling locations. If this level is exceeded for 10 minutes or more, additional dust suppression activities such as water application for dust suppression will be conducted during work activities. The ceiling level of 50 micrograms per cubic meter represents the CARB standard for 24-hour 10 μm diameter (PM₁₀ – 24-hour) particulate matter. Note that dust monitoring criteria related to PPE selection are provided in Section 3.9. Results of monitoring information shall be recorded, and will include time, date, location operations, and any other conditions that may contribute to potential exposures. All maintenance and calibration information shall be maintained and made available upon request. The monitoring equipment will be calibrated in accordance with the manufacturer's specifications, and the records of such maintained with the project health and safety plan.

6.0 DECONTAMINATION

All personnel and/or equipment leaving a potentially contaminated area are subject to decontamination procedures. If applicable, general decontamination procedures for personnel and equipment are outlined below. All contaminated articles and waste decontamination materials shall be containerized, labeled, and properly disposed.

6.1 Personal Decontamination

All personnel leaving areas where existing soil has been exposed must follow decontamination procedures. At a minimum, individuals involved in this project should wash their face and hands prior to eating, smoking, and/or applying cosmetics. If water is not readily available on-site, the use of sanitary wipes or similar materials may be used. If gloves and boot covers

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are worn, they should be properly disposed. Although not anticipated, if a level of protection greater than Level D is necessary, no personnel will be allowed to leave a crawlspace work area prior to decontamination. Generalized procedures for removal of protective clothing are as follows:

- Drop tools, equipment, samples, and trash at designated drop stations (i.e., plastic containers or drop sheets).
- Wash down boots with clear water in the designated wash pit area. If non-disposable clothing is utilized, wash down outer protective garments.
- Remove tape from boots and gloves.
- Remove boots or boot covers and discard in container.
- Remove gloves and place in container.
- Remove outer garment and discard in container.
- Remove respiratory equipment, place in designated area.
- If the site requires use of a decontamination trailer, all personnel must wash hands and face prior to leaving the site.
- Wash face and hands prior to eating, smoking, and/or applying cosmetics.

NOTE: Disposable items (i.e., Tyvek coveralls, respirator cartridges, gloves, and latex over boots) will be changed daily unless there is reason to change sooner.

Pressurized sprayers or other designated equipment may be available in the decontamination area for wash down and cleaning of personnel and equipment.

Respirators will be decontaminated daily. The masks will be disassembled, the cartridges replaced, and all other parts placed in a cleaning solution (typically warm soapy water). Prior to re-use of the respirator, employees will inspect their mask to ensure there are no apparent defects, tears, etc.

6.2 Equipment Decontamination

Equipment utilized on the site (radios, instruments, samples, tools, heavy construction equipment) will be decontaminated prior to leaving the earthwork areas. Soil residue on excavator tracks or tires, truck tires, etc. will be removed using dry and/or wet methods. Dry brushing or shoveling will be used to remove a majority of the soil/contamination. Material that cannot be cleaned by dry methods will be pressure washed in the designated decontamination area. Water collected from the decon wash pit can be removed using a sump pump and that water used again for dust control within the Exclusion Zone. Other accumulated water and/or mud may need to be sampled and handled accordingly upon termination of the project/use of the wash pit. Smaller equipment can be protected from

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contamination by draping, masking, or otherwise covering the instruments with plastic (to the extent feasible) without hindering operation of the unit. The contaminated equipment will be taken from the drop area and the protective coverings removed and disposed of in appropriate containers. Any dirt or obvious contamination will be brushed or wiped off with a disposable paper wipe. The units can then be placed inside in a clean plastic tub, wiped off with damp disposable wipes, and dried. The units will be checked, standardized, and recharged as necessary for the next day's operation, and then prepared with new protective coverings. All contaminated articles and waste decontamination materials shall be properly containerized, labeled, and disposed of properly.

7.0 EMERGENCY RESPONSE/CONTINGENCY PLAN

This contingency plan, as developed under the requirements of 29 CFR 1910.120, applies to "on-site emergency responses" only. Much of the information for this section is covered elsewhere within this H&S Plan, therefore, only the items not previously addressed will be included.

7.1 Lines of Authority/Communication

The Site Safety Officer is the primary authority for directing site operations under emergency conditions. All emergency communications both on and off-site will be directed through the Construction Project Manager, Health and Safety Manager, or designee.

7.2 Emergency Telephone Numbers

In the event of an accident or emergency situation, immediate action must be taken by the first person to recognize the event. First aid equipment is located on-site, within the trucks of each subcontractor foreman, and/or the office/trailer. Notify (1) the Site Safety Officer and (2) the Construction Project Manager and/or Health and Safety Manager about the situation immediately after emergency procedures are implemented. Contact information for the Construction Project Manager and Health & Safety Representative is presented in Section 3.2.

Emergency Services Contacts	
<u>Emergency Telephone</u>	
Police, Fire, Ambulance	911
Poison Control Center	1-800-222-1222
<u>Medical</u>	
Nearest Hospital:	Alameda Emergency Care Center
Telephone #:	(510) 522-3700
Directions:	2070 Clinton Avenue, Alameda, CA 94501 (see Appendix D)
<u>Environmental Emergency</u>	
State OES	(800) 852-7550
Regional EPA Office	(415) 744-2000
National Response Center	(800) 424-8802 (EPA 24-Hotline)

7.3 Usual Procedure for Injury

- Call for ambulance/medical assistance, if necessary. Notify the receiving hospital of the nature of physical injury or chemical overexposure.
- If time allows, send/take pertinent information (i.e., Material Safety Data Sheet-MSDS) to medical facility.
- If the injury is minor, proceed to administer first aid and then immediately notify the Site Safety Officer.
- The Construction Project Manager and Health and Safety Manager must be notified of the situation.
- Ideally, at least one person on-site should have a current certificate in providing first aid/CPR.

7.4 Emergency Treatment

When transporting an injured person to a hospital, bring this plan to assist medical personnel with diagnosis and treatment. In all cases of chemical overexposure, follow standard procedures as outlined below for poison management, first aid, and, if applicable, cardiopulmonary resuscitation. Four different routes of exposure and their respective first aid/poison management procedures are outlined below:

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1. Ingestion:

Refer to Table 1 or the applicable MSDS (if available) for specific recommendation and/or CALL THE POISON CONTROL CENTER AT: 1-800-222-1222 FOR INSTRUCTIONS.

2. Inhalation:

Move the person from the contaminated environment. Initiate CPR if necessary. Call, or have someone call, for medical assistance. Refer to Table 1 or the applicable MSDS (if available) for additional specific information. If necessary, transport the victim to the nearest hospital as soon as possible.

DO NOT ENTER CONFINED SPACE UNLESS PROPERLY TRAINED, EQUIPPED, AND A STANDBY PERSON IS PROVIDED.

3. Skin Contact:

Wash off skin with a large amount of water immediately. Remove any contaminated clothing and rewash skin using soap, if available. Transport person to a medical facility if necessary.

4. Eyes:

Hold eyelids open and rinse the eyes immediately with copious amounts of water for 15 minutes. If possible, have the person remove his/her contact lenses (if worn). Never permit the eyes to be rubbed. Transport person to a hospital as soon as possible.

7.5 Evacuation Procedures

Various emergencies may warrant a site evacuation. These may include: fire, explosion, chemical release, or personal injury. Personnel encountering a hazardous situation shall instruct others on site to evacuate the vicinity IMMEDIATELY and call: (1) Health & Safety Representative and (2) Construction Project Manager for instructions. The site must not be re-entered until the situation has been corrected. In the event of an evacuation, the work party will move upwind. Wind direction can be noted by the use of a windsock located on the site or other indicators (i.e., flags, trees, waves, etc.). When conditions warrant moving away from the work site, the crew will relocate upwind a distance of approximately 100 feet or further, as indicated by the site monitoring instruments. If the decontamination area is upwind and far enough from the event, the work crew will quickly pass through the decontamination area to remove contaminated clothing. When the Health & Safety Representative determines that conditions warrant evacuation of downwind residences and commercial operations, local agencies will be notified, and assistance requested. Designated on-site personnel will initiate evacuation of the immediate off-site area without delay.

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The following signals will be utilized for site evacuation/emergencies:

1 long blast	Evacuate
1 short blast	Attention
2 blasts	Fire

(i.e., truck/car horn)

7.6 First Aid Equipment

Vehicles used for site work will be equipped with a first aid kit and safety equipment including:

- ABC fire extinguisher
- potable water
- portable eyewash
- First Aid Kit w/ emergency bandage materials
- Fluorescent vests
- Traffic cones
- Barricades
- Flashlight

7.7 Heat Stress and Stroke Monitoring

The following recommendations will help reduce heat stress. Their applicability is dependent on evaluating the conditions particular to a specific project. Cal/OSHA has established a heat illness prevention standard whereby shade, water, and training must be provided. For this project, the proposed areas of shade and water within the work area will aid in compliance with the proposed standard. If the predicted temperature for the following day is to be greater than 85 °F, the employer should provide shade and water to accommodate 25% of the workforce. This shade/rest area must be no further than ¼ of a mile from the area of work. Provide plenty of liquids to replace loss of body fluids. Appropriate liquids should consist of water, juices, and juice products. Employees should drink 3-4 glasses of water/liquid per hour. Establish a work schedule that will provide sufficient rest periods for cooling down. As the temperature increases, more frequent and longer rest periods are required. Heat stress may be of concern depending upon the ambient temperature and amount of solar load. Each contractor and subcontractor must have and follow a written Heat Illness Prevention program that complies with current Cal/OSHA standards. Heat stress is the adverse stress to the body due to exposure to excess heat. It can greatly diminish the ability of the body to function properly. Therefore, all personnel involved in work activities will become acquainted with the symptoms of heat stress and the necessary response actions for treatment. Because the

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incidence of heat stress depends on a variety of factors, all workers will be monitored. Hazards associated with heat stress include the following:

- Heat Rash – may result from continuous exposure to heat or to humid air;
- Heat Cramps – caused by heavy sweating causing cold clammy skin. Usually associated with inadequate electrolyte replacement. Heat cramps can cause muscle spasms, pain in the hands, feet, and abdomen;
- Heat Exhaustion – occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Heat exhaustion can cause pale, cool, moist skin, heavy sweating, dizziness, and nausea and fainting; and
- Heat Stroke – the most serious form of heat stress. Temperature regulation fails, and the body temperature rises to critical levels (usually above 106 degrees °F). Immediate action must be taken to prevent serious injury and death. Competent medical help must be obtained. Heat stroke can cause red, hot unusually dry skin. Symptoms include lack of or reduced perspiration nausea, dizziness, confusion, and strong rapid pulse and coma. Do not try to treat on-site, give liquids or other treatments.

During the day-to-day fieldwork, the SSO, PM, and workers must be alert for the signs and symptoms of heat related incidents. Heat related conditions are hazards that exist when individuals are required to work in warm temperatures while wearing protective equipment. The SSO will monitor the ambient air temperature and humidity utilizing local information sources. Employees working in protective clothing will be observed for the following signs and symptoms of heat stress, dizziness and nausea, profuse sweating, skin color change, vision problems, delirium, fainting, weakness, fatigue, cramping, and hot red, dry skin. Employees who exhibit heat-related symptoms will be monitored on-site by the SSO or other competent person. Monitoring heat related symptoms will consist of measuring the heart rate and body temperature to prevent the onset of heat stress illness. Heart rate will be measured by the radial pulse of the wrist for thirty seconds as early as possible in the resting period. Body core temperature can be measured by means of an “ear” thermometer. The heart rate at the beginning of the rest period should not exceed 100 beats per minute. If the heart rate is in excess of the above guideline, the next work period will be shortened by one-third, while the length of the rest period stays the same. If the heart rate is in excess of 110 beats per minute at the beginning of the next rest period, the following work cycle will be further shortened by one-third. An employee with a body core temperature in excess of 99.5 degrees Fahrenheit will not be allowed to return to work after the rest period until the core temperature returns to 99 degrees or below. Breaks in a shaded area will be taken if any worker exhibits or believes necessary to mitigate the symptoms of heat stress such as excessive sweating, muscle spasms, thirst, dizziness, rapid/weak pulse, flushed skin, loss of consciousness, or convulsions. The breaks will last until symptoms are relieved and/or the pulse of the worker

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is less than 110 beats per minute. Workers experiencing heat stress will be required, if conscious, to consume two to four pints of electrolyte fluid or cool water every hour while resting in a shaded area. The individual should not return to work until symptoms are no longer recognizable. If the symptoms appear critical, persist, or get worse, immediate medical attention will be sought. For severe heat stress, workers will be examined by a health-care professional as soon as possible. Additionally, during periods of hot weather or other potentially heat stress conditions the following safe work practices must apply:

- Be on the alert to signs and symptoms of heat illness during periods of abnormally high heat;
- Know the symptoms of heat illness to watch for which includes excessive sweating, headache, poor concentration, muscle pain, headache, cramping, dizziness, irritability, loss of coordination, vomiting, blurry vision, confusion, lack of sweating, fainting, or seizures;
- Drink plenty of water throughout the day. Employees working in the heat need to drink 4 eight-ounce glasses of water per hour, including at the start of the shift to replace the water lost to sweat;
- Dress for conditions: wear lightweight, light-colored loose clothing, a wide-brimmed hat, if possible, sunscreen, and sunglasses;
- Use cool compresses to stay cool;
- Take scheduled rest periods and spend them in the shade;
- Tell your supervisor immediately if you feel you may be getting sick from the heat;
- Know the locations of your closest drinking water supplies;
- Keep track of your co-workers; and
- Know how to contact emergency services in the event of heat illness and how to effectively report the work location to 911.

7.8 Cold Stress Prevention

Exposure to cold weather can lead to frost bite and/or hypothermia. The signs and symptoms of excessive exposure to cold are listed below:

When weather conditions are cold, wet, and windy, the following precautions will be instituted:

- Field personnel should wear layered clothing. Mittens, heavy socks, hats, jackets/vests, long underwear, glove liners or other suitable clothing should be worn when air temperatures fall below 40 °F. Chemical protective clothing will be worn over the warm garments when protective clothing is required by the field operations;
- At temperatures below 30 °F, temperature insulating suits and gloves should be considered;

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- Protective outerwear should be used to prevent wetting of work shoes and feet, when appropriate;
- Additional clothing worn in layers allows gradual removal as work activities generate metabolic heat;
- At temperatures below 35 °F, raingear should be worn if an employee could become wet on the job;
- At temperatures below 35 °F, employees shall be provided with warm (65 °F or above) break areas. If appropriate, space heaters will be provided to warm hand and feet;
- Hot liquids such as soups and warm drinks should be consumed during break periods. Caffeine beverages should be limited due to attendant diuretic and circulatory effects;
- A buddy system shall be practiced at all times. An employee that is observed shivering or showing signs of frostbite shall leave the cold area immediately;
- Work should be arranged to avoid sitting or standing for long periods; and
- All employees who work in cold areas should be trained in the following subjects:
 - Proper first aid treatment for cold stress;
 - Proper clothing practices;
 - Proper eating and drinking habits;
 - Recognition of impending adverse health effects due to cold; and
 - Safe work practices.

7.9 Spill Contingency Planning

~~Spills of contaminated soils, liquids, or other hazardous substances that may migrate to the stormwater system or adjacent water bodies are not anticipated at this site. However, should site conditions change spill containment and stormwater prevention procedures must be implemented on the site. This section applies to the potential migration of contaminated soils into the storm water system or the nearby stream. Standard Storm water prevention procedures will be implemented on the site. The Construction Manager must maintain a spill containment program as part of their overall health and safety program, which should include, but may not be limited to the following:~~

- ~~▪ Adequate spill containment equipment (e.g. pads, socks, booms), pallets, or dikes~~
- ~~▪ Drainage controls to prevent spills from entering storm drains or waterways (e.g., drain covers, diverters, etc...)~~
- ~~▪ Emergency shutdown procedures for quickly ceasing operations and stopping flow of hazardous materials~~
- ~~▪ Adequate PPE, including gloves, goggles, and respirators~~

7.10 Handling Drums and Containers

Hazardous substances, contaminated soils, liquids, and other residues are not anticipated to be present during site work. In the event that site conditions change, the Site Safety Officer, EH&S Director and Site Superintendent must coordinate to apply relevant sections of 8 CCR 5192(j), dependent on the material encountered. At a minimum, the following procedures should be implemented:

- Use of adequately labeled DOT, Cal/OSHA, and USEPA compliant waste drums and containers
- A designated storage area so drums and containers can be organized in such a manner as to minimize movement and disruption of ongoing construction operations
- Drum and containers will only be opened/disturbed when using proper safety precautions in accordance with the container label.

8.0 SITE ACCESS

Site access shall be controlled and secured during construction activities. Breaches to locked gates/doors, should they occur, shall be repaired as soon as possible. In addition, signs should be posted indicating the presence of hazards on-site and that unauthorized individuals should keep out.

9.0 OTHER

9.1 Confined Space Entry

If entries into trenches, underground vaults, and structures deeper than 4 feet are required, additional health and safety measures for entry into a confined space is required. All personnel shall not enter a confined space unless a Confined Space Assessment has been performed. The space must be tested for the absence of harmful contaminants and the presence of adequate oxygen levels. Approval must be given by the Onsite Safety Coordinator prior to entry into a confined space. Employees must have completed a Confined Space Safety Training within the last year prior to entering a confined space. Relevant Cal/OSHA requirements are specified in Title 8, California Code of Regulations, Article 108, and General Industry Safety Orders 5156-5159.

9.2 Sanitation

Provisions must be made for sanitation facilities for the site workforce, unless it is a mobile crew and they have transport readily available, the requirements do not apply. At a minimum, the provision of toilet facilities must meet the requirements of Title 8 Section 1526 which include one facility for less than 20 employees; or one toilet and one urinal for every 40 employees, up to 200; then one of each for every 50 employees thereafter. In addition, an adequate supply of potable water must be available at each jobsite for drinking and decontamination for those operations involving hazardous materials.

9.3 Illumination

Not anticipated as site operations will only be performed during daylight hours. Earthwork operations will not be permitted without adequate lighting. Therefore, unless provisions are made for artificial light, downrange operations must halt in time to permit personnel and equipment to exit the site and proceed through decontamination before dusk. Conversely, earthwork operations will not be permitted to begin until lighting is adequate.

9.4 Electrical Equipment Safety

All portable electrical hand tools and cords will be inspected daily or when used to ensure safe operation. Any equipment found defective is to be tagged and removed from service until repairs are completed. All portable equipment will be run through a portable ground fault circuit interrupter (GFCI). Each GFCI will be tested daily using the test circuit built into the unit. Any unit failing the test will be tagged and removed from service until repairs can be completed. All receptacles will be tested prior to use (using portable tester) to ensure that the receptacle has an adequate ground circuit, and the wiring is proper. Units that fail the test will be tagged and put out of service until repairs can be made. All electrical equipment and power cables used in and around wells or structures containing petrochemical contamination must be explosion-proof and/or intrinsically safe and equipped with a three-wire ground lead.

9.5 Fire Prevention

For cutting of metal structures parts etc. measures shall be taken to minimize sources of ignition. Where combustible or flammable materials are present cold cutting methods will be used to cut metallic components. If hot work is necessary, the area shall be cleared of flammable or combustible materials. All hot work will be conducted in accordance with hot work permit procedures. Fire extinguishers (typically type ABC) shall be maintained in the immediate vicinity of site operations at all times. If the potential for the accumulation of

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flammable vapors exist, periodic vapor-concentration measurements should be taken with an explosimeter or combustimeter. If at any time the vapor concentrations exceed 10% of LEL, then the Site Safety Officer, or designated field worker, should immediately shut down all operations. Only approved safety cans will be used to transport and store flammable liquids. All gasoline and diesel-driven engines requiring refueling must be shut down and allowed to cool before filling. Smoking is not allowed during any site operations except at designated on-site area(s). No open flame or spark is allowed in any area containing petroleum products, or other flammable liquids.

9.6 General Health

Medicine and alcohol can increase the effects of exposure to toxic chemicals. Unless specifically approved by a qualified physician, prescription drugs should not be taken by personnel assigned to operations where the potential for absorption, inhalation, or ingestion of toxic substances exists. Drinking and driving is prohibited at any time. Driving at excessive speeds is always prohibited. Skin abrasions must be thoroughly protected to prevent chemicals from penetrating the abrasion. Contact lenses should not be worn by persons working on the site.

9.7 Sunburn Prevention

Sunburn is caused by overexposure to ultraviolet light (sunshine). The symptoms of exposure are not usually apparent until two to four hours after the exposure ceases. Depending upon the severity of the exposure, the symptoms can range from reddening of the skin, accompanied by mild discomfort, to painful deep burns and blisters. Although light-haired, fair-skinned, blue eyed personnel are at the greatest risk of sunburn, all complexion types can develop sunburn.

The physical hazard of sunburn can be controlled by: (1) providing a shady rest area; (2) wearing appropriate clothing (long panty and tee shirts, i.e., no tank tops); (3) wearing sunscreen with an appropriate protection factor, as appropriate; and (4) working in shifts. This work will occur outdoors, and sunburn hazards are anticipated.

9.8 Noise

Control of noise hazards shall be in accordance with 8 CCR 5096(b). Noise hazard areas (greater than the 8-hour Time Weighted Average of 85 dBA or 140 dB impact/pulse) must be appropriately marked and hearing protection for noise attenuation worn when in the area. Noise monitoring may be appropriate for those areas of concern. Hearing protection may be required for those areas or operations that typically produce noise levels exceeding the PEL.

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Hearing protectors, medical surveillance, and training will be in accordance with the Hearing Conservation Program.

10.0 WASTE MANAGEMENT

10.1 Management of Soil

All soil excavation, management, handling, and stockpiling activities shall be conducted consistent with procedures specified in Section 6 of the Soil Management Plan.

11.0 REFERENCES

OSHA Regulations in 29 CFR 1910.120 (Federal Register 45654, December 19, 1986;
Updated March 6, 1989.



Appendix A

Agreement and Acknowledgement Statement

Appendix B

Site-Specific Environmental Health and Safety Plan Amendment Sheet



APPENDIX B

Site-Specific Health and Safety Plan Amendment Sheet			
Project Name			
Project Number			
Location			
Changes in field activities or hazards:			
Proposed Amendment:			
Proposed by		Date	
Approved by		Date	
Declined by		Date	
Amendment Number			
Amendment Effective Date			

Appendix C

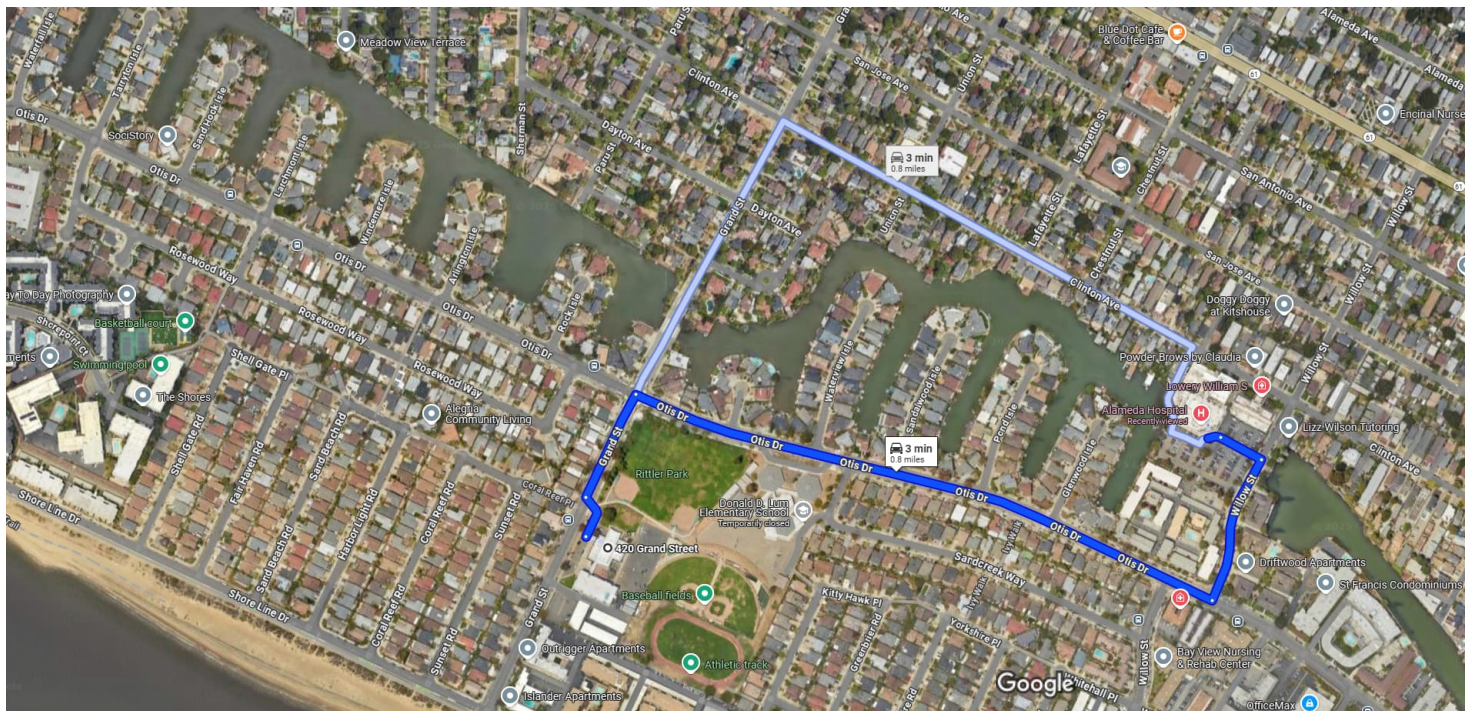
Explanation of Hazard Evaluation Guidelines

APPENDIX C
 Explanation of Hazard Evaluation Guidelines

Guideline	Explanation
Hazard: Airborne Contaminants	
Threshold Limit Value	The time-weighted average concentration for a (TLV-TWA) normal 8-hour workday and a 40-nearly all workers may be repeatedly exposed without adverse effect.
Time-Weighted Average	
Permissible Exposure Limit (PEL)	Time-weighted average concentration similar to (and in many cases derived from) TLV values.
Immediately Dangerous to Life or Health (IDLH)	"IDLH" or "Immediately Dangerous to Life or Health" means any atmospheric condition which poses an immediate threat to life, or which is likely to result in acute or immediate severe health effects. This includes oxygen deficiency conditions.
Hazard: Explosion	
Lower Explosive Limit (LEL)	The minimum concentration of vapor in air below which the propagation of a flame will not occur in the presence of an ignition source.
Upper Explosive Limit (UEL)	The maximum concentration of vapor in air above which propagation of a flame will not occur in the presence of an ignition source.
Hazard: Fire	
Flash Point	The lowest temperature at which the vapor of a combustible liquid can be made to ignite momentarily in air.



Appendix D Site Maps



Imagery ©2025 Airbus, Maxar Technologies, Map data ©2025 Google 200 ft

420 Grand St
Alameda, CA 94501

- ↑ 1. Head northeast toward Grand St
184 ft
- ↘ 2. Turn right onto Grand St
459 ft
- ↘ 3. Turn right onto Otis Dr
0.5 mi
- ↙ 4. Turn left onto Willow St
0.1 mi
- ↙ 5. Turn left
187 ft
- ↑ 6. Continue straight
Destination will be on the right
52 ft

Alameda Emergency Care Center
2070 Clinton Ave, Alameda, CA 94501