

APPENDIX VII

SAMPLE HEALTH AND SAFETY PLAN

SAMPLE ONLY

HEALTH AND SAFETY PLAN

CITY OF TORRANCE
PACIFIC COAST HIGHWAY
FROM CALLE MAYOR TO JANET LANE SAFETY
IMPROVEMENTS, (I-133)

CONSTRUCTION CONTRACTOR NAME

MAILING/STREET ADDRESS

CITY, STATE

PREPARED BY
(CONSULTING FIRM)

(DATE)

HEALTH AND SAFETY PLAN SUMMARY

Project Location: Pacific Coast Highway between Calle Mayor and Janet Lane, Torrance, California

Project Representatives:

- Contractor Project Manager, _____ () ____-____
Cell No.: _____ () ____-____
- Project Superintendent/
Safety Officer _____ () ____-____
Cell No.: _____ () ____-____
- Alternate Safety Officer _____ () ____-____
Cell No: _____ () ____-____
- Consulting CIH: _____ () ____-____
Cell No: _____ () ____-____
- City of Torrance Engineer, Beth Overstreet (310) 618-3074
Cell: (310) 702-6908

Scope:

- Excavation, stockpiling, and disposal of soil containing lead at concentrations in excess of California hazardous waste thresholds.

Hazard Summary:

- Mechanical – heavy equipment and vehicle traffic, struck-by injuries, slip/trip hazards
- Earthwork – borings; trenches and excavations
- Overhead-underground utilities
- Noise – heavy equip., traffic
- Night work
- Thermal extremes (summer) –heat stress
- Inorganic lead – Refer to Lead Compliance Plan

Control Summary:

- Site Control, Personal Protective Equipment (PPE) – hard hat, safety glasses, ANSI Class II/III safety vest; traffic control
- Contractor compliance with T8 CCR §341(2)(5)(A) Excavation Permit & Article 6 §§1540 & 1541.1 Competent Person
- Contractor – utility location - identification
- Hearing Protection – plugs or muffs
- Illumination – portable light stanchions
- Appropriate dress, rest/work cycle, fluids
- Dust suppression (T8 CCR §5145 wet methods); sanitation & personal hygiene

Hospital Reference: Providence Little Company of Mary Medical Center
4101 Torrance Blvd.
Torrance, California 90503
310.540.7676

Directions: Take Pacific Coast Highway north. Turn right on Calle Mayor. Turn left on Anza Avenue. Proceed 1.4 miles. Turn right on Torrance Blvd. Arrive at the hospital on the left (see Vicinity Map, Figure 1).

Emergency Assistance:

Fire/Police/Medical Assistance: **911**
Poison Control: **800.876.4766**

1.0 INTRODUCTION

This Health & Safety Plan (HSP), in combination with the project Lead Compliance Plan is a compilation of health and safety guidelines, material handling procedures and/or protocols that are intended to reduce or eliminate the potential risk of traumatic injury from conducting project tasks or operations and minimize potential worker exposure to inorganic lead through inhalation of airborne dust or ingestion of impacted soils. The Plan is also intended to minimize potential exposure risk to the public by preventing offsite migration of fugitive dust during handling of impacted soils.

While some aspects of the project do not specifically apply, this Plan has been prepared in general accordance with requisites of Caltrans to meet Right-of-Way (ROW) permit requirements and conditions set forth in the "Construction Safety Orders," specifically Title 8 California Code of Regulations (T8 CCR) §§1532.1 Lead. Conformance with its contents does not warrant that injuries, exposures and/or environmental releases will not occur.

This HSP is not a training tool and does not contain the degree of detail necessary to train an employee on the appropriate performance, approach and/or equipment-use protocols referenced, herein. Persons working on this project and referring to this HSP shall meet the minimum training requirements described in Section 2.2.

This HSP has been prepared to specifically support the construction activities described herein. The provisions described herein apply to employees of _____, herein referred to as "CONTRACTOR", its subcontractors, and representatives of the City of Torrance only. Representatives of Caltrans or other representatives of state or local government are expected to observe the safety rules and performance requirements established by their respective organizations, provided they do not conflict with this Plan, but will not be responsible for enforcing the conditions of this Plan on these representatives.

The contents of this Plan are based on factors and conditions understood prior to the start of the construction activities, specifically the July 31, 2015 *Aerially Deposited Lead Site Investigation Report, Pacific Coast Highway, Between Calle Mayor and Janet Lane, Torrance, California* prepared by Geocon West, Inc. Soil lead concentrations reported for 60 samples collected at the project site ranged from 1.6 to one sample reported as 1,200 milligrams inorganic lead per kilogram of soil (mg/kg); the average concentration of lead for the 60 samples was 124 mg/kg.

If factors and conditions change during the performance of the activities, including the service scope, or if previously unrecognized conditions exist that were not considered in the preparation of this Plan, that information shall immediately be brought to the attention of the person(s) preparing and approving this Plan and the HSP shall be modified accordingly.

All project personnel, including subcontractors and City of Torrance and/or Caltrans construction inspectors will review, and become familiar with the elements of the Plan prior to site work. A copy of the Plan will be provided to all subcontractors and the Caltrans Resident Engineer or designee involved with project activities.

A pre-job conference will be held to delineate roles and responsibilities, discuss key elements of the Plan, and coordinate activities. This Plan is a "working document" to be used by affected personnel. The Plan may be modified at any time in accordance with this Section to adequately address changing conditions or previously unrecognized exposure hazards which may be encountered during the project.

This Plan expires 6 months from the date of CIH approval unless updated or amended; ref. T8 CCR §1532.1(e)(2)(E) – Lead, “Written programs shall be revised and updated at least every 6 months...”

1.1 Project Location and Description

Site Location/Address: Pacific Coast Highway (PCH/SR 1) between Calle Mayor and Janet Lane, Torrance, California

1.2 Background

The City of Torrance is planning on performing highway improvements along PCH between Calle Mayor and Janet Lane. The project work scope involves excavation and will disturb soil material, some of which may contain aerially deposited lead (ADL).

1.3 Project Objectives

This project includes excavation, loading, and disposal of lead impacted soil. Soil containing California hazardous waste concentrations of lead will be removed and disposed of off-site at an appropriately licensed facility. The upper 6-inches of soil within the project limits will be removed and disposed of at a California Class 1 Disposal Site.

1.4 Planned Scope of Services

- Soil excavation and grading; and
- Loading, transport and disposal of lead impacted soils.

1.5 Schedule

Anticipated Period of Performance: Summer 2016

Anticipated Weather/Temperature: Anticipated dry conditions, 75 degrees F and warmer

2.0 ADMINISTRATIVE REQUIREMENTS/CONTROLS

2.1 Personnel

Personnel responsible for project safety include the Project Manager and Project Superintendent/Safety Officer and participating project personnel.

2.1.1 Project Manager

The Project Manager has ultimate authority and responsibility for project Health and Safety. Accordingly, he/she has the responsibility to:; audit compliance with the provisions of this HSP; suspend project activities or modify service practices for health and safety reasons; and, to dismiss from a project site individuals whose onsite conduct either endangers the health and/or safety of others or is judged not to comply with the provisions of the HSP. The Project Manager is responsible for sharing/distributing the HSP to participating field personnel and to an authorized representative of each project subcontractor. The Project Manager is also responsible for implementing all provisions of the HSP and any applicable addenda. Implementation includes:

- Reviewing and approving the HSP requirements;
- Presenting an overview of the provisions of the HSP with project participants;
- Providing the safety equipment specified herein;
- Collecting and submitting the requisite health and safety documentation (training rosters/certificates, air monitoring records (exposure assessments); site personnel logs, medical approvals), and copying them to the Safety Officer, if appropriate;

Note: Monitoring and exposure assessment records will be maintained in accordance with the provisions of T8 CCR 1532.1 – Lead, and 3204 Access to Employee Exposure and Medical Records.

- Performing, or arranging for worker exposure monitoring to be performed as specified in the companion Lead Compliance Plan (ref: T8 CCR §1532.1(d) Lead Exposure Assessment);
- Designating/identifying a qualified project member as the Safety Officer; and,
- Reporting all Plan amendments to the Consulting CIH.

2.1.2 Project Superintendent - Safety Officer

The designated Safety Officer is responsible for assisting the Project Manager with onsite implementation of the HSP. The Safety Officer's responsibilities include:

- Maintaining project safety equipment supplies;
- Monitoring daily meteorological forecast to anticipate on-site environmental conditions such as wind direction and speed;
- Assures adequate water, or source of water is available on site to allay potential airborne dust;
- Setting up Site Controls, as specified herein;
- Directing decontamination procedures, as appropriate;
- Enforcing the provisions of this HSP;
- Directing emergency response operations until public emergency personnel arrive; and,
- Reporting all incidents and infractions to the Project Manager.

The Safety Officer has the authority to suspend project activities any time he/she determines that the provisions of the HSP are inadequate to provide workplace conditions conducive to employee safety. Further, the Safety Officer is to inform the Project Manager of any individuals whose onsite actions jeopardize either their health and safety or the health and safety of others.

2.1.3 Alternate Safety Officer

The Alternate Safety Officer shall perform the same tasks as should the Safety Officer not be available.

2.1.4 Consulting Certified Industrial Hygienist

The Consulting CIH provides industrial hygiene and safety technical support to the Project Manager and Safety Officer. In this capacity, s/he:

- Provides training, as requested;
- Approves or recommends airborne sampling strategies and monitoring equipment;
- Provides technical support for the selection and use of Personal Protective Equipment (PPE); and,
- Provides arbitration on project health and safety issues.

2.1.5 Project Field Staff

All project personnel are responsible for:

- Complying with the provisions of this HSP;
- Performing services in a manner that is consistent with good health and safety practice; and
- Reading and being knowledgeable of the contents of this HSP.

2.2 Personnel Training

2.2.1 General Site Employees

All personnel assigned to this removal project have successfully completed all applicable training requirements as outlined in T8 CCR §5192(e), "Training" (40-Hour Certificates, and current annual Refresher Training).

CIH consultant employees whose responsibilities include onsite supervising or managing project tasks as defined under Title 8, CCR Section 5192(e)(4) shall hold a Supervisor Certificate documenting at least eight additional hours of specialized hazardous waste operations management training.

2.2.2 Pre-Project Briefing-Training

Site employees will attend a project orientation prior to starting the project. The orientation will review all elements of the HSP, including pre-emergency planning, specifically: 1) the location of potential health and safety hazards on the site and 2) requirements of the HSP. The training will also address

other Cal/OSHA requirements such as the CONTRACTOR's Hazard Communication Program (T8 CCR §5194), including the potential hazards of exposure to 1532.1 Lead, and the Injury and Illness Prevention Program (T8 CCR §§3203 and 1509).

2.2.3 “Tailgate” Meetings

During the active field components of the project, the Project Manager or designee will conduct regular (i.e., weekly or daily, as appropriate) “tailgate” safety meetings. This meeting will include information on the following subjects, as applicable:

- Changes to project scope;
- Recognized changes to site conditions;
- Review of safe work practices;
- On or off the project safety practices;
- Feedback from employees on hazards, safety suggestions, or concerns; and
- Recognition for compliance, good safety performance or attitude.

Attendance at the tailgate meetings is considered a part of each employee’s job responsibilities.

2.3 Medical Surveillance

The Geocon July 31, 2015 *Site Investigation Report* provides sampling data from 60 soil samples collected from the project limits. The average concentration of lead for the 60 samples is 124 mg/kg. One of the samples was reported to contain a concentration of 1,200 mg/kg, all of the other samples reported concentrations less than 600 mg/kg. The average of the levels reported is equivalent to 124 parts of inorganic lead per million parts of soil (ppm). According to Cal-EPA guidelines, lead levels that are equal to or above 400 ppm in bare soil are considered hazardous for children and levels that are equal to or above 1,000 ppm are considered hazardous for adults. T8 CCR §1532.1(d)(5)(B) Lead – Negative Initial Determination, states materials that contain lead at concentrations less than 0.06% lead dry weight (600 ppm) are sufficient to establish a negative determination.

< < < CONTRACTOR TO OUTLINE ITS OWN MEDICAL SURVEILLANCE PROGRAM TO BE ENFORCED FOR THE PROJECT. > > >

Project personnel are to arrive at the jobsite well rested and physically prepared to perform assigned tasks.

3.0 HAZARD AND CONTROL ANALYSIS

The following hazards were assessed to either exist, or have the potential to develop, during the performance of the project activities:

TASKS	HAZARDS							
	MECHANICAL	UNDERGROUND UTILITY	NOISE	BIOLOGICAL	RADIOLOGICAL	THERMAL	CHEMICAL	OTHER
Driving	X							
General Non-Intrusive Soil Activities	X		X	X		X		
Cleaning & Grubbing;	X	X	X	X		X	X	
Earthwork – excavation, grading:	X	X	X	X		X	X	

3.1 Safe Driving

Hundreds of workers are injured or die in job-related motor vehicle accidents annually. Motor vehicle accidents are one of the number-one causes of employee injuries and deaths. Most accidents can be avoided by practicing defensive driving. CONTRACTOR's policies mandate that employees:

- Prepare themselves and their vehicle for the road before travel;
- Drive according to posted speed limits unless adverse conditions necessitate slower speeds;
- Never tailgate, employ the three (3) second rule in following vehicles;
- Fully comply with California Vehicle Code and other local laws and regulations regarding the use of cellular phones for communication while driving - talking on a cell phone and/or texting while driving is not only a significant hazard to yourself and others, but also violates CONTRACTOR's H&S policy; and,
- Use practical driving procedures in cities, on the freeway, and in rural areas.

3.2 Mechanical Hazards

Type(s)/Source:

- Material Handling/Back Injury
- Striking (slips, trips); and
- Struck-by injuries

Qualified Exposure Risk: Moderate

Hazard Control(s):

- Safe Lifting

- Isolation - shoulder closure traffic control/work methods/no work during inclement weather or darkness
- PPE – ANSI approved Class III safety vests & night (low visibility) ensemble, hardhats, safety glasses

3.2.1 Material Handling/Back Injury

Hazard: It is expected that field personnel will be required to lift heavy equipment and supplies and/or perform arduous tasks during this project. Accordingly, back injuries or physical strain may be caused by: routine lifting or one-time-only lifting; the weight of a lifted object; the frequency of lifting; bending, twisting, or rotating during lifting; prolonged sitting; exposure to vibrations; poor arch support in shoes; and, not stretching prior to physical activity. If the following “control” mechanisms are not exercised, debilitating back injury may occur.

Control(s): Before attempting to lift and carry an object, always test its weight first. If it is too heavy, get help. If possible, use mechanical lifting aids. If manageable, the proper method for lifting is:

- Get a good footing;
- Place feet about shoulder width apart;
- Bend knees to pick up load. Never bend from the waist;
- Keep back straight;
- Get a firm hold. Grasp opposite corners of the load, if possible;
- Keep the back as upright as possible;
- Lift gradually by straightening the legs - don't jerk the load;
- Keep the weight as close to the body as possible; and
- When changing directions, turn the entire body, including the feet. Don't twist the body.

If devices are used for handling materials manually (e.g., two-handed lifters, barrel ring clamps, hand trucks, wheelbarrows, etc.), wear protective equipment like gloves and safety shoes to minimize the potential of appendages becoming pinched or smashed between the load and stationary features. Also, avoid overloading the device.

3.2.2 "Striking" Injuries

Hazard: Injuries can, and often, result when a person (a kinetic mass) unexpectedly instigates contact with another kinetic mass. These occurrences typically result from inadvertent slips, trips and falls.

Control(s): To minimize risks of “slip/trip” hazards, personnel shall maintain a constant program of good housekeeping, keeping areas clear of trip hazards and wet and slippery surfaces. All hand tools shall be regularly secured and care shall be taken when entering areas where work is being performed above eye level.

3.2.3 "Struck-by" Injuries – Shoulder or Median Work

Hazard: Injuries can, and often, result when one becomes an unexpected receptor of contact with a moving vehicle or another kinetic mass. These occurrences typically result from the worker being struck by a dropped or collapsed mass or a moving piece of equipment or vehicle. This is particularly important during nighttime operations where visibility is restricted.

Controls: PPE – ANSI approved Class III reflective vest (speed of highway traffic >50 mph) and reflective head gear (hard hat); night work reflective ensemble. Personnel working in proximity to operating equipment shall maintain a high degree of awareness and remain out of harm's way of the moving portions of the equipment.

Trucks, backhoes, excavators and other heavy equipment shall be equipped with a backup alarm to warn workers that the vehicles are moving in reverse. In addition, personnel shall also, carry an air horn, or other warning device whenever working in proximity to heavy equipment where the operator's full view of the work area is impeded.

If shoulder and/or lane closure is required to perform the services, it shall be provided in conformance with Caltrans' *Standard Provisions for Maintaining Traffic* as specified in *Standard Plans T-10, T-10A, T-11, T-12, T-13, and T-14*.

Workers shall maintain a persistent awareness of traffic patterns/conditions throughout the duration of the field services.

3.3 Underground Utility Hazards

Type(s)/Source: Electric, gas, water, sewer, communication cable

Potential Hazards: Shock or electrocution, work area flooding

Qualified Exposure Risk: Moderate to high

Hazard Control: Site Control, Isolation, and Third Party Inspection, i.e., independent Utility Locator

Hazard: Contact with electrical current can cause shock, electrical burns, and/or be instantly fatal if shovels, picks, breaker bars, or powered augers contact energized electrical wires or cables.

Control(s): First mark out all plant excavation locations. Contact Underground Service Alert (USA) at 800-642-2444 and review as-built plans before performing any digging activity. Soil excavation should not proceed until all locating activities have been completed and fully documented in the site records. The initial pre-project orientation meeting should include a review of the underground utility locations. The position of any suspected underground utility lines should be marked on the site plan. The site safety orientation shall include a site walkover of each marked utility or line.

Should personnel encounter a suspicious sub-surface condition that may be a previously unidentified underground line or utility, they should immediately cease work, secure their equipment and notify the excavation CONTRACTOR'S Competent Person or their supervisor.

3.4 Noise Hazards

Equipment operated at sampling sites may present a noise hazard to employees. In all cases where the sound pressure levels may exceed a time-weighted average noise dose of 85 decibels (the Action Level), the Safety Officer will evaluate exposures according to the CONTRACTOR'S Hearing Conservation Program (ref. T8 CCR §§5095-5100). Selection of hearing protection will be made in accordance with the CONTRACTOR'S Safety Equipment Guide. Only hearing protectors (ear plugs or muffs) with a Noise Reduction Rating of 20 dB, or higher, will be used. When worn, earmuffs will be donned in the "over the head" position with the hair pulled back from the sealing surface.

Note: In general, noise levels in excess of 85 dBA interfere with communication between two individuals speaking in a normal tone of voice at a distance of 3 feet from one another.

3.5 Biological Hazards

Type(s)/Source: Biting insects (mosquitoes, wasps, bees & ticks) and animals.

Qualified Exposure Risk: Low

Primary Controls:

- Isolation (Attention to detail – avoidance)
- PPE (Gloves/boots/long-sleeve shirts)
- Insect repellent, barrier crèmes, wasp spray

Hazard: Contact with plants, insects, and animals likely to be present at the site should be avoided. Stinging and biting insects, including bees, spiders, and ticks, can cause extreme discomfort and/or serious allergic responses. Insect bites are generally not dangerous, unless they are from a poisonous insect or mosquitoes potentially carrying West Nile virus.

The primary concern with animal bites and scratches is the potential for infection and/or rabies. Snake or scorpion bites can also be dangerous, but more from infection or trauma than the toxins injected by the snake or scorpion.

Control(s): Before beginning fieldwork each day, inspect the work area for the presence of standing water and inhabitant reptiles and take measures necessary to minimize the potential for contact. Specially prepared topical barriers and insect repellent containing approximately 50% DEET for protecting exposed skin from biting insects. These products are commercially available and may minimize the potential for development of skin rashes and/or irritations due to such exposures; apply insect repellent sparingly to exposed skin. Note: Avoid contacting plastic zippers or other plastic

closure mechanisms on clothing, equipment bags, etc., with DEET containing crème which will cause these materials to degrade.

If you are allergic to bee or wasp stings, be sure to have the appropriate medically approved first aid available (e.g., an epi-pen) on the project. If you are stung, administer first aid and seek immediate medical attention.

Be sure a reptile or animal bite victim obtains medical attention quickly if a bite or scratch occurs, especially if there is a potential that it was poisonous. In the meantime, administer First Aid by scrubbing the wound with soap and water, and rinsing thoroughly under running water. Dry off and place a clean bandage on the wound. Victims of these bites should lie down and remain calm and motionless; cold packs should be applied and medical attention sought immediately.

3.6 Thermal Hazards – Heat Stress and Heat Strain

Type(s)/Source: Solar load – working outdoors in summer months

Qualified Exposure Risk: Moderate to high

Primary “Control”:
Compliance with T8 CCR §3395 Heat Illness Prevention
Dress appropriately for the expected weather conditions;
Adequate supply of drinking water, fluid consumption.

Hazard: In addition to the chemical, physical and operational hazards referenced above, heat stress may present a potential hazard to personnel during the on-site operations. This hazard can be created when individuals work in warm temperatures while wearing relatively impervious chemical protective clothing (CPC), i.e., Tyvek™ coveralls. When ambient air temperatures at a project site exceed approximately 75 degrees Fahrenheit when CPC is worn, heat stress can result.

Also, when ambient air temperatures at a project site exceed 85 to 95 degrees Fahrenheit, heat stress is a potential risk regardless if CPC is worn or not worn. If these conditions are encountered, the following precautions shall be implemented:

Controls: The Project Manager, Safety Officer, or designee will regularly monitor daily weather forecasts and monitor ambient air temperatures; for any work performed during daylight hours when temperatures are anticipated to exceed 85 degree Fahrenheit, a shaded rest area must be available and the shaded area shall be located as close as practicable to the areas where employees are working.

In addition, routinely observe and monitor construction workers for signs and symptoms of heat stress including: dizziness, profuse sweating or lack of perspiration (hot dry skin), and skin color change – flush appearance. If necessary, monitor for increased heart rate and potential vision problems. Personnel who exhibit any of these symptoms will immediately be removed from field work to a shaded location, and required to consume 2 to 4 pints of cool water while resting. Individuals exhibiting symptoms of heat stress should not return to work until the symptoms are no longer recognizable.

Note: If symptoms of hot, dry skin or other critical symptoms appear, immediately implement emergency medical procedures by dialing 911. While awaiting the arrival of emergency medical services attempt to cool the individual’s body by saturating their upper clothing (shirt) with cool, but not chilled or cold water.

To control the potential occurrence of heat stress, preventive measures will be evaluated and implemented on a daily basis (ref. T8 CCR §3395 Heat Illness Prevention). These measures will include:

- Schedule periodic cooling and rest (recovery) periods in a shaded area (ref. T8 CCR §3395(d) Heat Illness Prevention);
- Designated shaded rest areas, or portable shade structures must be available when the ambient daily high temperature is predicted to exceed 85 degrees Fahrenheit, or 75 degrees Fahrenheit if CPC will be required to be worn; and,
- Inducement of water intake, the equivalent quantity of 1 quart of water per hour per on-site worker (2 gallons per person) be available before work begins unless provisions for immediate water replenishments are available (nearby store, plumbed water supply, etc.). Water must always be replenished before running out (ref. T8 CCR §3395(c) Heat Illness Prevention).

3.7 Illumination

If phases of construction work for this project are scheduled to be performed at night poor illumination will contribute significantly to the hazards of site tasks. During night and early morning work, or during periods of limited visibility due to adverse weather conditions, all work areas will be provided with illumination using portable generators with light stanchions meeting the minimum intensities specified in the Cal/OSHA regulation, T8 CCR §3317.

In addition, all roadway construction warning signs complying with traffic control procedures outlined in Section 3.2.3 will be illuminated.

3.8 Chemical Hazard – Aerially Deposited Inorganic Lead

Aerially deposited inorganic lead is known to impact construction soils in concentrations ranging from 1.6 to a high of 1,200 mg/kg; the average concentration of lead for the 60 samples collected was 124 mg/kg with only one sample reported as 1,200 mg/kg, all other samples were less than 600 mg/kg. The average of the levels reported is equivalent to 124 parts of inorganic lead per million parts of soil (ppm). According to Cal-EPA guidelines, lead levels that are equal to or above 400 ppm in bare soil are considered hazardous for children and levels that are equal to or above 1000 ppm are considered hazardous for adults. T8 CCR §1532.1(d)(5)(B) Lead – Negative Initial Determination, states materials that contain lead at concentrations less than 0.06% lead dry weight (600 ppm) are sufficient to establish a negative determination. A “Negative Initial Determination” is defined in T8 CCR §1532.1 Lead as airborne concentrations below the Action Level of 30 µg/m³ lead.

CHEMICAL NAME CAS #	ROUTES OF ENTRY	PUBLISHED EXPOSURE LIMITS		
		CATEGORY	CONCENTRATION	SOURCE

Lead, Elemental & Inorganic Compounds 7439-92-1	Inhalation Ingestion	PEL-TWA Action Level	50 µg/m ³ 30 µg/m ³	Cal/OSHA
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Although comprehensive information of the hazards, worker exposure assessment and control of potential risks to aerially deposited inorganic lead are detailed in the CONTRACTOR's Lead Compliance Plan, the following “Exposure Controls” are mandatory to fully implement this Plan:

- Regulated work zone(s) will be established – site control;
- T8 CCR §5145 wet methods will be consistently used to suppress potential airborne dust;
- Workers will avoid unnecessary contact with suspected lead impacted soils, and potential inhalation of airborne contaminated soil/dust; and,
- Follow good personal hygiene and sanitation practices (ref. Section 4.2)

4.0 GENERAL HEALTH AND SAFETY REQUIREMENTS

4.1 Air Monitoring – Aerially Deposited Lead (ADL)

Industrial hygiene monitoring will be performed in accordance with the CONTRACTOR's Lead Compliance Plan, specifically Title 8 CCR §1532.1(d) Exposure Assessment.

4.2 Personal Hygiene

The Safety Officer will establish hand-wash equipment/facilities, including clean water, hand soap, waterless hand cleaner, sanitary wipes and clean towels at the project sampling locations. All CONTRACTOR's personnel, subcontractor employees if assigned, and Client field inspectors and engineers leaving the project site (work zones) will clean potential impacted soils from their footwear and wash hands prior to leaving the project site; ref. T8 CCR §1527(a)(2). In addition, the following procedures will be followed to ensure worker protection against potential exposure through ingestion:

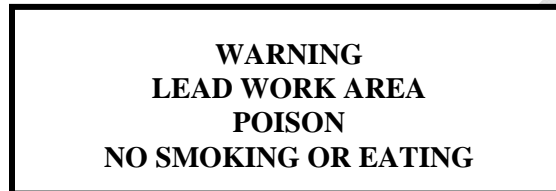
- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-in-mouth transfer and ingestion of material is prohibited in any area designated as being potentially impacted.
- Hands and face must be thoroughly washed upon leaving the work area, and before eating, drinking, or other non-project activities.
- Avoid unnecessary kneeling, sitting, leaning, or general contact with potentially impacted surfaces or with surfaces suspected of being potentially impacted by hazardous materials (i.e., puddles, mud, leachate, etc.).

4.3 Regulated Work Area(s)

Regardless of the potential airborne levels of lead determined by air monitoring required in the Lead Compliance Plan, formal work zones – Regulated Work Areas will be established to control adjacent

traffic and access to construction areas by the public. Conventional construction signs, barricades and caution tape shall be utilized to restrict access and egress to lead impacted areas (zones) to maintain security, and prevent the public access to designated sites.

If analytical results from representative air monitoring conducted in accordance with the Lead Compliance Plan exceed 30 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$), the Regulated Work Area(s) will be posted with signs stating:



4.5 Code of Safe Practices

In addition to CONTRACTOR's Code of Safe Practices, the following general safe work practices to be utilized by all project personnel:

- All nonessential personnel will be kept clear of Regulated Work Areas.
- The use of entertainment and personal communication devices in the work zone shall not be allowed.
- Adequate signs and safety devices will be installed on equipment.
- All site employees will wear assigned personal protective equipment and level of protection as designated by the Safety Officer.
- Eating, drinking, smoking, chewing gum or tobacco, or application of cosmetics is allowed in designated areas only.
- At a minimum, all personnel will wash with soap and water before lunch, using the restroom, and at the end of work. The face and hands shall be washed before eating, drinking, smoking, chewing gum, applying cosmetics, etc.
- Over-the-counter drugs and prescription medications must be reported to the Safety Officer for clearance before an employee is allowed to work within a Regulated Area. Medicine and alcohol can potentiate the effects of exposure to lead. Personnel should take neither if the likelihood of such potentiation exists. Being under the influence of alcohol on the job site is prohibited.
- When portable electric tools and equipment are used, three-wire extension cords are required.
- Employees will advise their supervisors of any malfunctioning equipment immediately.
- An ongoing safety maintenance program for tools and equipment will be instituted. Inspections will occur on a regular basis to ensure parts are secure and intact. Defective equipment will be repaired or replaced.
- Appropriate engineering controls and equipment guards will be installed on tools and equipment. This includes seat belts & backup warning lights and signals.
- A list of names of personnel who are trained in CPR and first aid shall be available.
- Labels shall be placed on containers of hazardous materials.

- Employees shall be trained to identify effects and symptoms of potential exposure to inorganic lead as outlined in Section 2.2 and Attachment A to the Lead Compliance and report them immediately.
- Under no circumstances are CONTRACTOR's personnel authorized to enter a Permit-Required Confined Space, or a trench or excavation 4 feet or greater.

5.0 PERSONAL PROTECTIVE EQUIPMENT

The employment of the aforementioned engineering controls is the preferred method of providing personal protection from hazards identified at this and any site. PPE provides acceptable secondary recourse, but only when engineering controls fail or cannot adequately eliminate exposure to the hazard. The use of PPE is intended to provide protection for onsite personnel from operational hazards that cannot be controlled through other safety procedures or work practices. PPE required to be onsite for each worker during this project will include:

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Hard Hat (without face Shield) | <input checked="" type="checkbox"/> Safety Glasses |
| <input checked="" type="checkbox"/> Synthetic/Leather Safety Boots/Shoes | <input checked="" type="checkbox"/> Disposable inner gloves (for sample handling) |
| <input type="checkbox"/> Chem. Resistant Boots | <input type="checkbox"/> Chem. Resistant gloves |
| <input checked="" type="checkbox"/> Synthetic/Leather work gloves | <input checked="" type="checkbox"/> Air-Purifying Respirator (APR) |
| <input checked="" type="checkbox"/> Hearing protection - Ear Plugs/Muffs | <input checked="" type="checkbox"/> APR Cartridges – Magenta HEPA Filters |
| <input checked="" type="checkbox"/> Class II ANSI Approved Safety Vest | <input type="checkbox"/> Tyvek coveralls |
| <input checked="" type="checkbox"/> Other: Class III ANSI Approved Safety Garments for night work. | |

Only ANSI approved PPE and NIOSH approved respirators will be assigned for use. The use applications for this equipment are summarized in the following matrix. Specific procedures are further described below.

TASKS	PPE												
	Hard Hat	Safety Glasses	Synthetic/Leather Boots	Chemical Resistant Boots	Disposable Inner Gloves	Chemical Resistant Gloves	Leather Gloves	Ear Plugs/Muffs	Air-Purifying Respirator	APR Cartridges	ANSI Approved Safety Vest	Tyvek® Coveralls	Other
General Non-Intrusive Soil Activities	X	X	X								X		X
Cleaning & Grubbing;	X	X	X		X		X	X	C	C	X		X
Earthwork – excavation, trenching, grading:	X	X	X		X		X	X	C	C	X		X

X = required

C = required IF respiratory protective equipment is required - level C Protection (ref. Section 5.1)

5.1 Respiratory Protection – Level C Protection

Unless compliance with CONTRACTOR's Lead Compliance Plan documents worker exposure assessments below the 30 $\mu\text{g}/\text{m}^3$ Action Level - Negative Exposure Assessments, Level C half-mask air-purifying (APR) respirators fitted with HEPA (P100, Magenta) cartridges will be required if engineering controls – wetting impacted soils to allay airborne dust, are not deemed effective.

The Safety Officer, in consultation with the Project Manager, will determine the feasibility, based on compliance with CONTRACTOR's Lead Compliance Plan of downgrading the level of protection from Level C to Level D protection - no inhalation hazard, APRs not required.

NOTE: Based on the 124 mg/kg average concentration of lead documented from the 60 soils samples collected within the construction zone, respiratory protection will not be required during the period the initial exposure determinations are being performed; soils containing less than 600 mg/kg (ppm), employers can assume Negative Exposures less 30 $\mu\text{g}/\text{m}^3$, ref. T8 CCR §1532.1(d)(5)(B) Lead.

5.2 PPE – Level D Protection

The protective equipment to be donned by personnel working in the construction (Exclusion) zone(s) includes:

- Body Protection: Body protection shall include the use of "work clothing," including long pants and long- or short-sleeved shirts, and Class II ANSI approve safety vest unless work is performed at night where Class III ANSI approved safety vest and pants will be donned.
- Head Protection: Non-metallic hard hats shall be worn by all personnel; ref. T8 CCR §§1514 & 3385 Head Protection.
- Hearing Protection: Hearing protection shall include the use of foam ear inserts or muffs; ref. T8 CCR §5098.
- Eye & Face Protection: Protective eye wear (i.e., safety glasses) shall be worn by personnel working in direct proximity to operating heavy equipment and highway traffic; ref. T8 CCR §§1514 & 3385 Eye Protection.
- Hand Protection: Appropriate hand protection shall be required for employees whose work involves unusual and excessive exposure of hands to cuts capable of causing injury or impairments; ref. T8 CCR §§1514 & 3384 Hand Protection.
- Foot Protection: Foot protection, such as steel toed shoes or boots shall be required for employees who are exposed to foot injuries from electrical hazards, falling objects, or crushing or penetrating actions; ref. T8 CCR §§1514 & 3385 Foot Protection.

5.3 Miscellaneous Safety Equipment

Additional safety equipment available to personnel working at the site includes cellular phones for communication; portable radios shall be provided if cellular service is not available.

6.0 DECONTAMINATION

The Safety Officer will establish a Regulated Work Zone around the project construction site. The zone will be established to control access to the work area and minimize the potential spread of potentially contaminated soils.

6.1 Equipment Decontamination

The following decontamination (cleansing/disposal) procedures for equipment and PPE have been developed with the intent of reducing the potential for the transfer of potentially hazardous soil from the site. Decontamination should be performed in direct proximity to each work area. The primary principle in consideration of decontamination procedure is: Avoid unnecessary contamination of PPE and Sampling Equipment.

Visible soils and-or mud on all equipment will be thoroughly cleaned off after completing work involving lead impacted soils and-or prior to leaving the project site. Decontamination-cleaning will be conducted in an isolated area within the work zone designated by the Project Manager or Safety Officer.

Prior to leaving the project site, heavy equipment will be cleaned within the designated decontamination-cleaning area. Cleaning (decontamination) will include physically scraping and-or rinsing visible soils, dirt and mud from vehicle tires or track surfaces and thoroughly rinsing with clean water. Loose material removed during cleaning will be contained and collected, and, if necessary temporarily stored until placed in excavations or trenches prior to placement of the final cover and grading.

6.2 PPE Decontamination and Disposal

The Safety Officer will determine the necessity for and arrangement of decontamination procedures for personal protective equipment appropriate to this project. Consumable PPE, including disposable coveralls, if required may be discarded as general refuse. If necessary, rinse soil (mud) from soles of work boots and/or overshoes before departing the Regulated work zone and entering vehicles.

Respirator decontamination, if respirators are used, shall comply with procedures in CONTRACTOR's Respiratory Protective Equipment Program and at a minimum include washing with a cleaner recommended by the manufacture followed by a clean water rinse.

7.0 EMERGENCY RESPONSE PROCEDURES

7.1 Physical Injury

In the event of an accident resulting in physical injury, call emergency service personnel immediately and perform first aid commensurate with training and seriousness of the injury. Severely injured personnel are to be transported only by emergency service personnel and/or by ambulance personnel, unless a life-threatening condition is judged to exist that must be addressed immediately.

The Project Manager is to be notified by the Safety Officer, as soon after the injury as practical, regarding the nature of the accident. The Project Manager or designee will prepare a written report within 24 hours of the accident.

7.2 Catastrophic Event

In the event of a catastrophic event (e.g., severe personal injury, fire, explosion, and/or property damage), notify the fire/safety and rescue department immediately by dialing 911.

Any accident involving serious injury will require suspension of site activities until the Project Manager (or designee) has completed a review of the events and site conditions and authorized work to resume.

The Project Manager (or designee) will notify the nearest Cal/OSHA District Office immediately (within 8-hours) by phone or fax upon learning of a death or serious injury:

**Torrance District Office
680 Knox Street, Suite 100
Torrance, California 90502**

**Tel: 310.516.3734
Fax: 310.516.4253**

7.3 Emergency Telephone Numbers

Fire/Police/Medical Assistance: **911**
Poison Control: **800.876.4766**

Other phone numbers may be available or required for emergency response at specific sites. Check with onsite representatives before mobilizing to the job site.

7.4 Project Site Address

Site Location/Address: Pacific Coast Highway (SR 1) between Calle Mayor and Janet Lane,
Torrance, California

7.5 Hospital Address and Route

Hospital Reference: Providence Little Company of Mary Medical Center
4101 Torrance Blvd.
Torrance, California 90503
310.540.7676

Directions: Take Pacific Coast Highway north. Turn right on Calle Mayor. Turn left on Anza Avenue. Proceed 1.4 miles. Turn right on Torrance Blvd. Arrive at the hospital on the left (see Vicinity Map, Figure 1).

SAMPLE

8.0 PLAN APPROVAL

The undersigned has reviewed and approved this Health and Safety Plan prepared for the City of Torrance PCH Improvements Project between Calle Mayor and Janet Lane in Torrance, California, as described herein.

SAMPLE ONLY

(Name), CIH
(Company and Title)
ABIH Certification No. _____, Exp. _____

Date

Project Manager

Date

The following personnel, including subcontractors involved with the project activities have reviewed, or received a copy of this Plan and the CONTRACTOR's Lead Compliance Plan and agree to follow the health and safety procedures described herein.

Print Name	Title	Signature	Date

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Figure 1 – Vicinity Map

SAMPLE