

WR Sewage & Excavation Inc., Job and/or Site Specific Health and Safety Plan

1.0 APPLICATION

This Health and Safety Plan (HASP) will be implemented for "Regulated Areas" on any site defined by Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1018. Regulated areas will be established, when results from air monitoring and/or soils sampling under the Site Excavation Plan indicate actual or potential worker exposures to organic or inorganic arsenic, or polycyclic hydrocarbons (PAHs), petroleum hydrocarbons or other chemical substances, without regard to the use of respirators, are in excess of the Permissible Exposure Limit (PEL), or other exposure criteria. Spray-applied water will be used as the primary engineering control for minimizing airborne contaminated soil dust. Standard hygiene practices will also be used to reduce potential worker exposure levels and will include, but not necessarily be limited to, hand washing before eating or smoking and before leaving the site, prohibition of eating or smoking in the open excavation and encouraging employees to launder clothing frequently and separately from family clothing.

A Hazard Assessment based on initial air monitoring will be conducted in accordance with the OSHA 1910.1018 protocols. Additional monitoring will be conducted when site conditions (such as extreme wind and/or dry soil) exist, when routine soil sampling conducted under the Site Excavation Plan indicate a significantly higher level of contamination in the soil to be disturbed, or other changes to the work warrant. The Site Engineering Consultant if assigned will immediately notify the WR Sewage & Excavation Project Superintendent/Site Safety Officer (SSO) of any known or suspected hazardous worker exposure. The SSO will immediately stop work of all potentially affected employees in the reported area until a positive determination is made. If one or more hazardous substance levels are determined to be above the PEL or other exposure criteria, the SSO will immediately establish a regulated area and implement the HASP. All construction and work practices will conform with OSHA standards and Health Requirements, For a schedule of proposed work, refer to the construction schedule, Construction Progress Documentation.

1.1 Health and Safety Plan Personnel Roles and Lines of Authority

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The purpose of this HASP is to establish the policies and procedures for protecting the health and safety of personnel & the public during construction and development activities to be conducted at

Project located in _____.

The HASP contains information about known or suspected chemical and physical hazards, as well as routine and special procedures that must be followed in order to safeguard the health of on-site workers and visitors. All personnel must understand and adhere to the policies set forth in the HASP before site activities begin. This HASP may be amended as necessary as new information becomes available. Applicability of the HASP extends to all on-site employees, subcontractors, and visitors. All onsite personnel must be informed of any site fire, explosion, health, or safety hazard of operation and emergency response procedures. This plan must be reviewed by on-site personnel, and an agreement to comply with the requirements must be signed by all personnel prior to commencement of work at the site. Non-compliance with site safety procedures must not be tolerated. Personnel not observing known site safety procedures must be removed from site activities.

During development of this plan consideration was given to current safety standards as defined by Environmental Protection Agency (EPA)/OSHA and National Institute for Occupational Safety and Health (NIOSH). In addition, the health effects and standards for known contaminants, and procedures designed to account for the potential for exposure to unknown substances were also considered in developing this HASP. Specifically, the following reference sources have been consulted:

- OSHA 29 CFR 1910.1018
- OSHA 29 CFR 1910.120 and EPA 40 CFR 311
- (ACGIH) Threshold Limit Values
- NIOSH/OSHA/USCG/EPA Occupational Health and Safety Guidelines

All visitors entering the site must be informed of site safety and health procedures. Visitors will be expected to comply with the provisions of the HASP, and other relevant OSHA and EPA regulations. Visitors will be expected to provide their own personal protective equipment. If a visitor does not adhere to the provisions of this HASP, they will be requested to leave the work area. All incidents of non-conformance with the HASP will be documented in the site safety log.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 Project Superintendent

The Project Superintendent has the ultimate responsibility for health and safety of all personnel on this project. The Project Superintendent's health and safety responsibilities include:

- Ensuring that an effective and comprehensive HASP is prepared;
- Ensuring that adequate and appropriate safety training and equipment are available for project personnel;
- Ensuring that personnel are medically monitored and qualified for their involvement in this project as needed;
- Ensuring that all subsurface utilities are marked prior to the commencement of site activities;
- Appointing a qualified individual to serve as the Site Safety Officer (SSO);
- Coordinating with subcontractors to ensure that requirements of this HASP are met and documented, and that their workers understand and sign this HASP; and
- Ensuring that all permits have been obtained and all applicable regulatory agencies have been informed in advance.

3.2 Site Safety Officer

The SSO has total responsibility for ensuring that the provisions of this HASP are adequate and implemented in the field. Changing field conditions may require decisions to be made concerning adequate personnel protection programs. Therefore, it is vital that the person assigned as SSO be experienced and meet any additional training requirements specified by OSHA in 29 CFR 1910.120. The SSO is also responsible for conducting site inspections on a regular basis in order to ensure the effectiveness of this plan. The SSO is responsible for the following:

- Conducting weekly site safety meetings.
- Ensuring and enforcing compliance with this HASP.
- Performing record keeping for health and safety requirements (air monitoring, safety meetings, HASP acknowledgment signatures, etc.) and maintaining safety equipment.
- Implementing on-site safety procedures.
- Upgrading and downgrading levels of protection, as appropriate.
- Controlling site entry of unauthorized personnel.
- Determining and posting emergency routes and procedures; and
- Coordinating with emergency personnel.

3.3 Environmental Control Officer

If required, an Environmental Control Officer shall be appointed. The Environmental Control Officer (EDO) is responsible for enforcing the environmental protection and health and safety provisions. The ECO will also serve as the alternate SSO and the primary person responsible for establishing the site sample plan and conduct appropriate sampling. All soil sampling, combustible gas monitoring, and soil screening will be monitored by the ECO.

3.4 Field Team Members

Field team members and subcontractors are responsible to the Field Team Leader and the SSO for all on-site activities. The responsibilities of field team members include:

- Complying with all aspects of this HASP;
- Obeying the orders of the Field Team Leader and the SSO; and
- Notifying the Project Superintendent or SSO of hazardous or potentially hazardous incidents or working situations. At a minimum, one field team member, currently trained in CPR and First Aid, must be present during all site activities.

3.5 Other Professional Consultants

If it is required by contract that additional key personnel be available for a project such as a Certified Industrial Hygienist (CIH) and a Professional Engineer for geotechnical engineering support as relates to sheeting and shoring and backfill compaction. These professionals will be coordinated, as necessary, through the ECO.

4.0 Personnel Training Requirements

All on-site personnel including WR Sewage & Excavation employees, subcontractor personnel, and environmental professionals who will be working with suspect hazardous materials on-site, must be trained in accordance with OSHA's regulations covering Hazardous Waste Operations and Emergency Response (HAZWOPER). Prior to arrival on site, each employer will be responsible for certifying that his/her employees meet the requirements of pre-assignment training, consistent with OSHA 29 CFR 1910.120 (e)(3). The employer should be able to provide a document certifying that each general site worker has received 8 hours of HAZWOPER awareness training.

At a minimum, all on-site personnel should understand the provisions of this HASP, and should be trained to recognize the physical and chemical hazards that may be present on the site. Furthermore, all on-site personnel are required to attend weekly safety meetings. The meetings shall discuss specific operations and site specific hazards which can be expected to be encountered at each work area. The hazards will vary by location and by facility. The following items will be covered during these meetings:

- Site characterization and analysis;
- Physical hazards
- Chemical hazards
- Fire and explosion hazards
- Material handling requirements
- Site control
- Training requirements
- Medical surveillance
- Work plan
- Personal protective equipment (PPE) requirements
- Air monitoring requirements
- Decontamination requirements
- Communications requirements
- Procedures for handling site emergency incidents; and
- Confined space entry, if any.

If required, the CIH shall conduct a review of this plan, evaluate site specific hazards, and recommend additional air monitoring requirements.

5.0 HAZARD EVALUATION AND CONTROL

5.1 Chemical and Physical Hazards

The hazards associated with this project may be both chemical and physical. The chemical hazards anticipated are from elevated concentrations of the contaminant / decomposing materials found within the site soils. Physical hazards include falling and/or flying objects, possible toxic atmospheres, moving equipment parts, overhead/underground utilities, overhead tree felling, and machinery / vehicular traffic.

These chemical and physical hazards are explained in further detail in Section 5.1.1.

Confined space entry procedures are discussed in Section 10.

5.1.1 Chemical Hazards

Suspected chemical hazards that may be present at this site may include arsenic, PAHs, and petroleum hydrocarbons. Routes of exposure for these products are inhalation, skin absorption, and ingestion. The hazards are discussed in further detail below. Refer to Appendix for details about each suspected contaminant or consult a material safety data sheets (MSDSs) or equivalent source for additional information concerning these material.

Arsenic (CAS #7440-38-2)

Arsenic is a silvery to black solid that is odorless, sublimes, and has no boiling point.

Arsenic has no flash point, as it is a noncombustible solid. Arsenic is insoluble in water and is a listed carcinogen. The immediately dangerous to life and health (IDLH) level for arsenic is 5 milligrams per cubic meter (mg/m³). The OSHA permissible exposure limit (PEL) is 0.5 mg/m³.

- The ACGH 8-hour time weighted average (TWA) limit is 0.01 mg/m³
- The short-term exposure limit (STEL) is 0.002 mg/m³ as a 14 minute exposure.

Arsenic is irritating to the eyes, skin, and respiratory tract. Arsenic also causes damage to blood-forming organs, the nervous and cardiovascular systems. Target organs are the eyes, skin, respiratory system, mucous membranes, nervous system, and blood.

The following first aid procedures are recommended for exposure to arsenic.

For exposure to the eyes, irrigate immediately with an eyewash solution or fresh water. For skin exposure, the affected areas should be promptly washed with soap and water. If swallowed, get medical attention immediately.

Polycyclic Aromatic Hydrocarbons (Various CAS Numbers)

Polycyclic aromatic hydrocarbons (PAHs) are relatively simple organic compounds composed of two or more fused aromatic rings. PAHs include hundreds of compounds and are typically products of incomplete combustion / decomposition of organic materials. A number of these compounds in the PAH group are carcinogenic. Of these, benzo(a) pyrene (CAS #50-32-8), benz(a) anthracene (CAS # 56-55-3), and dibenz (a,h) anthracene (CAS #53-70-3) are three of the most carcinogenic of the PAH group and were detected at the project site. For less toxic PAH compounds were also detected at the project site, including benzo(b) fluoranthene, (CAS #205-99-2) indeno (1,2,3-cd) pyrene (CAS # 193-39-5), chrysene (CAS # 218-019), and benzo (g,h,i) perylene (CAS #191-24-2). These are all non to possibly carcinogenic compounds. These PAHs typically appear as colorless to yellow plates or needles and are typically odorless except for the compound Benzo(a) pyrene which has an aromatic odor. Benzo(a) pyrene can also exist as a crystalline solid or powder. This PAH group is soluble in water and has a relatively high boiling point. PAHs can be irritating to the eyes, skin and respiratory tract. Specific PAHs can cause damage to blood-forming organs, nervous and cardiovascular systems with benz(a) anthracene listed as a poison. Target organs are the eyes, skin, respiratory system, gastrointestinal, kidneys, liver, and mucous membranes.

The following first aid procedures are recommended for exposure to PAHs.

For exposure to the eyes, irrigate immediately with an eyewash solution or fresh water. For skin exposure, the affected areas should be promptly washed with soap and water. If inhaled remove to fresh air. If swallowed, get medical attention immediately.

Benzene (CAS # 71-43-2)

Benzene is a colorless to light-yellow liquid with an aromatic odor. Benzene has a molecular weight of 78, boiling point of 176° F, and a flash point of 12° F. Benzene is a listed carcinogen. The IDLH level for benzene is 3,000 parts per million (PPM). The OSHA PEL is 1 ppm as an 8-hour TWA and the STEL is 5 ppm as a 15-minute exposure. Routes of entry for benzene are inhalation, skin absorption, ingestion, and skin/eye contact. Acute symptoms of exposure include skin, eye, nose, and respiratory irritation; headache; nausea; and abdominal pain. Chronic symptoms of exposure include blood and liver disorders, dermatitis, painful and irregular urination, and cancer. Target organs are the bladder, kidneys, liver, skin, and blood.

The following first aid procedures are recommended for exposure to benzene.

For exposure to the eyes, the affected eye(s) should be irrigated immediately with an eyewash solution or fresh water. For skin exposure, the affected areas should be promptly washed with soap and water. If a large amount is inhaled, the exposed person should be moved to fresh air. If breathing has stopped, perform mouth-to-mouth resuscitation and summon medical help as soon as possible. If swallowed, get medical attention immediately.

Toluene (CAS # 108-88-3)

Toluene is a colorless liquid with a sweet, pungent odor. Toluene has a molecular weight of 92, boiling point of 232° F, and flash point of 40° F. The IDLH for toluene is 2,000 ppm. The OSHA PEL is 100 ppm as an 8-hour TWA and the STEL is 150 ppm as a 15-minute exposure. Routes of entry for toluene are inhalation, skin absorption, ingestion, and skin/eye

contact. Symptoms of exposure include fatigue, weakness, euphoria, headache, dilated pupils, nervousness, insomnia and dermatitis. Target organs are the central nervous system, liver, kidneys, and skin.

First aid procedures are the same as those for benzene.

Ethyl benzene (CAS # 100-41-4)

Ethyl benzene is a colorless liquid with an aromatic odor. It has a molecular weight of 106, a boiling point of 277° F, and a flash point of 55° F. The IDLH for ethyl benzene is 2,000 ppm. The OSHA PEL is 100 ppm as an 8-hour TWA and the STEL is 12 ppm as a 15minute exposure. Routes of entry for ethyl benzene are inhalation, ingestion, and skin/eye contact. Symptoms Of exposure include irritation of the eyes and mucous membranes, headache, tightness of the chest, dizziness, tremors, and loss of consciousness. Target organs are the eyes, upper respiratory system, skin, and central nervous system.

First aid procedures are the same as those for benzene.

Xylenes (Various CAS numbers)

Xylenes are colorless liquids with an aromatic odor. They have molecular weights of approximately 121, boiling points of 269 and 292° F. The IDLH for xylenes is 1,000 ppm. The OSHA PEL is 100 ppm as an 8-hour TWA and the STEL is 150 ppm as a 15-minute exposure. Routes of entry for xylenes are inhalation, absorption, ingestion, and skin/eye contact. Symptoms of exposure include dizziness; excitement; drowsiness; incoherence; a staggering gait; irritation to the eyes, throat, or nose; anorexia; abdominal pain; and dermatitis. Target organs are the central nervous system, eyes, gastrointestinal tract, blood, liver, kidneys, and skin.

First aid procedures are the same as those for benzene.

5.1.2 Physical Hazards

Numerous physical hazards may be associated with the site activities. These include falling of trees and/or flying objects, explosive atmospheres, fire, overhead/underground utilities, injuries from falls and moving construction vehicles. Proper protective equipment such as steel-toed boots, hardhats, safety vests, safety glasses with side shields, and adequate work clothing should be worn when required. Those employees who are exposed to public vehicular traffic will be provided with warning vests or other suitable garments marked with reflectors or high-visibility material with training to ensure they are worn. Only experienced personnel will operate moving equipment and/or powered lifts. Unauthorized riders will not be allowed on vehicles. If accidents do occur, report them to the SSO immediately so that they can be properly corrected and recorded. Administer proper first aid, and summon medical help as needed.

5.1.2.1 Excavation and Trenching

Excavation and trench workers are exposed to many hazards, but the chief hazard is danger of cave-ins. OSHA requires that in all excavations employees exposed to potential cave-ins must be protected by sloping or benching the sides of the excavation, or by placing a shield between the side of the excavation and the work area. To ensure the safety and health of workers in an excavation and/or trench is to slope the sides to an angle not steeper than one and one-half horizontal to one vertical (34 degrees measured from the horizontal). On a daily basis, the SSO will inspect excavations and their adjacent areas for possible cave-ins and/or other hazardous conditions that may affect workers. If hazardous conditions are encountered, exposed employees will be removed from the hazardous area until the necessary safety precautions have been taken. Inspections will also be done after natural (e.g. heavy rains) or man-made events such as blasting that may increase the potential for hazards. The SSO will be a competent person who has the

authorization to take prompt corrective measures to eliminate or control work place hazards. The excavation work done by WR Sewage & Excavation or its subcontractors will meet all accepted engineering practices and meet all performance criteria and OSHA safety standards pursuant to 29 CFR 1926.650, .651, and .652.

The following safety measures will be used:

- Emergency rescue equipment is required and will be available if a hazardous atmosphere exists or can reasonably be expected to exist.
- Respirators will be available if particulate or organic vapors are encountered in levels above the OSHA recommended PEL during excavations.
- Workers who will work in confined spaces or deep trenches will be given a 2-hour safety course in confined space safety on the use of lifelines and the buddy system.

5.2 General Operational Procedures

5.2.1 Accident Reporting

Serious accidents such as those resulting in treatment of injuries or illnesses at a medical facility, fatalities, response by the fire department, damage to property at the site, shall be reported to the WR Sewage & Excavation Inc within 4 hours.

The SSO shall initiate investigations of all such serious accidents. A copy of the accident report resulting from such investigations shall be submitted to the WR Sewage & Excavation Inc Contracting Safety Officer within two days of the occurrence.

Within eight (8) hours after the death of any employee from a work-related incident or the inpatient hospitalization of three or more employees as a result of a work-related incident, WR Sewage & Excavation will orally report the fatality/multiple hospitalization by telephone or in person to the OSHA Region III Area Office at 215-861-4900 or the OSHA Hotline at 1-800-321-6742.

All contractors shall maintain a log of all accidental injuries and illnesses, at the worksite, in conformance with OSHA Form 300 and related accident forms.

5.2.2 Unforeseen Events

Should an unforeseen potentially hazardous condition become evident during work activities, the Site Safety Officer, Environmental Control Officer, or the CIH has authority to immediately stop work and rectify the potential hazard. The WR Sewage & Excavation Inc Contracting Safety Officer will be notified verbally within one work shift and in writing within 48 hours for prompt resolution.

5.3 Operations and Controls

5.3.1 Site Reconnaissance and Visits

General visits to the site for non-hazardous tasks such as pre-work evaluations, utility marking, surveying, or client contact may be conducted in appropriate clothes. Other work operations must not occur concurrently; if they do, the individual(s) must remain outside established activity perimeters.

5.3.2 Soil Excavation and Manipulation

Minimal chemical exposure to employees is anticipated while conducting soil excavation and manipulation activities at the project site. The principal hazards associated with soil excavation and manipulation are as follows and further details are cited in Appendix:

- Potential skin/eye contact with contaminated soils;

- Inhalation of contaminated dust in breathing zone;
- Possible exposure to organic vapors

The following safety equipment must be used:

- Steel-toed boots (worn)
- Coveralls (worn) or spare work uniform available for equipment operators
- Protective disposable coveralls for trench or ground workers exposed to contaminated soils
- Hardhat and safety glasses (worn)
- Chemically protective gloves (worn) for ground workers exposed to contaminated soils
- Respiratory equipment for particulates and organic vapor exposure, if encountered

The following safety procedures will be followed:

- Air monitoring equipment will be used to characterize breathing zone exposures during initial ground work, earth moving;
- Hardhats, safety-toed boots, and safety glasses will be worn during soil excavating or manipulation;
- If sustained breathing zone readings exceed the OSHA PEL criteria for the suspect compound, then full-face respirators with the appropriate cartridges will be worn (High Efficiency Particulate Air and organic vapor).

5.4 Temperature Extremes

5.4.1 Intense Heat

Based upon the time frame for completely this work extreme heat is not likely, however this information is provided for completeness. When work is performed under extreme temperature and humidity conditions, it is essential that a heat stress monitoring program be implemented to avoid over-exposure to heat. Extended periods under very hot conditions may result in heat stress, exhaustion, or heat stroke. Electrolyte liquids must be available to replenish body fluids lost due to perspiration, to reduce the risk of heat cramping. When temperatures on-site exceed 70°F, medical monitoring is necessary for all personnel in Level C PPE or higher. This monitoring will include visual observances for heat stress and checking body temperatures and pulse rates for personnel in Level C protection. Work will be limited to normal weather conditions and daylight hours. In temperatures that exceed 90°F, two daily rest breaks for a minimum of 15 minutes and lunch break greater than one-half hour in a shaded area is required. Monitoring will commence when the temperatures exceed 90°F and hourly rest periods (10 minutes) must be taken. Body temperatures and pulse rates must be taken during these rest periods. If the body temperature starts to rise or if the heart rate exceeds 110 beats per minute, additional rest periods must be taken. Heat stroke is a profound disturbance to the body's heat regulating mechanism associated with high fever and collapse. This condition can result in convulsion, unconsciousness, and death. Direct exposure to sun, poor air circulation, poor physical condition, and advanced age can all contribute to heat stroke.

The symptoms of heat stroke may include the following:

- Sudden onset;
- Dry, hot, flushed skin;
- Dilated pupils
- Early loss of consciousness;
- Full and fast pulse rate;
- Uneven breathing rate;
- Involuntary muscle twitching and convulsions;
- Body temperatures reaching 105°F or higher.

Heat stroke constitutes a medical emergency and warrants immediate medical care. Remove the victim to a cool environment and remove as much clothing as possible. Reduce the body temperature by dousing the body with cool sponges, towels, or cold water. If ice packs are available, apply them to the underarms, neck, ankles, or wrists to cool the blood. Monitor breathing and summon professional help.

5.4.2 Intense Cold

Persons working outdoors in temperatures at or below freezing may be frostbitten. Extreme cold for a short time may cause severe injury to exposed body surfaces, or result in profound general cooling causing death. Areas of the body with high surface area-to-volume ratios such as fingers, toes, and ears are the most susceptible.

Two factors influence the development of cold weather injury: ambient temperature and wind velocity. Wind chill is used to describe the chilling effect of moving air in combination with low temperature. For instance, 10° F with a wind of 15 miles per hour is equivalent in chilling effect to still air at 18° F. As a general rule, the greatest incremental increase in wind chill occurs when a wind of 5 miles per hour (mph) increases to 10 mph. Additionally, water conducts heat 240 times faster than air. Thus the body cools suddenly when chemical-protective equipment is removed if the clothing underneath is perspiration soaked. Local injury resulting from cold is included in the generic term "frostbite". There are several degrees of damage. Frostbite of the extremities can be categorized into:

Frost nip or incipient Frostbite:

Characterized by suddenly skin blanching or whitening. Superficial frostbite: skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient.

Deep Frostbite:

Tissues are cold, pale, and solid; extremely serious injury.

Systemic hypothermia:

Caused by exposure to freezing or rapidly dropping temperature. It can be fatal.

Its symptoms are usually exhibited in five stages:

- 1) Shivering;
- 2) Apathy, listlessness, sleepiness, allowed (sometimes) rapid cooling of the body to less than 95-degrees F;
- 3) Unconsciousness, glassy stare, slow pulse, and slow respiratory rate;
- 4) Freezing of the extremities; and
- 5) Death.

Personnel who exhibit any of the symptoms described above should report or be referred to the SSO and be moved to a warmer environment.

6.0 Personal Protective Equipment

If deemed necessary the following is a brief description of the PPE that may be required during various phases of the project. The following OSHA terminology for protective equipment will be used: Levels D and C. Respiratory protective equipment must be NIOSH approved, and use must conform to OSHA 29 CFR 1910.134 requirements. Each employer will maintain a written respiratory program detailing selection, use, cleaning, maintenance, and storage of respiratory protective equipment. Medical monitoring conducted in accordance with OSHA's respiratory protection standard must be provided if any type of respiratory protection is used.

The above levels of protection may be modified as appropriate by the SSO. For example, a modified Level C could be implemented to include respiratory protection, but no chemical resistant gloves, in instances where airborne petroleum vapors are the only chemical hazards present. All modifications must be documented in writing in a daily log maintained by the SSO.

A description of the levels of PPE required are as follows;

6.1 Level D Protection

Level D protection must be used when anticipated activities may involve minor splashes, minor soil contact, or work in non-dusty environments where there is a chance of nuisance contamination only. Level D protective equipment must consist of the following:

- Standard work uniform with spare or coveralls;
- Safety Vests (worn)
- Steel-toed work boots (worn);
- Gloves as appropriate;
- Safety glasses (worn);
- Splash shield as need;
- Hardhat (worn); and
- Air-purifying respirators (APRs) available.

6.2 Level C Protection

Level C Protection must be used when there is a greater chance of direct contact with soil contamination, work with hazardous vapors, or work conducted in dusty environments. All criteria for the use of air purifying respirators must also be met. This includes identifying the type and concentration of any air contaminants through air monitoring.

Level C protective equipment must consist of the following:

- Full-faced, air-purifying respirator worn) with combination HEPA/organic vapor cartridges (NOISH-approved);
- Chemical resistant clothing (Saranax or Tyvek);
- Chemical resistant safety-toed boots (worn);
- Chemical resistant inner gloves (worn);
- Chemical resistant outer gloves (worn);
- Safety Vests (worn)
- Hardhat (worn); and
- Emergency escape breathing apparatus (optional).

7.0 MEDICAL SURVEILLANCE

Depending on the results of routine air sampling and monitoring, all personnel involved with on-site operations must meet the medical monitoring requirements (baseline and annual physical) described in AOSH 29 CFR 1910.120 and 29 CFR 1910.1018. Personnel should have access to proof of their required medical monitoring. The SSO should be aware of any chronic medical problems of on-site personnel.

The SSO will be made aware of any site-related injury, exposure, or medical condition resulting from on-site activity and will maintain a record of all injuries. Additionally, all accidents must be reported to WR Sewage & Excavation Inc Safety Officer. OSHA reportable injuries must be properly documented. As a follow-up to any of the above, all employees are entitled to and encouraged to seek medical attention and physical testing. Depending on the type of potential exposure, it is critical to perform follow-up testing within 24 to 48 hours.

8.0 AIR MONITORING

Air monitoring when necessary, will be performed to identify and/or quantify airborne levels of hazardous substances and health hazards to determine the appropriate level of protection required. The principal method of air monitoring will be with direct-reading instruments.

The following instruments will be on-site in sufficient quantities to make immediate field decisions to protect site workers:

- Photoionizing detectors (PID) or Flame ionizing detector (FID);
- Explosimeters; and
- Oxygen detectors for confined space entry if required.

Analytical testing will be necessary to fully evaluate worker potential exposures and will be conducted to assess PPE needs in conjunction with engineering controls to reduce potential contaminant concentrations. Air monitoring will be conducted during site-specific operations as necessary. All instrument readings will be recorded in the SSO Log or in a designated field book. This information will be incorporated into the health and safety project file. Air monitoring will be performed whenever hazardous gasses or vapors may be present. This includes general soil work, excavation, and soil and water sampling. All laboratory certifications if applicable shall be attached on Appendix.

8.1 Testing Laboratories

If required, routine air and soil sampling conducted at the site will be done by _____ Laboratory

And they shall provide full environmental microbiological sampling and testing services. Certified by the AIHA (ID # EMPAT-102977)

9.0 SITE CONTROL MEASURES

The primary purpose for site controls is to establish the hazardous area perimeter, to reduce the potential for contaminant migration into clean areas, and to prevent access or exposure to hazardous situations by unauthorized personnel.

9.1 Work Area Perimeter

Work area perimeters must be established and marked to prevent possible contamination of non-essential personnel. This will be a minimum perimeter of 25 feet from the main excavation where the greatest potential for contamination is present. For other operations, the perimeter will be established as appropriate by the Site Superintendent. Perimeters can be marked with a variety of methods including safety cones, flagging, and spray paint. Because the entire site will be developed and excavation or site work will disturb all of the surficial soils, the perimeter will be functionally established as the perimeter of the job site.

9.2 Buddy System

In a condition where hazards may exist, all personnel are required to practice the "Buddy System". A buddy system requires a minimum of two people who are in constant contact.

9.3 Decontamination Procedures

Decontamination procedures are important to worker protection and are integral in minimizing off-site contamination. Equipment and field personnel must be decontaminated prior to leaving the site. Equipment must be washed to remove residual contamination. PPE must be removed in a manner appropriate to minimize exposure, and field personnel should wash potentially exposed areas of their bodies with soap and water. If the work uniform becomes contaminated, it should be promptly removed and replaced with a clean spare. No contaminated clothing or PPE should

leave the job site and workers must exercise extreme caution in "tracking" contaminants to the vehicles, homes, or exposing their family members by not fully decontaminating themselves prior to leaving the site.

9.4 Safe Work Practices

Standard safe work procedures for the site include:

- Implement the buddy system when necessary;
- No matches or lighters should be used;
- No horseplay;
- No smoking;
- Wear appropriate level of protection as defined in this HASP;
- No eating, drinking, or chewing gum/tobacco. Whenever possible, avoid contact with contaminated (or potentially contaminated) surfaces. Walk around (not through) puddles and discolored ground.
- Avoid contaminated soil unless it is bagged or otherwise protected; and
- Entry into non-sloped unshored pits greater than four feet in depth is **prohibited**.

9.5 Disposal of Wastes

Disposal of regulated substances used on site will be removed from the work site by a licensed hazardous waste removal service that specializes in regulated waste. Motor oil, oil filters, and antifreeze will be removed by service to be used is yet to be determined.

Other hazardous substances may be encountered during the project and may include: PCB containing light ballasts, mercury-containing fluorescent light tubes, asbestos, lead-based paint, etc. Due to the nature of these materials, spills or releases are not expected. All of these materials will be properly containerized and staged at all times within the Hazardous material Staging Area and inspected regularly (at intervals not less than weekly). In the event of a release of any of these materials, the following steps will be immediately taken:

- Follow emergency contact procedures above;
- Equip response personnel with appropriate PPE (e.g. resistant gloves and clothing);
- Determine the cause of the release and remedy (e.g. re-seal containers, use over packs, etc.);
- Cleanup and properly store any released material; and
- Remove and properly dispose of any affected soil, water, or pavement.

At its discretion, the EPA may require additional work, or a site inspection by a case manager.

Non-Hazardous Waste (NHW) construction debris (solid waste) including crushed, empty, NHW drums will be placed into dumpsters. Liquid NHW will be stored in DOT-approved steel drums and staged pending proper disposal. NHW drums will be marked as "Non Hazardous Waste" with the contents identified. Liquid wastes will be kept to a minimum by promoting complete use of containerized products and recycling where practical. Empty, dry, non-hazardous liquid containers will be placed into a designated dedicated dumpster. Bucket dumpsters will be kept covered to prevent unintentional mixing with other wastes and/or rain water.

Solid NHW will be disposed of in 30 cubic yard covered containers. Each load that is removed from the site will be ticketed and copies will be submitted quarterly as part of the Non-Hazard Solid Waste Diversion Report. This report will be submitted on the first day of each quarter, starting when work begins.

10.0 EMERGENCY RESPONSE AND CONTINGENCY PLANS

The following standard emergency procedures will be used by on-site personnel. The SSO will be notified of any on-site emergencies and will be responsible for ensuring that the appropriate procedures are followed. Refer to Section 4.1.1 (Chemical Hazards) and the chemical description sheets for the hazardous products, which may be contacted on this project.

10.1 Pre-Emergency Planning

During the weekly safety meetings, all employees will be trained in and reminded of provisions of the emergency plan, communication systems, and the evacuation routes. The Plan will be revised as necessary to reflect the most current site conditions. The following is a listing of emergency phone numbers.

Facility Telephone Number

District Of Columbia Fire Emergency Dial 911

All Emergencies Dial 911

Poison Control Center Dial 202-625-3333

EPA Region 3 Office Dial 1-215-861-4900

National Response Center (EPA/CG) Dial 1-800-424-8802

CHEMTREC Dial 1-800-424-9300

The Poison Control Center can be called to provide information concerning accidental poisonings of site personnel (or other individuals). They can provide information for specific first aid procedures and will have MSDS information for most toxic compounds. CHEMTREC is available to provide information concerning spill procedures or to assist in evaluation of unexpected chemical hazards. For example, if you are on a site and come across a container of substance X, and want information regarding handling procedures for the container, you can call CHEMTREC and they can provide information to help you. If you have spilled substance X, they can provide information regarding clean-up procedures for the spill. They can also provide additional information on other agencies to contact concerning the specific incident.

10.2 Personnel roles and Lines of Authority

The SSO has the primary responsibility for responding to and correcting emergency situations. This includes taking appropriate measures to ensure the safety of site personnel and the public. Possible actions may involve evacuating personnel from the site area and requesting the evacuation of adjacent residents. In addition, the SSO is responsible for ensuring that corrective measures have been implemented, appropriate authorities notified, and follow-up reports completed. Subcontractors are responsible for assisting the SSO in his/her mission within the parameters of their scope of work. The SSO must be notified of any personal injury and will respond. The SSO must be notified of any other types of emergencies as well.

10.3 Directions to Hospital for Medical Emergencies

The closest Hospital to the work site is _____ Hospital.

The Hospital is equipped with an emergency room.

Emergency Services Police may be reached by dialing 911.

10.4 Fire and Explosion

The District of Columbia Fire Department can be reached by dialing 911.

10.5 Site Emergency Facilities

Emergency facilities will be located in the on-site work truck or trailer. Required emergency materials at these facilities include:

- First aid kit;
- Eye wash kit if a splash potential exists;
- Fire extinguisher;
- Map to the nearest hospital and emergency numbers shall be posted;
- Decontamination equipment as needed;

Other materials that may be needed include:

- Thermometers (oral and ambient temperature)
- Potable drinking water
- Towels, blankets, hot packs, and/or ice packs.

11.0 DRUG PREVENTION POLICY

In compliance with the Drug Free Work Act of 1988, WR Sewage & Excavation Inc. and its subsidiaries subcontractors prohibits the use, possession, distribution, dispensing, or manufacture of controlled substances, alcohol, and/or illicit drugs on this work site. WR Sewage & Excavation Inc., In. has a commitment to maintain the highest standards for employee safety and health and the use of controlled substances is contrary to this belief. The basis for WR Sewage & Excavation Inc. of the Drug Prevention Policy is Title 49 CFR Part 199, which requires WR Sewage & Excavation Inc., and its subsidiaries and subcontractors to test their employees for prohibited drugs under the following work related conditions:

- Post accident.
- Reasonable cause.
- Return to duty.

An accident that may trigger a drug test is one where the following may have occurred:

- Death of a person.
- Injury needing medical attention.
- Injured person losing consciousness.
- Property damage and subsequent cleanup that exceeds \$1000.
- An event that stops construction activities.
- Any event that is significant in the judgment of WR Sewage & Excavation Inc., and its agents.

Workers at this site who violate WR Sewage & Excavation Inc. drug prevention policy may face suspension, termination, fines, and criminal charges stemming from their drug or alcohol use and their subsequent behavior on any work site. WR Sewage & Excavation Inc. has made their drug prevention policy known to all its workers and subcontractors who enter this site. A WR Sewage & Excavation Inc. Drug Prevention Policy Awareness form has been signed by all affected workers and subcontractors. Current medical testing facility, as of the date of this plan is Concentra Labs. Notification will be sent should the facility or location be modified.

12.0 SCAFFOLDING

Certain phases of any project may need the use of scaffold(s) to permit work on an above ground structure. Scaffolding construction, dismantling, maintenance, inspection, use, and safety will comply with 29 CFR 1926 Subpart L of OSHA's construction standard. Fall protection training, equipment, and awareness will comply with 29 CFR 1926 Subpart M.

All persons constructing, dismantling, and using the scaffold(s) will be trained to recognize all scaffolding workplace hazards, the hazards associated with falls and fall protection equipment.

A competent person will be on site to supervise the following scaffolding operations:

- To select and direct employees who erect, dismantle, move, and alter scaffolds;
- To inspect scaffolds daily for physical defects and determine if they are safe for work and that all safety equipment is in place before workers use scaffold;
- Ensure that all employees involved in erecting, dismantling, moving, and maintaining scaffolds have been trained to recognize associated work hazards;
- Ensure scaffold components are structurally sound; A qualified person will be on site to supervise the following scaffolding operations:
 - To design and load scaffolds in accordance with its correct design.
 - Ensure that all employees working on the scaffolds have been trained to recognize the associated hazards and understand procedures to control or minimize those hazards.
 - To conduct field training on scaffold safety and awareness. A registered professional engineer will be on site to supervise the following scaffolding operations:
 - To design scaffolds that are to be moved;
 - To design suspension scaffolds;
 - To design outrigger scaffolds and scaffold components.

Fall protection is a key part of a scaffold safety program at a construction site.

Comprehensive safety training and daily work site inspections will be used to address the fall hazard issues that present themselves during ongoing and continual scaffolding construction and operation. Fall protection safety procedures will be reviewed daily and will consist of the following:

- Daily inspection of scaffolding structures and components;
- Daily inspection of safety equipment;
- Where fall protection is required, select fall protection appropriate for the given situation;
- Ensure the use, construction, and installation of safety equipment;
- Ensure all scaffold workers are trained in the proper selection, use, and maintenance of all protection equipment.

Additional Safety Requirements may be implemented by WR Sewage & Excavation Inc. as needed upon review of each project's individual needs and contractual requirements.