

# Appendix B

## Health and Safety Plan

*Health and Safety Plan*  
Ebenezer Plaza 1  
Brownfield Cleanup Program  
NYSDEC Site No. C224240

94 New Lots Avenue  
Brooklyn  
Kings County, New York

February 2017



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## **1.0 INTRODUCTION AND OBJECTIVES**

The Chazen Companies (Chazen) have prepared this Health and Safety Plan (HASP) for employees of Chazen for the Ebenezer Plaza Brownfields Cleanup (BCP) Program Site (herein after referred to as the EP1 Site) located in Brooklyn, Kings County, New York. This HASP is applicable to the Remedial Action Work Plan (RAWP) and has been prepared to specifically address potential hazards associated with the proposed scope of work.

The activities, equipment, and procedures described in this plan are designed to provide personal protection against potential environmental hazards which may be present on the work site. This plan includes delineation of site characteristics; establishes an emergency chain-of-command; details the use of basic safety equipment, personal protective equipment, and air monitoring devices, and describes equipment decontamination procedures.

The objectives of this HASP are to:

- Review the physical, chemical, and biological hazards which may be present during the proposed site investigative activities
- Specify the protective measures necessary to control those hazards
- Define emergency procedures.
- Specify training and medical qualification criteria for personnel.

This HASP must be read and understood by all Chazen personnel who perform field activities at the EP1 Site.

## **2.0 PROJECT PERSONNEL & EMERGENCY RESPONSE CONTACTS**

The personnel and emergency response contacts associated with the proposed scope of work at the site are presented below.

**DIAL 911 FOR EMERGENCY IN WESTCHESTER COUNTY**

<b>Title/Project Responsibility</b>	<b>Name</b>	<b>Main Phone</b>	<b>Mobile/Other Phone</b>
<b>Project Personnel</b>			
Project Manager	Kevin McGrath	518-266-7370	518-527-7165
Field Operations Leader and on-site Health & Safety Representative	William Olsen	845-486-1521	845-532-0602
	Eric Orłowski	845-486-1520	518-928-5823
Health & Safety Officer	Kip Score	518-226-0300	518-281-6358
<b>EP1 Site Emergency Contact</b>	<b>Peter Procida</b>	-----	-----
<b>Emergency Personnel – DIAL 911 In Kings County</b>			
<b>Hospital</b> Brookdale University Hospital and Medical Center One Brookdale Plaza Brooklyn, New York (Hospital Route Map Attached On Next Page)		<b>Emergency-Dial 911</b>	(718) 240-5000 non-emergency
New York City Fire Department		Dial 911	
New York City Police Department		Dial 911	
NYSDEC Spills Hotline		(800) 457-7362	
NYSDEC Regional Office		(718) 482-4900	
Poison Control Center		(800) 222-1222	
National Response Center		(800) 424-8802	

**2.1 Hospital Route**

Brookdale University Hospital is located approximately 1.1 miles from the EP1 Site. The travel time from the EP1 Site to Brookdale University Hospital is approximately four minutes. Directions are provided below and a route plan map is shown on the following page.

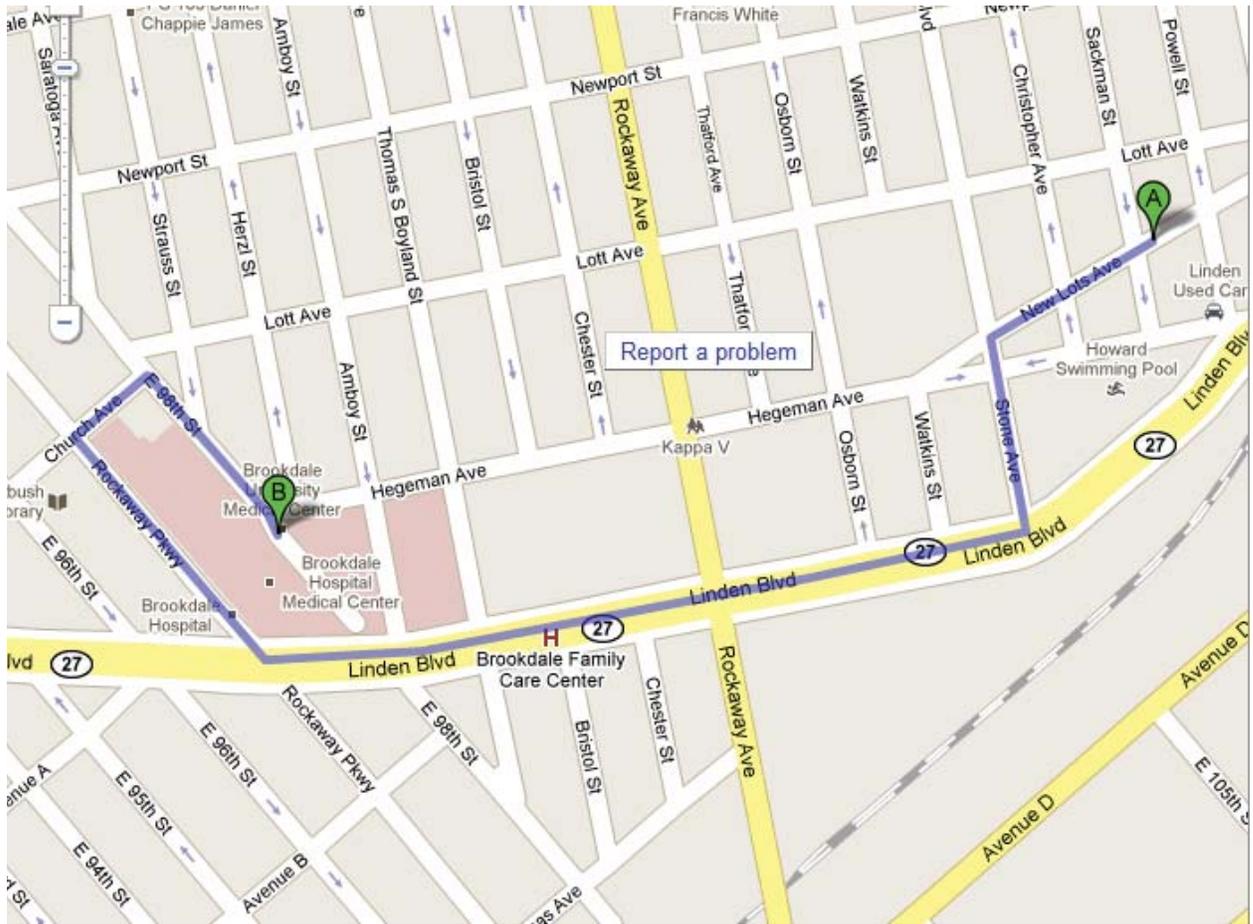
Directions to Brookvale University Hospital:

1.	Head southwest on New Lots Avenue toward Sackman Street	0.1 miles
2.	Turn LEFT at the 3 <sup>rd</sup> cross street onto Mother Gaston Blvd/Stone Avenue.	0.1 miles
3.	Turn RIGHT onto Linden Blvd.	0.5 miles
4.	Turn RIGHT at Rockaway Pkwy.	0.2 miles
5.	Take 1 <sup>st</sup> RIGHT onto Church Avenue.	318 feet
6.	Turn RIGHT at E 98 <sup>th</sup> Street. Hospital will be on right hand side.	0.1 miles

Total estimated time = 4 minutes

1.1 miles

### 1. Hospital Route Map



### 3.0 SITE CHARACTERIZATION

#### 3.1 Site Location & Description

The EP1 Site is a 1.26-acre occupied property situated between New Lots Avenue, Sackman Street, Powell Street, and Hegeman Avenue in Brooklyn, Kings County, New York. The Site is currently zoned M1-1: Manufacturing District. The intended future use is mixed-use commercial/residential with a church with retail space at grade and high-rise multi-family affordable housing units above. The site will be rezoned to be consistent with the intended use.

The Site is located in a dense urban area with highly diverse uses. North of New Lots Avenue is a community garden, residences; East of Powel Street is a commercial plaza, Burger King, and the Long Island Railroad right of way with tracks, South of Hegeman Avenue, is a community center and recreation park beyond which is, a rail yard, nursing home, and commercial warehouses; and, west of Sackman Street is the Ebenezer Plaza 2-BCP Site C224241.

Remedial action activities under the BCP will occur after the site buildings have been demolished/removed.

#### 3.2 Historic Site Uses

Former Site uses included used car sales, auto repair, auto wrecking, dry cleaning, a coal and coke distribution business, and a gasoline filling station. Historic mapping indicates vehicle repair garages on Site as early as 1928, with a dry cleaner and gasoline filling station on the eastern site area prior to 1980.

#### 3.3 Proposed Project Scope/Site Investigation Activities

The investigative activities proposed at the site include the following:

- Drilling with Geoprobe rig, and sampling,
- Soil sample screening with PID and XRF spectrometer, and
- Soil sample collection.

### 4.0 SITE HAZARD EVALUATION AND CONTROL

The potential for exposure to chemical, physical, and mechanical hazards at the EP1 Site is considered to be moderate. Hazards which may be encountered at the EP1 Site are summarized in Table 1. Additional information pertaining to these hazards is provided in later sections of this HASP.

**Table 1: Potential Hazards at the Site**

Hazard Type	Hazard Anticipated	Associated Investigative Activities	Comments	Hazard Control Methods
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<b>Chemical</b>	Chemicals of Concern (COCs) in Soil including VOCs and Metals	Drilling with Geoprobe <sup>®</sup> , installation of soil borings, soil excavation, soil sample collection, XRF screening, PID headspace screening	Considered minimal	PPE, Training on Identification of COCs Safety Training & Standard Safety Operations
<b>Physical</b>	Slip, Trip & Fall, Heavy machinery	Any site work	Construction and Industrial equipment, irregular surfaces	Safety Training & Standard Safety Operations
<b>Biological</b>	Tick, insect bites, poisonous plants, heat/cold-related disorders	Any site work	Considered minimal	Safety Training & Standard Safety Operations
<b>Electrical</b>	Working around utilities	Drilling, soil sample collection	Considered minimal to moderate	Utility Mark Out in planned boring locations, Safety Training & Standard Safety Operations

## 4.1 Hazard Evaluation

### 4.1.1 Chemical Hazards

Based on available historical information, the primary chemicals of concern (COCs) present in the proposed EP1 Site work areas include VOCs and lead.

Table 2 lists the potential health hazards that may be encountered where these may be encountered in the breathing zone and recommended exposure limits, as well as assessment of all primary exposure routes.

**Table 2: COCs & Established Permissible Airborne Exposure Limits**

COC	Time Weighted Average Airborne Limits			Short-Term Exposure Limit (ppm)	IDLH (ppm)	Primary Routes Of Exposure On Site
	OSHA PEL	NIOSH REL	ACGIH TLV			
Lead	0.05	0.05	0.05	Not Listed	100 <sup>Ca</sup>	Inhalation, Dermal
PCE, TCE (VOCs)	100	minimize	na	200	150 <sup>Ca</sup>	Inhalation
Benzene (VOC)	1.0	0.1	0.5	5.0 (1.0 NIOSH)	500 <sup>Ca</sup>	Inhalation
Ethylbenzene (VOC)	100	100	100	125	800	Inhalation
Toluene (VOC)	200	100	50	150	500	Inhalation
Xylenes (VOC)	100	100	100	150	900	Inhalation

1. Some of the most common VOCs are listed above. A conservative permissible exposure limit of 5 ppm for VOCs will be used in the field as measured continuously using a portable photoionization detector (PID)
2. Air concentrations listed in <http://www.cdc.gov/niosh/npg/npgd0368.html>, accessed August 14, 2009.

Ca: NIOSH has identified the compounds as a potential occupational carcinogen

C: Ceiling value. Typically a 15-minute TWA that must not be exceeded at any point during the workday

IDLH: Immediately Dangerous to Life & Health

Skin designation indicates the potential for dermal absorption

OSHA PELs are legally enforceable.

RELs and TLVs are published as recommended guidelines

COCs present on the subject property are expected to vary based on location (e.g., source area, soil stockpiles, etc.).

Project investigation activities will involve potential exposure to soil and groundwater. Given the nature of the proposed project activities, the potential for site personnel to encounter the LSS Site COCs during performance of the activities outlined in the Work Plan is considered to be minimal as specified PPE and air monitoring (described later in this plan) will be utilized.

Symptoms of exposure to the COCs are summarized in Table 3.

**Table 3: General Signs and Symptoms of Exposure to COCs**

Compound	Signs & Symptoms of Exposure
PCE, TCE	Irritation to eyes, skin, and lungs; central nervous system depressant.
Petroleum Hydrocarbons (including SVOCs)	Irritation to eyes, skin, nose, respiratory system; headache, nausea, staggered gait; fatigue, anorexia, lassitude (weakness, exhaustion); dermatitis
Lead	Pain, muscle weakness, abdominal pain, nausea, vomiting, diarrhea, constipation, a metallic taste.
VOCs (general)	Irritation eyes, skin, nose, respiratory system; headache, nausea; fatigue, anorexia

#### 4.1.2 Physical Hazards

Site work which occurs in the vicinity of drilling and/or excavating equipment and machinery presents a general safety hazard. Uneven ground surfaces and the presence of debris on the site presents a concern for slip, trip, and fall incidents.

The potential for heat-related stress during site work exists. Heat stress may occur even in moderate temperatures and may present any or all of the following symptoms:

**Heat Rash** – Result of continuous exposure to hot humid air and chafing clothes. Heat rash is uncomfortable and decreases the ability to tolerate heat.

**Heat Cramps** – Result of the inadequate replacement of body electrolytes lost through perspiration. Sign include severe spasms and pain in the extremities and abdomen.

**Heat Exhaustion** – Result of the increased stress on the vital organs of the body in the effort to meet the body’s cooling demands. Signs include shallow breathing, pale, cool, moist skin, profuse sweating, dizziness, and listlessness.

**Heat Stroke** – Result of overworked cooling system. Heat stroke is the most serious form of heat stress. Body surfaces must be cooled and medical help must be obtained immediately to prevent severe injury and/or death. Signs of heat stroke include red, hot, dry skin, absence of perspiration, nausea, dizziness, confusion and strong rapid pulse. Coma and death can result from heat stroke.

The following any or a combination of the following actions can be taken to prevent heat stress:

- Replace body fluids (water and electrolytes) lost through perspiration. Solutions may include a 0.1% salt and water solution or commercial mixes such as Gatorade and Squench. A fluid/electrolyte replacement will be used as necessary to minimize fluid loss.
- Provide cooling devices to aid in the natural body ventilation. Cooling occurs through evaporation of perspiration and limited body contact with heat absorbing protective clothing. Fans and air conditioners can assist in evaporation.
- Provide hose-down mobile shower facilities, where feasible, to cool protective clothing and reduce body temperature.
- Conduct activities early in the morning or evening during very hot weather.
- Provide shelter against heat and direct sunlight to protect personnel.

The potential for cold stress during site work exists. Working outside in cold temperatures presents a concern for cold-related disorders as described below:

**Hypothermia** – Symptoms of hypothermia include shivering, slurred speech, disorientation, and loss of coordination. Advance stages of hypothermia include feelings of warmth and reckless behavior.

**Frost Bite** – Symptoms of frostbite include cold feelings, red color to the skin, tingling, swelling, and pain. In advanced stated of frostbite, the skin will appear white in color.

To avoid cold stress, take the following precautions:

- Provide a shelter area where warmth is available.
- Wear thermal clothing applied in layers.
- Remain active in order to maintain blood circulation throughout the body.
- Maintain warm/hot drinks in the support zone.

Physical hazards are anticipated to be a concern for all site activities.

#### 4.1.3 Biological Hazards

It is anticipated that the site field work will be performed in the fall, winter and spring months which presents some potential for biological hazards to be present. Biological hazards include poison ivy, snakes, ticks, mosquitoes, and other pests. Given the developed nature of the site, biological hazards are expected to be low, but may still be present during site activities.

##### 4.1.3.1 Tick-Borne Disease

Ticks can carry a number of diseases. In the United States, these diseases include:

- Lyme Disease
- Ehrlichiosis

- Rocky Mountain Spotted Fever (throughout the United States but most prevalent in the east)

*Lyme Disease* - The disease commonly occurs in New York State in the spring and summer and is transmitted during extended attachment (minimum 24 hours) of an infected tick. Symptoms of Lyme disease usually emerge approximately two weeks after exposure and may include a rash or a peculiar red spot, like a bull's eye, which expands outward in a circular manner. The victim may have recurring headaches, weakness, a stiff neck, swelling and pain in the joints, and eventually, arthritis.

*Ehrlichiosis* - The disease also commonly occurs in New York State in the summer and is similarly transmitted by the bite of infected ticks. Symptoms of ehrlichiosis include more immediate muscle aches, fever, joint aches, and flu-like symptoms, but there is typically no skin rash.

*Rocky Mountain Spotted Fever (RMSF)* - This disease is also transmitted via the extended bite of an infected tick. The tick must be attached 4 to 6 hours before the disease-causing organism (*Rickettsia rickettsii*) becomes reactivated and can infect humans. The primary symptom of RMSF is the sudden appearance of a moderate-to-high fever. The fever may persist for 2 to 3 weeks. The victim may also have a headache, deep muscle pain, and chills. A rash appears on the hands and feet on about the third day and eventually spreads to all parts of the body. For this reason, RMSF may be confused with measles or meningitis. The disease may cause death, if untreated.

#### 4.1.3.2 Other Biological Hazards

Poisonous plants, such as poison ivy and sumac, maybe present on the site and present a hazard for site personnel. Signs and symptoms of exposure to such poisonous plants include itching, burning, redness, rash, blistering and swelling.

Snakes may be present on the site property and present the potential for snake bites. Poisonous snakes are not expected to be present on the site, however, even bites from non-poisonous snakes can cause adverse health symptoms such as redness, swelling, and allergic reaction.

Site personnel may be exposed to mosquitoes and/or black flies during site work. While the presence of mosquitoes and/or black flies is not anticipated to be a significant health and safety concern, bites can cause adverse health symptoms such as redness, swelling, and allergic reaction.

#### 4.1.4 Electrical Hazards

Drill rigs will be used on the site to install soil borings. The presence of overhead utilities and underground obstacles poses a hazard if equipment contacts them. As indicated in Table 1, electrical hazards are considered to be a concern for the installation of borings on the site.

#### 4.1.5 Radiological Hazards

A handheld x-ray fluorescence (XRF) spectrometer will be used to field screen lead content in soil. The Niton Model XL2 GOLDD XRF will be rented by Chazen and maintained by the rental company, EcoRental Solutions. Chazen personnel who operate the XRF have had training in the equipment operation and its safety procedures.

The Niton Model XL2 analyzer contains an x-ray tube which emits radiation only when the user turns the x-ray tube on. When the x-ray tube is on and the shutter is open, as during a measurement, the analyzer emits a directed radiation beam. Reasonable effort will be made to maintain exposures to radiation as far below dose limits as is practical. This is known as the ALARA (As Low as Reasonably Achievable) principle. For any given source of radiation, three factors will help minimize radiation exposure: shorter time, greater distance, and increased shielding. Specific precautions include:

- Avoid holding the front of the analyzer when the x-ray tube is energized and the shutter is open. Never point the instrument at yourself or anyone else when the shutter is open and the x-ray tube is energized. Never look into the path of the primary beam.
- Ensure sample sizes are larger than the XRF's measurement window.
- There are no X-ray tube specific US Department of Transportation (DOT) or International Air Transport Association (IATA) radiation regulations regarding shipping the Niton XL2 analyzer. It is recommended that the analyzer be shipped in its carrying case and an over-pack to protect the sensitive measuring equipment inside the analyzer. The battery pack is disconnected from the analyzer prior to shipment.
- The XRF is secured when not in use.

## 4.2 Hazard Control

### 4.2.1 Hazards Associated With Soil Sampling

Soil sampling consists of the installation of soil borings using a hydraulic, direct-push drilling rig or hollow stem auger rig and the collection of soil samples from the soil borings for analysis. The hazards associated with the collection of soil samples are considered to be minimal and include dermal exposure to soil contaminants, inhalation exposure to contaminants, and slip, trip, and fall hazards from scattered debris and irregular walking surfaces.

All drillers must possess required state or local licenses. The driller is responsible for the safe operation of the drill rig. The driller is responsible for providing and following his own HASP, which must be reviewed and approved by Chazen. The driller is responsible for ensuring that the drill rig is in proper condition and is properly used. Rig conditions will be evaluated daily prior to the start of work.

Prior to any subsurface sampling or remedial activities, underground utilities must be located using facility plans and the Dig Safely NY Program (1-800-962-7962). In addition, a utility markout of the planned boring areas is planned. These protective measures will be taken to minimize the potential health and safety risks associated with investigation activities near underground utility lines.

If drilling activities are conducted in the vicinity of overhead power lines, the rig should be positioned such that no part of the drilling rig is within OSHA's maximum clearance values, which are provided in the following table:

Nominal AC Line Voltage (kV)	Minimum Clearance Distance (feet)
Up to 50	10
51 to 200	15

201 to 350	20
351 to 500	25
501 to 750	35
751 to 1,000	45
Over 1,000	Per Utility Owner

To control dermal exposure during soil sampling activities, a minimum of Modified Level D PPE should be worn as described in Section 6.0 of this HASP.

The potential for inhalation exposure to airborne COCs will be evaluated and controlled during site activities as a general safety precaution.

Air monitoring will be performed during site work to evaluate airborne concentrations of VOCs and particulates to which site workers may be exposed. Air monitoring control measures are discussed in Section 6.0 of this HASP. A Community Air Monitoring Program (CAMP) is also required for this site, although the CAMP does not address site health and safety.

General safety precautions will be employed on-site to control for slip, trip, and fall hazards.

#### 4.2.5.1 Biological Hazards

##### Ticks

The best way to prevent tick borne diseases is to avoid tick bites. Preventative measures to reduce the potential for tick bites include, but are not limited to, the following:

- Where possible, land scheduled for eventual clearing should be cleared of brush and overgrown vegetation in advance of environmental investigation.
- Wearing long pants and long sleeved shirts
- Tucking shirts into pants. Tucking pants into socks or boots, or using tape to close the opening where they meet.
- Using an EPA approved insect repellent or arachnicide (pesticide) which is effective for ticks, such as DEET (N,N-diethyl-m-toluamide) or pyrethrin. Be sure to heed all precautionary information, and be aware that some people are sensitive to these chemicals.
- Wearing light colored clothing so that a tick can be seen more easily.
- Changing clothes when you return from an area where ticks may be located.
- Showering to wash off any loose ticks, followed by self-examination for ticks.
- Throughout the work day, perform Tick Checks and Removal Procedures as follows:
  - Check clothing for ticks. If you find a tick, do a more thorough tick check.

- Inspect parts that bend (back of knee, between fingers and toes, underarms), pressure points where clothing presses against skin (underwear elastic, belts, neck); other common areas (belly button, around or in ear, hairline, and top of head).
- Once indoors, do a final tick check and change clothes.
- If you are in a tick infested area or an area known to have disease carrying ticks, perform checks on a more regular basis
- Remove unattached ticks promptly.
- Remove attached ticks are removed using fine pointed tweezers:
  1. The mouth parts of the tick are grasped with the tweezers as close to the skin as possible
  2. Apply firm steady pressure upward until the tick releases - do not jerk, twist, squash or squeeze the tick
  3. Clean the wound and the tweezers with an antiseptic

Do not use petroleum jelly, nail polish remover, or prick or burn the tick. These actions can cause infected secretions to enter the wound.

### Plants

Preventative measures will be implemented to avoid contact with poisonous plants on the site property. These measures will include, but are not limited to, the following activities:

- Wear clothing that covers arms and hands if possible
- Frequently wash exposed skin
- Avoid skin contact with objects or protective clothing that have touched the plants
- Treat every surface that may have touched the plant as contaminated, and practice contamination avoidance
- If skin contact is made, the area should be washed immediately with soap and water and observed for signs of reddening.

### Snakes

All personnel walking through vegetated areas must be aware of the potential for encountering snakes. If a snake bite occurs, apply a constriction band and wash the area around the wound to remove any unabsorbed venom.

#### 4.2.5.2 Heat Stress

When feasible, the most stressful site activities should be performed during the coolest parts of the day. Site workers will be instructed to stay hydrated throughout the day. An intake of 5 to 7 ounces of fluids every 15 to 20 minutes is recommended.

Site workers will be monitored for the signs and symptoms of heat stress during work activities. The signs and symptoms of heat stress are dizziness, vomiting, hot, dry skin, rapid heartbeat, throbbing headache, rash, cramps, chest pain, muscle spasms, pain in the hands, feet, or abdomen, loss of coordination, and decreased cognitive ability.

Site workers expressing or demonstrating any of these symptoms will be immediately excused of their duties and instructed to rest in a cool environment. Site work/rest cycles will be determined based on ambient conditions and based on guidance pertaining to heat stress provided by OSHA and NIOSH.

#### 4.2.6 General Health and Safety Controls

##### 4.2.6.1 Communications System

Telephones will be available on site and both on-site and off-site project personnel will be accessible for communication. If there is a lack of cell phone signal at the site, then personnel should locate the closest public payphone prior to work commencement. Personnel should also be trained in the use of standard hand signals for health and safety. Personnel in the work zone will use the following standard hand signals:

- Hand gripping throat ----- Can't breathe
- Grip partner's wrist or both hands around waist ----- Leave area immediately
- Hands on top of head ----- Need assistance
- Thumbs up ----- OK, I am all right, I understand
- Thumbs down ----- No, negative

##### 4.2.6.2 Basic Safety Equipment

Safety equipment will be kept on site for monitoring and responding to emergency situations. Basic safety equipment will include, but is not limited to, the following:

- ABC type fire extinguishers
- First Aid kits
- Air Monitoring Equipment (for particulates and VOCs)
- Reference books containing basic first-aid procedures and information

#### 4.2.6.3 Safe Work Practices

All Chazen personnel and all subcontractors working on site are expected to follow established safe work practices for their specialties (i.e., excavators, surveying, etc.). The need to exercise caution in the performance of specific work tasks is frequently made more acute due to:

- Weather conditions
- Restricted mobility and reduced peripheral vision caused by protective gear
- The need to maintain the integrity of the protective equipment

Work at the LSS Site will be conducted in accordance with established protocols and guidelines for the safety and health of all involved. General safety practices employed at the LSS Site will include but are not limited to the following:

- No smoking, eating, or drinking in an exclusion zone or before personnel decontamination. Ingestion of contaminants is the second most likely means of introducing toxic substances into the body.
- In any unknown situation, always assume the worst conditions and plan responses accordingly.
- Personal protective equipment is never 100% effective, so all personnel must minimize contact with potentially contaminated material. Do not place equipment on potentially contaminated ground. Do not sit or kneel on potentially contaminated material. Avoid standing in or walking through puddles or stained soil.
- Avoid heat and other work stresses related to the wearing of protective equipment and clothing. Work breaks should be scheduled (*and actually taken*) to prevent stress-related accidents or fatigue.
- As often as possible, the handling of contaminated materials should be done remotely. Every effort should be made to identify the contents of containers found on-site before they are handled.
- Personnel must be observant of not only their own immediate surroundings, but also of others.
- 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. Avoid field work while feeling ill. Company policies prohibit use of alcohol while working.

The site Health and Safety Officer or their designee will maintain project Health and Safety records in a safe and secure manner. Since there is no on-site location to maintain the Health and Safety records, they will be retained in Chazen's Poughkeepsie office.

## 5.0 PERSONAL PROTECTIVE EQUIPMENT

Site workers will be provided with the appropriate personal protective equipment (PPE) and will be trained on the use of this equipment. PPE will be selected to provide an appropriate level of protection against known and reasonably anticipated site hazards. Given the available data, the level of PPE selected for the EP1 Site is a modified Level D which will include the items listed in Table 4.

**Table 4: Site-Specific PPE Components**

Area	PPE Item
Head	Hard Hat (OSHA approved)
Feet	Work Boots (steel-toed, unless conducting electromagnetic survey)
Skin	Nitrile Gloves
Hearing	Ear Plugs/Hearing Protection
Vision	Safety Glasses

The level of PPE should be continually evaluated and will be modified as necessary, depending on site conditions. If upgraded PPE appears necessary, the scope and necessity of work must be examined, and if the exposure cannot be avoided the level of PPE must be upgraded to one of, or a combination of the following levels:

### **Level C protection consists of:**

- (a) Full-face air-purifying respirator
- (b) Tyvek or Poly-tyvek coveralls
- (c) Chemical-resistant gloves taped to coveralls
- (d) Chemical-resistant boots taped to coveralls

### **Level B protection consists of:**

- (a) Level C protection for the body, plus
- (b) Positive pressure Self-contained Breathing Apparatus (SCBA) or a tethered cascade breathing system.

It will be the responsibility of the Health and Safety Officer to insure that all personnel and subcontractors are knowledgeable of the level of personal protection required in all work situations. Further, it is the obligation of the Health and Safety Officer to see that proper equipment is worn and work rules are observed. All subcontractors are responsible for supplying their personnel with the necessary equipment.

## **6.0 AIR MONITORING**

Air monitoring for volatile organic compounds and particulates will be periodically performed in the work area breathing zone during outdoor site activities. Monitoring will be performed with a hand-held PID and particulate meter. Results will be compared to exposure values listed in Table 2 and appropriate responsive action taken, as needed, including moving to upwind locations, reducing scale or pace of work advance, or adjustments of PPE.

Periodic air monitoring will also be conducted as described in the CAMP, to document ambient concentrations of particulates and VOCs at the downwind perimeter of the work zone and at an upwind location.

## **7.0 TRAINING & MEDICAL SURVEILLANCE**

### **7.1 Personnel Safety Training**

As part of Chazen policies and in conformance with OSHA requirements for personnel conducting hazardous waste investigation, or assessments on site where they may be exposed to hazardous wastes, Chazen field personnel working on this site shall have received a minimum of 40 hours of comprehensive health and safety training (29 CFR 1910.120) and an annual 8 hour refresher course.

All workers must recognize and understand the potential hazards to health and safety that are associated with the investigation activities and must be thoroughly familiar with programs and procedures contained in the safety plan.

The objectives of Chazen training program, for employees involved in hazardous site activities are:

- To make workers aware of the potential hazards they may encounter.
- To provide the knowledge and skills necessary to perform the work with minimal risk to the health and safety of the workers.
- To make workers aware of the purpose and limitations of safety equipment.
- To ensure that workers can safely avoid or escape from emergencies.

### **7.2 Medical Surveillance**

All Chazen personnel meeting applicable exposure criteria are currently involved in a medical monitoring program, in accordance with 29 CFR 1910.120.

Based on the proposed scope of work, the potential for exposure to site COCs is considered to be negligible following the health and safety procedure described herein. Medical monitoring for common COCs is performed as part of the existing Chazen medical monitoring program. Any provisions for alterations to the existing medical surveillance program will be made by the Health & Safety Officer based on the site characterization and job hazard analysis.

## **8.0 WORKING ZONE**

The entire EP1 site is considered the work zone. The EP1 Site investigation work is not expected to be hazardous or to necessitate the establishment of Exclusion, Contamination Reduction, or Support Zones; however, the following sections are provided, should these zones be needed.

### **8.1 Exclusion Zone**

An Exclusion Zone will be established around areas where work activities will occur. The Exclusion Zone will be cordoned off while work is in progress. Entry to and exit from this area will be provided only to those persons directly involved in the work activities and only if the prescribed level of personal protection is worn.

The personnel working in the Exclusion Zone will be the health and safety officer, work crews, and specialized personnel. All personnel within the Exclusion Zone must wear the level of protection required by the site safety plan. All personnel in the Exclusion Zone will be HAZWOPER health and safety trained.

### **8.2 Contamination Reduction Zone**

If needed, a Contamination Reduction Zone (CRZ) will be established at the perimeter of the exclusion zone, where personal decontamination will take place. The CRZ is a transition zone between contaminated and uncontaminated areas of the site.

When personnel, equipment, or materials suspected to be contaminated are taken out of the exclusion zone, they will be properly contained, or decontaminated in the CRZ.

### **8.3 Support Zone**

The Support Zone is considered the area outside the CRZ. The Support Zone will be reserved for the support vehicle and for clean equipment storage. It is separated from the CRZ, and is considered a "Clean" area. Only uncontaminated or decontaminated personnel or materials may enter this zone from the CRZ.

The support vehicle serves as the communications center, clean storage area, and source of emergency assistance for field operations. Certain safety equipment (i.e. fire extinguisher, first aid kit, etc.) are stored in the support vehicle.

## **9.0 DECONTAMINATION**

Use of mechanized equipment (see QAPP) and PPE will serve to minimize worker contact with site contaminants. However, procedures may be necessary to remove and/or minimize contaminants that have accumulated on equipment and personnel.

### **9.1 Personnel and Equipment Decontamination**

All personnel and equipment leaving the work zone must be decontaminated. Decontamination procedures prior to leaving Level "D" areas will consist of brushing loose soil from clothing and equipment, washing equipment and clothing with water and a mild detergent. Disposable gloves, scoops, paper towels and any Tyvek suits will be discarded in trash receptacles provided within these areas. All wastes generated in Level "D" areas will be bagged and disposed of on site without any additional restrictions.

If Level C working conditions are required, a decontamination work area will need to be established. If needed, this will involve establishing a plastic-lined work table, and plastic liner to "catch" wash solutions and contaminated soil. When exiting the work zone, workers will enter the decontamination zone. Instruments, sample containers, and reusable equipment will be placed on a plastic covered table. These items will be cleaned with the appropriate cleaning solutions. The workers will then decontaminate their protective clothing. Disposable items will be discarded in trash receptacles which will be provided within the decontamination area.

## **10.0 EMERGENCY/CONTINGENCY PLAN**

### **10.1 Personnel Roles, Lines of Authority, and Communication**

The Health & Safety Officer (HSO) or the on-site designee is the primary authority for directing site operations under emergency conditions. All Health and Safety related emergency communications both on and off site will be directed through the Health and Safety Officer.

### **10.2 Site Evacuation**

The emergency response capabilities of the local authorities and agencies will be assessed prior to the initiation of work.

Prior to the evacuation of any off site area, the Exclusion Zone and the CRZ will be expanded. Monitoring of the expanded CRZ will be conducted to determine if offsite evacuation is truly necessary.

When the HSO determines that conditions may actually warrant the evacuation of downwind residences and commercial operations, local agencies will be notified and assistance requested. Designated personnel will initiate evacuation of the immediate off site area without delay.

All work crews should be aware of surrounding conditions including the wind conditions while working outdoors. When conditions warrant moving away from a work site, the field crew will relocate up wind. If site access is restricted, or limited in any way, the crew may be instructed by the HSO to evacuate the site rather than move upwind, especially if an upwind withdrawal moves the field crew away from an acceptable escape route.

If conditions warrant a site evacuation, the field crew will proceed upwind of the work site and will notify the HSO or their designated representative. If the decontamination area is upwind and more than 500 feet from the work site, the crew will pass through the decontamination area to remove their outer suits. Following decontamination, the field crew will proceed to the support vehicle and an assessment of the situation will be made by the HSO, or their designated representative. As soon as it is practical, and as additional information about site conditions is received from the field crew, the situation will be communicated to the Health and Safety Supervisor, Health and Safety Manager, the project manager, and if applicable the appropriate local emergency response agencies.

### **10.3 Emergency Medical Treatment and First Aid**

First aid will be available to any person injured. A First Aid Kit will be on hand. The injured person may be transported to a medical center for further examination and treatment. The preferred transport method is a professional emergency transportation service; however, if this option is not readily available or would result in excessive delay, other transport is authorized.

*Under no circumstances should an injured person transport themselves to a medical facility for treatment, no matter how minor the injury may appear.*

If an injury occurs in the Exclusion Zone, provisions for decontamination of the victim will be made. However, if injuries are deemed life-threatening, then normal decontamination

procedures may be dispensed with. In such cases arrangements will be made with the emergency response personnel to provide the necessary containment or decontamination.

#### **10.4 Spill Response**

Should an equipment release occur from a vehicle or equipment being used on the LSS Site, the spill will be reported to NYSDEC Spill hotline within 48 hours, unless the spill is

1. Less than 5 gallons,
2. Contained and controlled,
3. Not impacting water or land, AND
4. Cleaned within 2 hours.

The EP1 Site is not a registered Petroleum Bulk Storage facility.