ENVAPPS
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SITE SPECIFIC ENVIRONMENTAL HEALTH AND SAFETY PLAN (HASP)

Inland Empire Utilities Agency Portion of
Former Southern California Edison Etiwanda Generating Station
8998 Etiwanda Avenue
Rancho Cucamonga, California 91739

SCE PURCHASE ODER NUMBER: 4500706118

SCE REPRESENTATIVE: Mr. John Johnsen, REHS

This site-specific HASP establishes requirements, assigns responsibilities, and provides guidelines for worker safety during fieldwork. All work is to be conducted in accordance with the Environmental Applicantions, Inc. (EnvApps) *Safety, Health, and Environmental Manual* (SHEM). This plan will be effective for the duration of the project.

SCOPE OF WORK AND PROJECT SCHEDULE

This scope of work is detailed in the EnvApps proposal to SCE P1705-03 dated June 8, 2017 and the basic scope of work is as follows:

- Advance at least 55 soil borings using a hand auger or Geoprobe drill (DPT) rig to various depths between 5 and 22.5 feet bg
- Install soil gas probes and collect at least 7 soil gas samples (and additional duplicate soil gas samples)
- Collect at least 145 soil samples (and additional duplicate soil samples and field equipment rinseate samples)

The work is to be initiated on or about August 14, 2017 and will require approximately one week to complete. Changes to the HASP may be necessary as the work progresses. Deviation from this plan requires prior approval by the SCE and EnvApps Project Managers (PMs) and the Site Safety Officer (SSO). All onsite personnel must be thoroughly familiar with this HASP.

Jobsite Communications: will maintained for the duration of the field portion of the project by verbal, hand signals, telephonic, or written means as appropriate.

Training Requirements: All field personnel must possess a current California Division of Occupational Safety and Health (CAL/OSHA) 40-hour Hazardous Waste Operator (HAZWOPER) Certificate as per Title 8 CCR Section 5192. HAZWOPER certificates are kept at the corresponding EnvApps and subcontractor office offices.

KEY SAFETY PERSONNEL, ROLES AND RESPONSIBILITIES

Mr. John Johnsen, REHS, SCE Project Manager: Mr. Johnsen maintains authority to make decisions regarding the scope, schedule, budget, and implementation of this project. His responsibilities and authority include, but are not limited to:

- Providing authorization to proceed with this project
- Providing input, review, and approval of reports and correspondence
- Providing final approval of budgets and schedules
- Communicating with the California Department of Toxic Substances Control (DTSC) and other regulatory agencies
- Communicating with EnvApps PM to ensure project quality and consistency

Contact: (626) 462-8721 office, (626) 756-6403 cell, email John.johnsen@sce.com

Mr. Woody Brogdon, PE, EnvApps Project Manager: Mr. Brogdon is responsible for the overall direction, coordination, and scope of the investigation. His responsibilities and authority include, but are not limited to:

- Communicating with the SCE project manager
- Providing review and approval of reports, schedules, and correspondences
- Ensuring availability of key personnel assigned to the project
- Coordinating management, field, and support personnel to ensure consistency of performance
- Supporting the SCE project manager in meetings and communications with DTSC and other regulatory agencies

Contact: (626) 799-4486 office, (626) 688-0631 cell, email woody@envapps.com

Mr. Ed Trosper, P.G., C.E.G., EnvApps Technical Lead and Health and Safety Manager
Mr. Trosper is responsible for the technical development and execution of the investigation, including oversight of the day-to-day management of the field activities and implementing and administering the Corporate Health and Safety Program. His responsibilities include, but are not limited to:

- Develop technical approach for review and approval by SCE and EnvApps project managers, including sampling, analytical, and quality assurance/quality control (QA/QC) procedures
- Scheduling of field activities and project personnel
- Procurement of subcontractors, vendors, and equipment
- Technical review of data, analytical results, and deliverables

- Supervision of field activities
- Performance of field work, including soil boring, lithologic logging, and sample collection.
- Ensure compliance with QA/QC protocols for the field activities
- Review and approval of site-specific Health and Safety Plan for the project
- Coordination and oversight of EnvApps personnel to ensure compliance with Health and Safety guidelines and procedures
- Ensure project personnel have appropriate training and medical clearances to perform required tasks.

Contact: (626) 799-4486 office, (626) 253-0521 cell, email ed@envapps.com

TAILGATE MEETINGS

Daily tailgate meetings attended by all field personnel will be held prior to starting work each day. Topics to be covered include the tasks to be completed that day, procedures for the tasks at hand, and job hazard analyses for those tasks. Each attendee will sign an attendance sheet.

SUBCONTRACTORS

The requirements for all subcontractors to EnvApps are detailed in the Contractor Section starting on page 10 of the EnvApps SHEM. Mr. Trosper or his designee will be the EnvApps' Subcontractor Coordinator, directly supervising the subcontractors during all fieldwork. Subcontractors selected for the project are:

Strongarm Environmental Field Services, Inc. (Strongarm); 13562 Pumice St, Norwalk, CA 90650, (562) 404-6656
All concrete coring, drilling, and soil sampling activities will be performed by Strongarm, a state-licensed drilling subcontractor (California licensed water well drilling contractor C57-766463).

Subcontractors are responsible for designating their own qualified employees to be responsible for project management and implementation of this HASP. Subcontractor managers shall conduct sufficient project oversight to assure that their personnel are working safely. If deficiencies are noted, the subcontractor shall take appropriate corrective and/or disciplinary action. The subcontractor is responsible for ensuring that its employees are properly trained in accordance with all job tasks and procedures.

The successful implementation of this HASP requires the teamwork and cooperation of all personnel. Each worker is expected to use good judgment in the performance of his or her duties in a safe manner. Subcontractors are responsible for ensuring that their workers are responsible for understanding and performing their tasks in accordance with the Workplan and HASP. The work party members shall inform their supervisors of any unforeseen health

and safety hazards, symptoms of exposure, malfunctioning equipment, change in site conditions, and the discovery of any unknown or different class of hazardous materials/waste.

All subcontractor (and EnvApps) field personnel have the authority to stop work when a situation exists that places them, coworkers, other contracted personnel, of the public at risk or danger. Responsibilities and procedures are outlined in the Stop Work Authority Section of the EnvApps SHEM on page 17.

PROJECT HAZARDS

A project specific Job Hazard Assessment was conducted on April 6, 2017 by the SCE and EnvApps Project Managers and the EnvApps Technical Lead and Health and Safety Manager. The hazards identified included subsurface sample collection, operation of a Geoprobe hollow stem auger drill rig; other hazards are also identified below.

Chemical Hazards: The project drilling and sampling activities are potential occupational and environmental hazards by possible exposure to chemicals in the soils sampled. COPCs found to date at the Site include total petroleum hydrocarbons (TPH).

The primary routes of exposure to TPH are via dermal contact and inhalation of vapors and dusts. The use of drilling and sampling equipment may generate contaminated dust and fumes if engineering controls and safe work practices are not being performed. Workers must also use good personal hygiene and be aware of potential exposure via ingestion.

Physical Hazards: The field sampling will involve the use of a DPT drill rig, other vehicles, tools and associated heavy equipment. Physical hazards typical of soil sampling projects include heat illness; slips, trips, and falls; back, hand and foot injuries; and contact with overhead and underground utilities or pressurized piping. The most common injuries with heavy equipment and trucks are amputations, crushing, cuts, bruises, burns, and runovers. Noise exposure could exceed the CAL/OSHA Noise Standard of 85 decibels (dBA) if equipment mufflers and exhaust systems are not functioning properly.

Heat Illness*:* The EnvApp SHEM covers heat illness in the Cal/OSHA Heat Illness Prevention Section starting on page 34. The progressive signs and symptoms of heat illness are as follows:

- Heat Rash: Results from chafing clothes in hot and humid conditions; signs are a red, prickly rash. In addition to being a general nuisance, heat rash reduces further tolerance to heat.
- Heat Cramps: Results from profuse sweating and insufficient replacement of body liquids and electrolytes; signs include muscle cramps in the abdomen and the extremities occurring several hours after work period.
- Heat Exhaustion: Results from increased physiological demands on various organs while attempting to keep body cool under high heat loading conditions; signs include clammy, pale skin, shallow breathing, excessive sweating, dizziness, and weariness.
- Heat Stroke: Results from physiological failure to meet the body's cooling

requirements; signs include cessation of perspiration, red, hot, and dry skin, nausea, dizziness, confusion, strong and rapid pulse, and coma. Person must be physically cooled immediately or severe injury or death may occur.

Under Title 8 CCR Section 3395, the four steps required to prevent heat illness are:

- Train all employees and supervisors about heat illness prevention
- Provide enough fresh water so that each employee can drink at least 1 quart per hour, and encourage them to do so,
- Provide access to shade for at least 5 minutes of rest when an employee believes he or she needs preventative recovery period. They should not wait until they feel sick.
- Develop and implement written procedures for complying with the Cal/OSHA Heat Illness Prevention Standard.

Supervisors will review heat illness during the daily tailgate meetings, stressing the importance of immediately reporting *any* symptoms or signs of heat illness in themselves or in co-workers, and the importance of rest breaks and the frequent consumption of small quantities of water.

The following precautions will be taken to reduce the potential for heat illnesses:

- Replenish body fluids lost through sweating with plenty of water, a 0.1 percent saltwater solution, commercially available sport drinks, and salted foods.
- Reduce high body temperatures through simple water hosing.
- Schedule work to avoid the hottest daytime hours during extremely hot weather.
- Provide adequate nearby shelter so workers have refuge from sun/heat.

Noise*:* Procedures for noise protection is detailed in the EnvApps SHEM starting on page 87. Noise levels within the work area may exceed 85 dBA due to the normal operation of the drill rig. Therefore, all personnel are required to use hearing protection if the sound level exceeds 85 dBA. Excessive noise exposure can cause stress in the form of general lassitude, insomnia, elevated heart rate, hypertension, nervousness, and increased hormonal secretions. Continuous excessive noise exposure can result in temporary and eventually permanent hearing loss in one or more frequencies. Signs for temporary hearing loss include persistent ringing in ears; permanent hearing loss is indicated by the inability to hear sounds of high frequency.

General Safe Work Practices: The contractor is required to provide all PPE and be responsible for the safety of its workers. All general safety guidelines and procedures shall conform to Chapter 8 CCR, Sections 1509, 1514, 5192, 5144, 5194, and to Chapter 29 of the Code of Federal Regulation (CFR) Section 1910.134.

All personnel working at the Site shall adhere to the following general safe work practices:

- A minimum of one copy of this HASP must be at the work Site at all times.
- All persons working on this project shall read and sign the HASP prior to the commencement of work at the Site. The SSO shall hold the master copy (with signature sheet) of the HASP.
- There shall be no smoking, eating, drinking, chewing gum or tobacco, taking medicine, or application of cosmetics in the work areas.

- Hands, face, and all other potentially contaminated areas of the body shall be thoroughly cleaned prior to eating, smoking, or leaving the Site.
- All contractor and subcontractor personnel have stop work authority and shall bring to the attention of the SSO any observed unsafe conditions or practices.
- Site personnel must avoid unnecessary contact with contaminants (i.e., avoid walking through known or suspected contaminated areas, equipment, or containers).
- All onsite personnel who may be required to wear air-purifying respirators (APRs) or supplied air respirators (SARs) must meet the training and medical requirements of Chapter 8 CCR, Sections 5144 and 5192, and Chapter 29 CFR Section 1910.134.
- No personnel shall be allowed onsite without verification of training requirements and without prior knowledge and consent of the SSO and PM.
- All accidents and/or injuries shall be immediately reported to the SSO or PM.
- A daily site tailgate safety meeting shall be held prior starting work to discuss current site conditions, field tasks being performed, protective equipment, plan modifications, and work concerns. A log of attendees shall be kept.
- The removal of contaminants on protective clothing via compressed air or blowing is prohibited at the Site.
- All personnel shall report to the SSO any sign or symptom of work related stresses or exposure to contaminants.
- All containers of hazardous materials or products must be labeled and accompanied with a material safety data sheet as per the Hazardous Communication regulations.

Risk Assessment: The potential occupational exposure to vapors, particulate matter, and dusts generated by the subsurface sampling and handling of impacted materials at the Site is considered a low to moderate risk. However, workers who will be operating sampling equipment to accomplish the required project tasks could potentially be exposed. In EnvApps' judgment, through an evaluation of previous soil test results, expected contaminants, potential routes of entry, physical state, anticipated concentrations, toxicological data, and appropriate regulatory standards, the following mitigation measures will minimize exposure of the workers at the Site:

- The wearing of Level D PPE for the workers engaged in drilling and sampling operation, and
- The availability onsite of a half-face APR equipped with combination organic/high efficiency particulate air filters or SARs to be donned if concentrations of contaminant vapors exceed those specified in the air monitoring section below. Each contractor is responsible for supplying adequate respirator equipment and training for its workers.

Further information on respiratory protection is provided in the *Respiratory Protection* section of the EnvApps SHEM starting on page 93.

Personal Protective Equipment: The primary routes of exposure of contaminants to individuals performing field investigative tasks include direct contact, ingestion, and inhalation. The risk of exposure due to direct contact and ingestion will be minimized through the proper use of PPE as described below and by exercising ordinary caution during sampling activities. In order to minimize exposure by the inhalation pathway, the

respirator and air monitoring programs discussed above will be undertaken.

Based on the nature and concentrations of the identified contamination, work activities are not anticipated to require protection exceeding U.S. EPA Level C. Site conditions which warrant the use of Level A protection have not been so far observed. If the results of personal airborne monitoring indicate that U.S. EPA Level C protection is inadequate, all operations will immediately halt. At this point, an investigation will be conducted by the SSO or PM to identify and assess changes in conditions. Decision regarding the upgrading or downgrading of PPE will be based on site conditions, nature of task, and air monitoring results. The decision will be made between the SSO, PM, and Industrial Hygienist (if required).

All personnel entering the Site are required to wear Level D Protection, consisting of:

- Steel-toed boots.
- Protective gloves.
- Hard hats (unaltered in any way and properly worn).
- Eye protection (safety glasses or goggles).
- Hearing protection (earplugs or muffs).

Further information on PPE is provided in the *PPE* section of the EnvApps SHEM starting on page 89.

Airborne Monitoring: Airborne exposure monitoring will be implemented to evaluate breathing zone concentrations of VOCs at the Site, and assist in the selection and use of appropriate PPE and control measures to limit their exposure.

Prior to arriving at the Site, all personnel will have received training in the use of and have been fit tested for a half-face APR and SARs. Companies employing individuals required to perform intrusive work at the Site shall have a written respiratory program that complies with 29 CFR 1910.134.

During intrusive activities, a PID will be used to determine if organic vapors are present in the breathing zone. A background reading will be established prior to commencing activities at each work location. To evaluate potential breathing hazards, benzene has been chosen although no benzene has been reported in samples from the Site. When PID readings are encountered above the benzene short-term exposure limit (STEL) of 5 ppm for more than 5 consecutive minutes, the work area will be continued to be monitored, and protection levels instituted according to the following table:

AIR MONITORING	
Sustained PID Reading in Breathing Zone Above Background	*Protection Level*
0 - 5 ppm	Level D
5 -125 ppm	Level C
>125 ppm	Shut down activities until the appropriate respiratory protection equipment (Level B) can be provided and a contingency plan can be developed. Air monitoring will continue, at a safe distance, to determine if a threat to the surrounding community exists.

Any changes to the protection level will be communicated by the SSO to all members of the work party prior to continuation of the work.

The justification for the 125 ppm value assumes that all National Institute for Occupational Safety and Health criteria for using an APR have been met. An APR can typically be worn in concentrations of up to 50 times the STEL for a given compound. Due to the sensitivity of direct reading instruments such as PIDs, a 50 percent safety factor is included. Therefore, the calculation to determine when an APR could no longer be used is:

5 ppm (Benzene STEL) x 50 (protection factor) x 0.5 (50% safety factor) = 125 ppm

Drill Rig Operations: All drilling operations will be monitored for the presence of vapor phase VOCs as stated in the air monitoring section of this plan.

Potential hazards associated with drill rig operations include electrical hazards such as overhead power lines and underground utilities, rolling, or sliding tools and supplies, and hydraulically driven machinery. All utilities shall be marked and no drilling will be allowed within 15 feet of overhead high-voltage electrical hazards. The drilling subcontractor will adhere to the following safety provisions:

- Prior to drilling, USA shall be notified as per CAL-OSHA regulations in advance of the commencement of work. A geophysical survey will have previously been conducted using a magnetometer and a metal locator to clear boring locations of subsurface obstructions.
- A hand auger, post hole digger, or other digging equipment will be used to clear each boring to a depth of approximately 5 feet bg and to the diameter of the auger to check for the presence of underground utilities and piping.
- Prior to drilling in the vicinity of electrical power lines, the operator shall walk completely around the rig to determine the distance of the rig to the nearest power line when the drilling mast is raised (this distance should be equal to or greater than 15 feet). Any questions regarding the appropriateness of a location shall be brought to the attention of the EnvApps' PM and/or the SSO.
- Suitable storage for tools, materials, and supplies will be provided. Pipes, casings, rods, and similar tools will be secured to prevent rolling, or sliding by using blocks.
- Work areas will be kept free of materials, obstructions, and substances that could cause a surface to become slick or otherwise hazardous.
- The drilling subcontractor is responsible for establishing safe procedures associated

with all drilling procedures.
- Unattended boreholes must be properly covered or otherwise protected.

Dust Control, Sanitation, and Illumination: Dust emissions shall be controlled to comply with the South Coast Air Quality Management District regulations. Dust control shall also be performed to limit worker and community site contaminant exposure. Dust control shall be performed by spraying material with water.

SCE will be responsible for providing adequate sanitation facilities at the Site or nearby. There must be sufficient facilities for the amount and sex of the worker. Any required night work shall be provided with adequate lighting. A minimum of five foot-candles is required in the area of operation.

Documentation: The following documentation will be generated prior to, and during field activities. These records will be kept onsite for review by applicable regulatory agencies:
- Site Specific Health and Safety Plan (this HASP)
- PID logs
- Injury Records

Emergency Action Plan: Implementation of field work presents the potential for unexpected emergencies that may affect worker safety and health. To mitigate the effects of these occurrences, all workers at the Site shall follow this Emergency Plan and all other aspects of the HASP.

In the event of an emergency, the SSO will immediately advise the PM. The PM will notify the proper authorities and the Site owner representative of the emergency and determine if an evacuation is required. Workers will be directed to remove injured personnel from the Site. If a worker requires CPR or First Aid, the SSO or other appropriate person will be responsible for assisting this individual. If the individual can be transported without exacerbating the injury, he/she will be transported to the local hospital. Should the injury be of a more serious nature, paramedics and/or ambulance service will be requested to transport the worker to the nearest emergency hospital. Should it not be possible to remove a worker due to the nature of his/her injury, emergency personnel such as paramedics shall be offered PPE, if necessary.

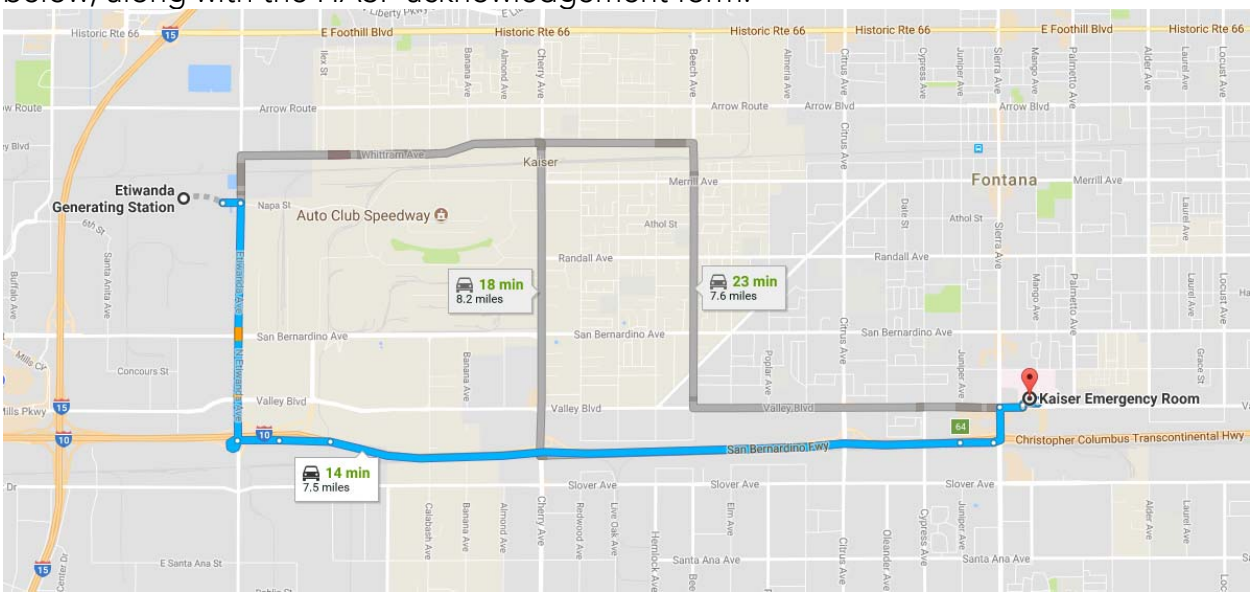
To avoid complications or refusal of admission to the local hospital, injured workers shall have his/her personal protective clothing and equipment removed prior to transportation to the hospital, if possible. If the worker is unconscious or is seriously injured, life-threatening first aid shall be administered first.

In the event of an emergency, the roles of the various personnel are as follows:
- SSO: Notifies PM of situation and stops work if any operation threatens workers or public safety. Knows emergency procedures, the appropriate evacuation routes, telephone numbers, etc.
- PM: Notifies SCE, IUEA, or IEUA who will then contact local authorities such as fire, police, paramedics, ambulance, etc., that an emergency has occurred. The PM will coordinate response action.

Emergency equipment to be kept onsite includes at least one ABC Type fire extinguisher, eye wash, and an industrial first aid kit.

Safety Orientation and Work Authorization Protocols: Before commencing work each day, the PM or SSO must check in with facility gate for access to the IEUA property. At the end of the day, the PM or SSO must check out with the facility gate. SCE and IEUA representative will be notified at the end of the day as to the work completed and whether they will be returning the next day.

EMERGENCY ACTION PLAN: Kaiser Hospital, 9961 Sierra Avenue, Fontana, California, (909-427-5000) is the closest hospital with an emergency room. The route to it is shown below, along with the HASP acknowledgement form.



HASP ACKNOWLEDGEMENT FORM

Prior to initiation of site work activities, all employees and subcontractors are required to acknowledge by signing below they have read and understand the HASP.

Signature	Printed Name	Date
Signature	Printed Name	Date
Signature	Printed Name	Date
Signature	Printed Name	Date
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