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NWS EARLE

5090.3a

PHIL-19034

March 22, 2005

Project Number 00012

Engineering Field Activity Northeast
Naval Facilities Engineering Command
10 Industrial Highway Mail Stop No. 82
Lester, Pennsylvania 19113-2090

Attn: Ms. Michele DiGeambeardino, Code EV21/MD

Reference: Contract No. N62472-03-D-0057
Contract Task Order (CTO) No. 029

Subject: Submission of Health and Safety Plan for Groundwater Sampling at Site 7
Naval Weapons Station Earle, Colts Neck, New Jersey

Dear Ms. DiGeambeardino:

Tetra Tech NUS, Incorporated (TtNUS) is pleased to provide three copies of the subject document.

Thank you for this opportunity to submit the documents. Do not hesitate to contact me if you have any questions or require revisions.

Sincerely,

Lucinda J. Clark
Task Manager

LJC/vh

Enclosure

c: Russell Turner (TtNUS)
File 5.2

Health and Safety Plan
for
Groundwater Sampling
At Site 7

Naval Weapons Station Earle
Colts Neck, New Jersey



Engineering Field Activity Northeast
Naval Facilities Engineering Command

Contract Number N62472-03-D-0057

Contract Task Order 0029

March 2005



TETRA TECH, INC.

HEALTH AND SAFETY PLAN
FOR
GROUNDWATER SAMPLING AT SITE 7
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:

Engineering Field Activity Northeast
Environmental Branch, Code 18
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop No. 82
Lester, Pennsylvania 19113-2090

Submitted by:

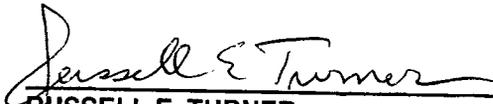
TetraTech NUS, Inc.
600 Clark Avenue, Suite 3
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CONTRACT NUMBER N62472-03-D-0057
CONTRACT TASK ORDER 0029

MARCH 2005

PREPARED UNDER THE SUPERVISION OF:

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1.0 INTRODUCTION

This Health and Safety Plan (HASP) provides practices and procedures for Tetra Tech NUS, Inc. (TtNUS) and subcontractor personnel engaged in environmental investigation activities at the Naval Weapons Station (NWS) Earle in Colts Neck, Monmouth County, New Jersey. This HASP must be used in conjunction with the TtNUS Health and Safety Guidance Manual. Both of these documents must be present at the site during the performance of site activities. The Guidance Manual provides detailed information pertaining to the HASP as well as applicable TtNUS Standard Operating Procedures (SOPs). This HASP and the contents of the Guidance Manual were developed to comply with the requirements stipulated in 29 CFR 1910.120 (Occupational Safety and Health Administration's [OSHA's] Hazardous Waste Operations and Emergency Response Standard); OSHA's Construction Industry Standards, 29 CFR 1926; and NWS Earle procedures and protocol, as they may apply.

This HASP has been developed using the latest available information regarding known or suspected chemical contaminants and potential physical hazards associated with the proposed work at the site. The HASP will be modified if new information becomes available. Changes to the HASP will be made with the approval of the TtNUS Project Health and Safety Officer (PHSO) and the TtNUS Health and Safety Manager (HSM). Requests for modifications to the HASP will be directed to the PHSO, who will determine if the changes are necessary. The PHSO will notify the Project Manager (PM), who will notify affected personnel of changes.

1.1 KEY PROJECT PERSONNEL AND ORGANIZATION

This section defines responsibility for site safety and health for TtNUS and subcontractor employees engaged in onsite activities. Personnel assigned to these positions will exercise the primary responsibility for onsite health and safety. These persons will be the primary point of contact for questions regarding the safety and health procedures and the selected control measures that are to be implemented for onsite activities.

- The TtNUS PM is responsible for the overall direction of health and safety for this project.
- The PHSO is responsible for developing this HASP in accordance with applicable OSHA regulations. Specific responsibilities include:
 - i. Providing information regarding site contaminants and physical hazards associated with the site.

- ii. Establishing air monitoring and decontamination procedures.
 - iii. Assigning personal protective equipment (PPE) based on task and potential hazards.
 - iv. Determining emergency response procedures and emergency contacts.
 - v. Stipulating training requirements and reviewing appropriate training and medical surveillance certificates.
 - vi. Providing standard work practices to minimize potential injuries and exposures associated with hazardous waste work.
 - vii. Modify this HASP, as it becomes necessary.
- The TtNUS Field Operations Leader (FOL) is responsible for implementation of the HASP with the assistance of an appointed Site Safety Officer (SSO). The FOL manages field activities, executes the Work Plan, and enforces safety procedures as applicable that plan.
 - The SSO supports site activities by advising the FOL on aspects of health and safety onsite. These duties may include:
 - i. Coordinates health and safety activities with the FOL.
 - ii. Selects, applies, inspects, and maintains PPE.
 - iii. Establishes work zones and control points in areas of operation.
 - iv. Implements air monitoring program for onsite activities.
 - v. Verifies training and medical clearance of onsite personnel status in relation to site activities.
 - vi. Implements Hazard Communication, Respiratory Protection Programs, and other associated health and safety programs as they may apply to site activities.
 - vii. Coordinates emergency services.

- viii. Provides site-specific training for onsite personnel.
 - ix. Investigates accidents and injuries (see Attachment I - Illness/Injury Reporting Procedure and Form)
 - x. Provides input to the PHSO regarding the need to modify, this HASP, or applicable health and safety associated documents as per site-specific requirements.
- Compliance with the requirements stipulated in this HASP is monitored by the SSO and coordinated through the TtNUS HSM.

1.2 SITE INFORMATION AND PERSONNEL ASSIGNMENTS

Site Name: NWS Earle
EFANE PM: Michele DiGeambeardino
Site Contact: Alicia Hartmann

Address: 201 Highway 34 South Colts Neck, NJ
Phone Number: (610) 595-0561
Phone Number: (732) 866-2060

Scheduled Activities: This activity is for collection of water levels and groundwater sampling. Further details for this activity are in Section 4 of this HASP.

Dates of scheduled activities: Groundwater sampling activities are scheduled to start in March/April 2005.

Project Team:

TtNUS Management Personnel:

Russell E. Turner
TBD
TBA
Matthew M. Soltis, CIH, CSP
TBD
TBD

Discipline/Tasks Assigned:

Program Manager
Field Operations Leader (FOL)
Project Geologist
Health and Safety Manager
Project Health and Safety Officer (PHSO)
Site Safety Officer (SSO)

Other Potential TtNUS Project Personnel:

Lucinda Clark

Project Engineer

Non-TtNUS Personnel

Affiliation/Discipline/Tasks Assigned

Hazard Assessment (for purpose of 29 CFR 1910.132) for HASP preparation has been conducted by:

James K. Laffey

2.0 EMERGENCY ACTION PLAN

2.1 INTRODUCTION

This section is to direct and guide field personnel in the event of an emergency. Site activities are coordinated with the client contacts. In the event of an onsite emergency, personnel will evacuate to a safe place of refuge and notify the NWS Earle Emergency Coordinator who is the Fire Chief. The NWS Earle emergency staff will coordinate on-site activities. They are the only authorized emergency responders who provide service in emergency situations. TtNUS and subcontractor personnel will notify the NWS Earle Emergency Dispatcher and only provide initial or incipient measures. Workers who are ill or who have suffered a non-serious injury may be transported by site personnel to nearby medical facilities, provided that such transport does not aggravate or further endanger the welfare of the injured or ill person. The NWS Earle emergency response agencies listed in this plan are fully capable of providing the most effective response, and as such, are designated as the primary responders. These agencies are located within a reasonable distance from the area of site operations, which ensures adequate emergency response time. The TtNUS Project Manager and HSM are to be notified in the event of an onsite incident. This Emergency Action Plan conforms to the requirements of 29 CFR 1910.38(a), as allowed in 29 CFR 1910.120(l) (1) (ii).

TtNUS will, through necessary services, provide the following emergency action measures:

- Incipient stage fire-fighting support and prevention
- Incipient spill control and containment measures and prevention
- Removal of personnel from emergency situations
- Initial medical support for injuries or illnesses requiring basic first aid
- Site control and security measures as necessary

2.2 EMERGENCY PLANNING

Through the initial hazard/risk assessment effort, emergencies resulting from chemical, physical, or fire hazards are the types of emergencies that could be encountered during site activities.

To minimize and eliminate the potential for these emergency situations, pre-emergency planning activities will include the following (which are the responsibility of the SSO and/or the FOL):

- Coordinating with local Emergency Response personnel to ensure that TtNUS emergency action activities are compatible with existing emergency response procedures. NWS Earle Fire

Protection and Emergency Services will be notified about scheduled events and activities. This is most imperative in situations where their services may be required.

- Establishing and maintaining information at the project staging area (support zone) for easy access in the event of an emergency. This information will include the following:
 - Chemical inventory (of chemicals used onsite), with Material Safety Data Sheets (MSDSs).
 - Onsite personnel medical records (Medical Data Sheets).
 - A log book identifying personnel onsite each day.
 - Hospital route map with directions (these should also be placed in each site vehicle).
 - Emergency notification - phone numbers.

The TtNUS FOL will be responsible for the following tasks:

- Identifying a chain of command for emergency action.
- Educating site workers to the hazards and control measures associated with planned activities at the site, and providing early recognition and prevention, where possible.
- Periodically performing practice drills to ensure site workers are familiar with incidental response measures.
- Providing the necessary equipment to safely accomplish identified tasks.

2.3 EMERGENCY RECOGNITION AND PREVENTION

2.3.1 Recognition

Emergency situations that may be encountered during site activities will generally be recognized by visual observation. Visual observation is primarily relevant for physical hazards that may be associated with the proposed scope of work. Visual observation will also play a role in detecting some chemical hazards. To adequately recognize chemical exposures, site personnel must have a clear knowledge of signs and symptoms of exposure associated with site contaminants. This information is provided in Table 6-1. Tasks to be performed at the site, potential hazards associated with those tasks, and the recommended control methods are discussed in detail in Sections 5.0 and 6.0. Additionally, early recognition of hazards will be supported by daily site surveys to eliminate a situation predisposed to an emergency. The FOL and/or the SSO will be responsible for performing surveys of work areas before

initiating site operations and periodically while operations are being conducted. Findings will be documented by the FOL and/or the SSO in the Site Health and Safety logbook; however, site personnel will be responsible for reporting hazardous situations. Where potential hazards exist, TtNUS will initiate control measures to prevent adverse effects to human health and the environment.

The above actions will provide early recognition for potential emergency situations and allow TtNUS to initiate necessary control measures. However, if the FOL and the SSO determine that control measures are not sufficient to eliminate the hazard, TtNUS will withdraw from the site and notify the appropriate response agencies listed in Table 2-1.

2.3.2 Prevention

TtNUS and subcontractor personnel will minimize the potential for emergencies by following the Health and Safety Guidance Manual and ensuring compliance with the HASP and applicable OSHA regulations. Daily site surveys of the work areas will also assist in the prevention of illness/injuries by identifying potential hazards and initiating appropriate control measures. The FOL or SSO will conduct these surveys at the beginning of each workday.

2.4 EVACUATION ROUTES, PROCEDURES, AND PLACES OF REFUGE

An evacuation will be initiated whenever recommended hazard controls are insufficient to protect the health, safety, or welfare of site workers. Specific examples of conditions that may initiate an evacuation include, but are not limited to, the following: severe weather conditions; fire or explosion; monitoring instrumentation readings that indicate levels of contamination are greater than instituted action levels; and evidence of personnel overexposure to potential site contaminants.

In the event of an emergency requiring evacuation, personnel will immediately stop activities and report to the designated safe place of refuge unless doing so would pose additional risks. When evacuation to the primary place of refuge is not possible, personnel will proceed to a designated alternate location and remain until further notification from the TtNUS FOL. Other safe places of refuge will be identified before the commencement of site activities by the SSO and will be conveyed to personnel as part of the pre-activities training session. This information will be reiterated during daily safety meetings. Whenever possible, the safe place of refuge will also serve as the telephone communications point for that area. During an evacuation, personnel will remain at the refuge location until directed otherwise by the TtNUS FOL or the On-scene Incident Commander. The FOL or the SSO will perform a head count at this location to account for and to confirm the location of site personnel. Emergency response personnel will be immediately notified of unaccounted personnel. The SSO will document the names

of personnel onsite (on a daily basis) in the site Health and Safety Logbook. This information will be used to perform the head count in the event of an emergency.

Evacuation procedures will be discussed during the pre-activities training session before the initiation of project tasks. Evacuation routes from the site and safe places of refuge are dependent on the location at which work is being performed and the circumstances under which an evacuation is required. Additionally, site location and meteorological conditions (i.e., wind speed and direction) may dictate evacuation routes. As a result, assembly points will be selected and communicated to the workers relative to the site location where work is being performed. Evacuation should always take place in an upwind direction from the site.

2.5 EMERGENCY ALERTING AND ACTION/RESPONSE PROCEDURES

TtNUS personnel will work in close proximity at NWS Earle. As a result, hand signals, voice commands, and line-of-site communication will be sufficient to alert site personnel of an emergency. When project tasks are performed simultaneously on different sites, vehicle horns will be used to communicate emergency situations. If an emergency warranting evacuation occurs, the following procedures are to be initiated:

- Initiate the evacuation via hand signals, voice commands, line-of-site communication, or vehicle horns. The following signals shall be used when communication via vehicle horn is necessary:

HELP	three short blasts	. . .
EVACUATION	three long blasts	- - -

- Report to the designated refuge point.
- Once nonessential personnel are evacuated, appropriate response procedures will be enacted to control the situation.
- Give the FOL (FOL will serve as the Incident Coordinator) pertinent incident details.

TtNUS personnel will perform removal of personnel from emergency situations and may provide initial medical support for injuries/illnesses requiring only first aid level support. Medical attention above that level will require assistance and support from the designated emergency response agency. Attachment I provides the procedure to follow when reporting an injury/illness and the form to be used

for this purpose. If the emergency involves exposures to chemicals, follow the steps provided in Figure 2-2.

In the event that site personnel cannot mitigate the hazardous situation, the FOL and/or SSO, will enact emergency notification procedures to secure additional assistance in the following manner:

Dial the NWS Earle Emergency Center immediately and then call other pertinent emergency contacts listed in Table 2-1 to report the incident. Give the emergency operator the location of the emergency, the type of emergency, the number of personnel injured, and a brief description of the incident. Stay on the phone and follow the instructions given by the operator. The operator will then notify and dispatch the proper emergency response agencies.

2.6 EMERGENCY CONTACTS

Before initiating field activities, personnel will be thoroughly briefed on the emergency procedures to be followed in the event of an accident. Table 2-1 provides a list of emergency contacts and their associated telephone numbers. This table must be posted where it is readily available to site personnel. Facility maps should also be posted showing potential evacuation routes and designated meeting areas.

TABLE 2-1
EMERGENCY REFERENCE
NWS EARLE, NEW JERSEY

CONTACT	PHONE NUMBER
Emergency Center: Police, Fire, Ambulance	2911 or (732) 866-2911
Fire Department, NWS Earle	(732) 866-2333
Security, NWS Earle	(732) 866-2291
Riverview Medical Center	(732) 741-2700
New Jersey Poison Control Center	(800) 222-1222
New Jersey One Call (Underground Utility Locator)	(800) 272-1000
National Response Center	(800) 424-8802
Chemtrec	(800) 424-9300
NWS Earle Base Contact - Alicia Hartmann	(732) 866-2060
EFANE Project Manager - Michele DiGeambeardino	(610) 595-0567
TtNUS Project Manager - Russell E. Turner	(610) 491-9688
Health and Safety Manager - Matthew M. Soltis, CIH, CSP	(412) 921-8912
Project Health and Safety Officer - James K. Laffey	(412) 921-8678

2.7 EMERGENCY ROUTE TO HOSPITAL

Riverview Medical Center; 1 Riverview Plaza, Red Bank, New Jersey 07701

Directions from Mainside Base:

START 201 State Route 34 S
Colts Neck, NJ 07722-1902, US

END 1 Riverview Plz
Red Bank, NJ 07701-1864, US

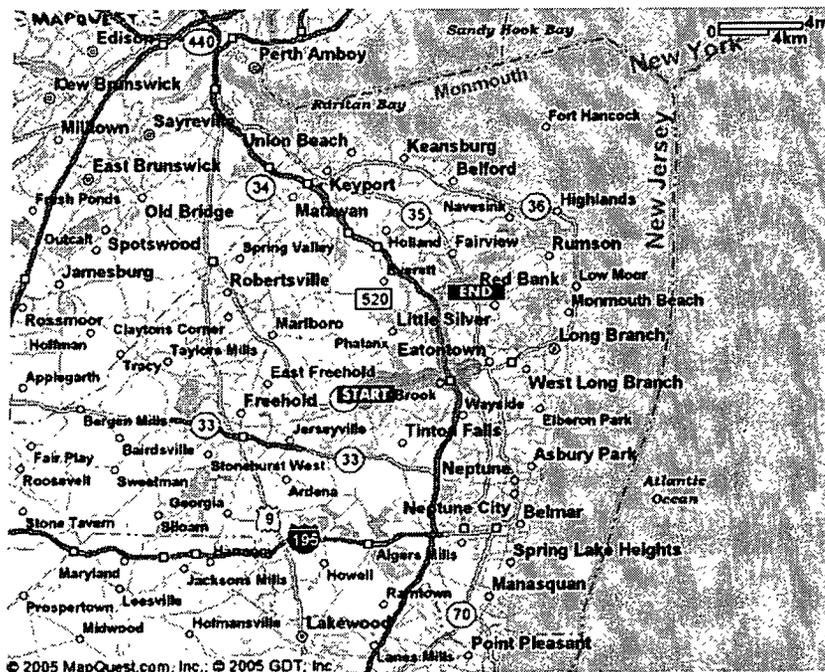
Total Est. Time: 20 minutes **Total Est. Distance:** 14.11 miles

	Distance
 1: Start out going NORTH on NJ-34 N toward NJ-34 S.	0.4 miles
 2: Merge onto NJ-18 S toward TINTON FALLS.	5.0 miles
 3: Merge onto NJ-36 E via EXIT 13B on the LEFT toward EATONTOWN/LONG BRANCH.	1.2 miles
 4: Make a U-TURN at GRANT AVE onto NJ-36 W (Portions toll).	1.2 miles
 5: Take the exit toward LOCAL/ALL EXITS/N. JERSEY.	0.1 miles
 6: Merge onto GARDEN STATE PKWY N (Portions toll).	3.3 miles
 7: Take the CR-520 exit- EXIT 109- toward RED BANK/LINCROFT.	0.2 miles
 8: Stay STRAIGHT to go onto HALF MILE RD.	0.5 miles
 9: Turn RIGHT onto W FRONT ST.	0.9 miles
 10: W FRONT ST becomes CR-10.	0.8 miles
 11: Turn LEFT onto WHARF AVE.	<0.1 miles
 12: Turn RIGHT onto RIVERVIEW PLZ.	<0.1 miles
END 13: End at 1 Riverview Plz, Red Bank, NJ 07701-1864 US	

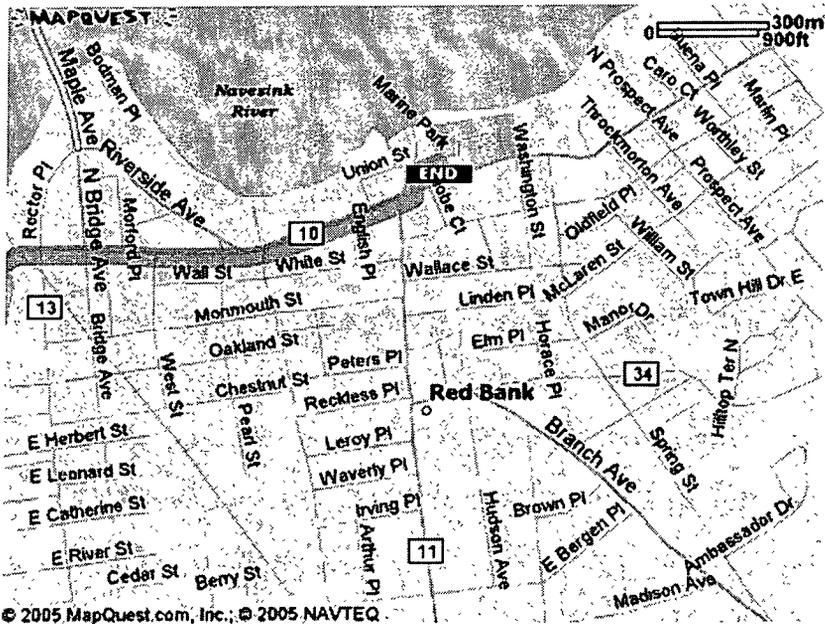
Figure 2-1

Route Map from Mainside Base NWS Earle to Riverside Medical Center

FULL ROUTE



DESTINATION



Directions from Waterfront Area:

START [800-800] State Route 36
Leonardo, NJ 07737, US

END 1 Riverview Plz
Red Bank, NJ 07701-1864, US

Distance

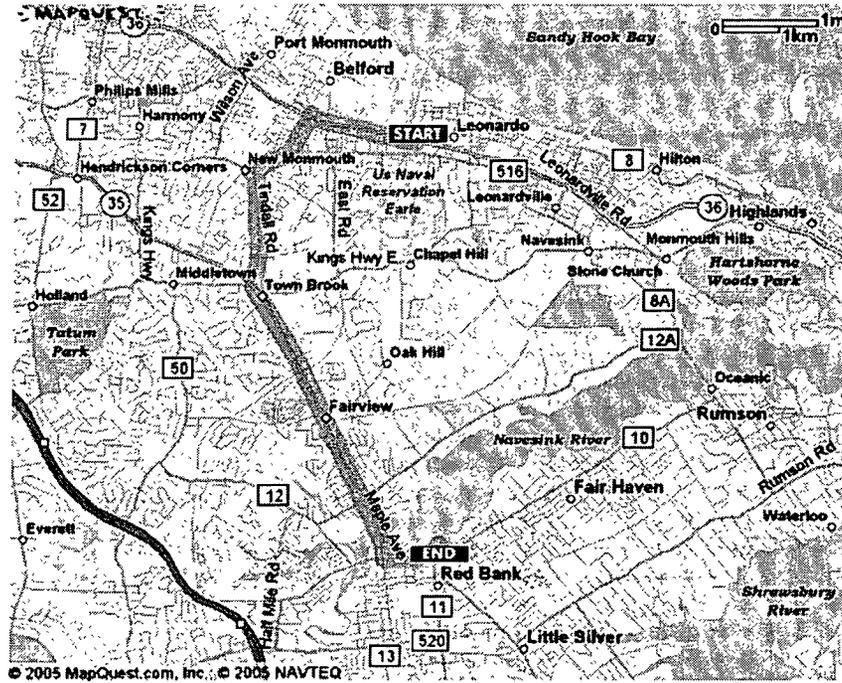
Total Est. Time: 16 minutes **Total Est. Distance:** 7.35 miles

- START** 1: Start out going WEST on NJ-36 toward SEA BREEZE AVE. 1.0 miles
-  2: Turn SLIGHT RIGHT. <0.1 miles
-  3: Turn LEFT onto MAIN ST. 0.4 miles
-  4: Turn SLIGHT RIGHT onto CR-516/LEONARDVILLE RD. Continue to follow CR-516. 0.4 miles
-  5: Turn LEFT onto TINDALL RD. 1.2 miles
-  6: Turn SLIGHT RIGHT. <0.1 miles
-  7: Turn LEFT onto NJ-35 S. 3.1 miles
-  8: Stay STRAIGHT to go onto N BRIDGE AVE. 0.1 miles
-  9: Turn LEFT onto CR-10/W FRONT ST. 0.5 miles
-  10: Turn LEFT onto WHARF AVE. <0.1 miles
-  11: Turn RIGHT onto RIVERVIEW PLZ. <0.1 miles
- END** 12: End at 1 Riverview Plz, Red Bank, NJ 07701-1864 US

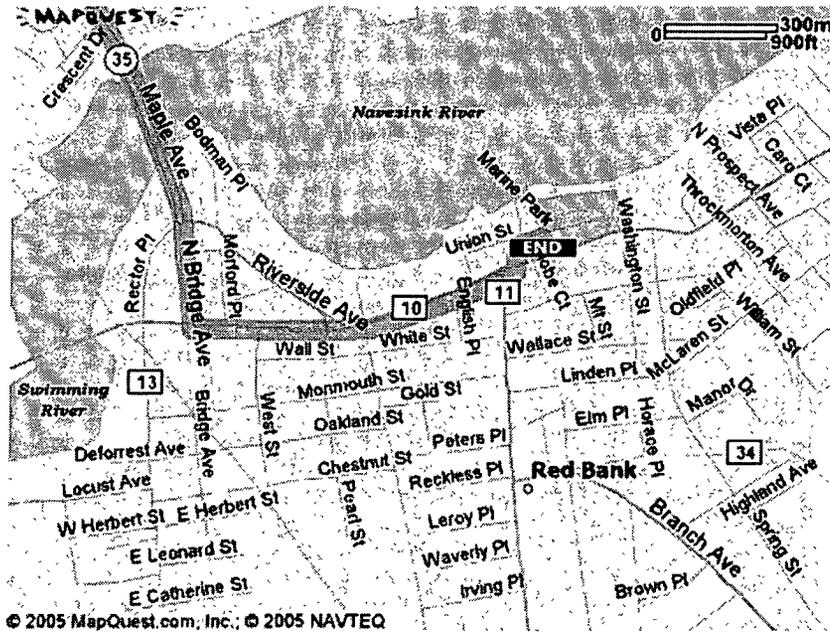
Figure 2-1a

Route Map from Waterfront Area NWS Earle to Riverside Medical Center

FULL ROUTE



DESTINATION



2.8 DECONTAMINATION PROCEDURES / EMERGENCY MEDICAL TREATMENT

During a site evacuation, decontamination procedures will be performed only if doing so does not further jeopardize the welfare of site workers. Decontamination will not be performed if the incident warrants immediate evacuation. However, it is unlikely that an evacuation would occur that would require workers to evacuate the site without first performing the necessary decontamination procedures.

2.9 INJURY/ILLNESS REPORTING

If TtNUS personnel are injured or develop an illness as a result of working on site, the TtNUS "Injury/Illness Procedure" (Attachment I) must be followed. Following this procedure it is necessary for documenting the information obtained at the time of the incident. Also, as soon as possible the NWS Earle Base contact or their supervisor must be informed of incident or accident that requires medical attention.

Pertinent information regarding allergies to medications or other special conditions will be provided to medical services personnel. This information is listed on Medical Data Sheets filed onsite (Attachment II). If an exposure to hazardous materials has occurred, provide information on the chemical, physical, and toxicological properties of the subject chemical(s) to medical service personnel.

2.10 PPE AND EMERGENCY EQUIPMENT

PPE normally available for the project will also be available for use in case of an emergency or spill incident.

A first aid kit, eye wash units, and fire extinguishers will be maintained on-site and shall be immediately available for use in case of an emergency.

FIGURE 2-2
EMERGENCY RESPONSE PROTOCOL

The purpose of this protocol is to provide guidance for the medical management of injury situations.

In the event of a personnel injury or accident:

- Rescue, when necessary, employing proper equipment and methods.
- Give attention to emergency health problems -- breathing, cardiac function, bleeding, and shock.
- Transfer the victim to the medical facility designated in this HASP by suitable and appropriate conveyance (i.e. ambulance for serious events)
- Obtain as much exposure history as possible (a Potential Exposure report is attached).
- If the injured person is a Tetra Tech NUS employee, call the medical facility and advise them that the patient(s) is/are being sent and that they can anticipate a call from the WorkCare physician. WorkCare will contact the medical facility and request specific testing which may be appropriate. WorkCare physicians will monitor the care of the victim. Site officers and personnel should not attempt to get this information, as this activity leads to confusion and misunderstanding.
- Call WorkCare at 1-800-455-6155 enter Extension 109, or follow the voice prompt for after hours and weekend notification, and be prepared to provide:
 - Any known information about the nature of the injury.
 - As much of the exposure history as was feasible to determine in the time allowed.
 - Name and phone number of the medical facility to which the victim(s) has/have been taken.
 - Name(s) of the involved Tetra Tech NUS, Inc. employee(s).
 - Name and phone number of an informed site officer who will be responsible for further investigations.
 - Fax appropriate information to WorkCare at (714) 456-2154.
- Contact Corporate Health and Safety Department (Matt Soltis) and Human Resources Manager (Marilyn Duffy) at 1-800-245-2730.

As data is gathered and the scenario becomes more clearly defined, this information should be forwarded to WorkCare.

WorkCare will compile the results of data and provide a summary report of the incident. A copy of this report will be placed in each victim's medical file in addition to being distributed to appropriately designated company officials.

Each involved worker will receive a letter describing the incident but deleting personal or individual comments. A personalized letter describing the individual findings/results will accompany this generalized summary. A copy of the personal letter will be filed in the continuing medical file maintained by WorkCare.

**FIGURE 2-2 (continued)
WORKCARE
POTENTIAL EXPOSURE REPORT**

Name: _____ Date of Exposure: _____
 Social Security No.: _____ Age: _____ Sex: _____
 Client Contact: _____ Phone No.: _____
 Company Name: _____

I. Exposing Agent

Name of Product or Chemicals (if known): _____

Characteristics (if the name is not known)

Solid Liquid Gas Fume Mist Vapor

II. Dose Determinants

What was individual doing? _____
 How long did individual work in area before signs/symptoms developed? _____
 Was protective gear being used? If yes, what was the PPE? _____
 Was their skin contact? _____
 Was the exposing agent inhaled? _____
 Were other persons exposed? If yes, did they experience symptoms? _____

III. Signs and Symptoms (check off appropriate symptoms)

Immediately With Exposure:

Burning of eyes, nose, or throat	Chest Tightness / Pressure
Tearing	Nausea / Vomiting
Headache	Dizziness
Cough	Weakness
Shortness of Breath	

Delayed Symptoms:

Weakness	Loss of Appetite
Nausea / Vomiting	Abdominal Pain
Shortness of Breath	Headache
Cough	Numbness / Tingling

IV. Present Status of Symptoms (check off appropriate symptoms)

Burning of eyes, nose, or throat	Nausea / Vomiting
Tearing	Dizziness
Headache	Weakness
Cough	Loss of Appetite
Shortness of Breath	Abdominal Pain
Chest Tightness / Pressure	Numbness / Tingling
Cyanosis	

Have symptoms: (please check off appropriate response and give duration of symptoms)
 Improved: _____ Worsened: _____ Remained Unchanged: _____

V. Treatment of Symptoms (check off appropriate response)

None: _____ Self-Medicating: _____ Physician Treated: _____

3.0 SITE BACKGROUND

3.1 SITE HISTORY AND LOCATION

The NWS Earle is located in the central coastal region of Monmouth County in Colts Neck, New Jersey, approximately 47 miles southeast of New York City. The facility was commissioned in 1943, and its primary mission is to supply ammunition to the naval fleet. The station consists of an inland 10,248-acre Main Base and a 706-acre Waterfront Area connected by a right-of-way controlled by the Navy. The Main Base encompasses magazine storage, production, and industrial support facilities as well as administrative and personnel support services. The Waterfront Area contains barricaded rail sidings for staging ordnance material, home porting facilities, and a pier/trestle complex.

3.1.1 Site 7 - Landfill South of "P" Barricades

The Site 7 Landfill South of "P" Barricades is a 5-acre site located in the Waterfront area. From 1965 to 1977, the site was used to dispose of municipal-type solid waste and waste from Waterfront industrial operations. Disposed materials consisted of munitions shipping wastes (dunnage, packing), shop wastes from the Waterfront Public Works Shop and the Munitions Handling Laboratory (glass, wood, and small quantities of waste paint, thinners, and solvents), and domestic refuse. The site was covered with loose sand quarried from the surrounding area.

During a site visit in January 2005, it was noted by TtNUS personnel that there were large white pine trees growing within the landfill area as well as heavy vegetation. An unpaved road borders the site to the north, west, and south. The ground surface slopes downward to the north from approximately 160 feet mean sea level (msl) near monitoring well MW7-03 to approximately 125 feet msl near monitoring well MW7-02. Groundwater generally flows toward the north, based on measured groundwater levels. Small marginal wetlands have formed in some areas on top of the landfill.

4.0 SCOPE OF WORK

This section describes the project tasks that will be performed at NWS Earle. Additionally, each task has been evaluated and the associated hazards and recommended control measures are listed in Table 5-1 of this HASP. The planned activities involved in this effort are presented in detail in the Environmental Sampling Plan developed for the project. If new tasks are to be performed at the site, Table 5-1 and this section will be modified accordingly.

The following is a list of activities that are proposed for the investigation:

- Mobilization and demobilization
- Groundwater sampling and water level gauging
- Decontamination of sampling equipment

These activities represent a summarization of the tasks as they apply to the scope and application of this HASP. If additional tasks are determined to be necessary, this HASP will be amended and a hazard evaluation of the additional tasks will be performed.

5.0 TASKS/HAZARDS/ASSOCIATED CONTROL MEASURES

Table 5-1 of this section summarizes the potential hazards, by task, and their associated control measures for the work addressed by this site specific HASP. This table is intended to assist project personnel in the recognition of hazards and recommended procedures necessary to minimize potential exposure or injuries related to those hazards. The table also assists field team members in determining which personal protective equipment (PPE) and decontamination procedures to be used, as well as, appropriate air monitoring techniques and other requirements/restrictions. The evaluation of each task provides detailed information including anticipated hazards, recommended control measures, air monitoring recommendations, required PPE, and decontamination measures. This table will be updated if the scope of work, contaminants of concern, or pertinent conditions change.

This HASP, including Table 5-1, is meant to be used in conjunction with the TtNUS Health and Safety Guidance Manual. This manual is designed to further explain supporting elements for any site-specific operations as required by 29 CFR 1910.120. The Guidance Manual should be referenced for additional information regarding air monitoring instrumentation, decontamination activities, emergency response, hazard assessments, hazard communication and hearing conservation programs, medical surveillance, PPE, respiratory protection, site control measures, standard work practices, and training requirements. Many of TtNUS's SOPs are also provided in the Guidance Manual.

Safe Work Permits will be issued (See Section 10.10 and Attachment III). The FOL and/or the SSO will use the elements defined in Table 5-1 as the primary reference. The Safe Work Permit is used to add additional site-specific information. In situations where the Safe Work Permit is more conservative than the direction provided in Table 5-1 due to the incorporation of site-specific elements, the Safe Work Permit will be followed.

5.1 GENERAL SAFE WORK PRACTICES

In addition to the task-specific work practices identified on Table 5-1 general safe work practices should be followed when conducting work involving known and unknown site hazards. These safe work practices establish a pattern of general precautions and measures for reducing risks associated with hazardous site operations.

- Refrain from eating, drinking, chewing gum or tobacco, taking medication, or smoking in contaminated or potentially contaminated areas or where the possibility for the transfer of contamination exists.

- Wash hands and face thoroughly upon leaving a contaminated or suspected contaminated area. A thorough shower and washing must be conducted as soon as possible if excessive skin contamination occurs.
- Avoid contact with potentially contaminated substances by walking around puddles, pools, mud, or other such areas. Avoid, whenever possible, kneeling on the ground or leaning or sitting on equipment.
- Be aware of the location of the nearest telephone and the emergency telephone numbers. See Section 2.0, Table 2-1.
- Rehearse unfamiliar operations prior to implementation.
- Maintain visual contact with each other and with other on-site team members by remaining in close proximity in order to assist each other in case of emergency.
- Establish appropriate safety zones including support, contamination reduction, and exclusion zones.
- Minimize the number of personnel and equipment in contaminated areas (such as the exclusion zone). Non-essential vehicles and equipment should remain within the Support Zone.
- Establish appropriate decontamination procedures for leaving the site.
- Observe coworkers for signs of toxic exposure and heat stress. Inform co-workers of potential symptoms of illness, such as headaches, dizziness, nausea, or blurred vision.
- Work areas must be kept free of ground clutter.

**TABLE 5-1
TASKS/HAZARDS/CONTROL MEASURES COMPENDIUM
NWS EARLE, COLTS NECK, NEW JERSEY
SITE 7 - LANDFILL SOUTH OF "P" BARRICADES**

Tasks/Operation/ Locations	Anticipated Hazards	Recommended Control Measures	Hazard Monitoring - Type and Action Levels	Personal Protective Equipment (Items in italics are deemed optional as conditions or the FOL or SSO require)	Decontamination Procedures
Mobilization/ Demobilization	Physical hazards: 1) Lifting (muscle strains and pulls) 2) Pinches and compressions 3) Slip, trips, and falls 4) Vehicular and foot traffic	1) Use equipment such as drum dollies or multiple personnel for heavy lifts. Use proper lifting techniques. 2) Use pinch bars or other equipment to keep hands from point of operation or other associated pinch points. 3) Preview work locations for unstable/uneven terrain. Barricade all ground openings from access closer than two feet from the edge. 4) Establish safe zones of approach and movement	Excessive chemical contaminant concentrations impacting field crews during this task is not anticipated.	Level D - (Minimum Requirements) - Standard field attire (sleeved shirt; long pants) - Steel toe safety shoes or boots - <i>Safety glasses</i> - <i>Hardhat (when overhead hazards exists, or identified as a operation requirement)</i> - <i>Reflective vest for high traffic areas</i> - <i>Hearing protection for high noise areas, or as directed by the Site Safety Officer.</i>	Not required
Groundwater sampling,	Chemical hazards: 1) Previous data identified low concentrations of the following compounds as contaminants of concern Metals and VOCs. Elevated airborne concentrations of site contaminants are not expected but if sustained readings are observed in the breathing zone site activities will be suspended. 2) Transfer of contamination into clean areas Physical hazards: 3) Lifting (strain/muscle pulls) 4) Slips, trips, and falls 5) Ambient temperature extremes (heat/cold stress) Natural hazards: 6) Insect/animal bites and stings, poisonous plants, etc. 7) Inclement weather	1) Use real-time monitoring instrumentation, action levels, and identified PPE to control exposures to potentially contaminated media (air, water, soils, etc.). Generation of dusts should be minimized. If airborne dusts are observed, area wetting methods may be used. If area wetting methods are not feasible, activities must be suspended until dust levels subside, or until an acceptable alternative control method can be selected. 2) Decontaminate all equipment and supplies between sampling locations and prior to leaving the site. See decontamination of heavy and sampling equipment for direction in this task. 3) Use machinery or multiple personnel for heavy lifts. Use proper lifting techniques (See Lifting Mobilization/Demobilization, Page 1 of 6, Table 5-1). 4) Preview work locations for unstable/uneven terrain. - Ruts, roots, and other tripping hazards should be eliminated from around the rotating apparatus to minimize trips and falls when approaching the rotating tooling. - Use multiple persons and small loads to pack sampling resources to remote locations. - Construct rope ladders and other engineered assistance for traversing hills and inclines > 45°. 5) Wear appropriate clothing for weather conditions. Provide acceptable shelter and liquids for field crews. 6) Avoid nesting areas, use repellents approved by the FOL. Report potential hazards to the SSO. 7) Suspend or terminate operations until directed otherwise by the SSO.	A direct reading Photoionization Detector (PID) with a 10.6 eV lamp or a Flameionization Detector (FID), will be used to screen samples and to detect the presence of any potential volatile organics. Source monitoring of the sample collection area will be conducted at regular intervals to be determined by the SSO. Positive sustained results at a source or downwind location(s) which may impact operations crew will require the following actions: - Monitor the breathing zone of at-risk and downwind employees. Any sustained readings (greater than 1 minute in duration) above background in the breathing zone of the at-risk employees requires site activities to be suspended and site personnel to retreat to an unaffected area. - Work may only resume if airborne readings in worker breathing zone return to background. If elevated readings in worker breathing zone persist, the PHSO and HSM will be contacted to determine necessary actions and levels of protection.	Level D protection will be utilized for the following sampling activities. Minimum Requirements - Standard field attire (Sleeved shirt; long pants) - Steel toe safety shoes or boots - Surgical style gloves (<i>double-layered if necessary</i>) - <i>Reflective vest for high traffic areas</i> - <i>Tyvek coveralls and disposable boot covers if surface contamination is present or if the potential for soiling work attire exists.</i> - <i>Hearing protection for high noise areas, or as directed on an operation by operation scenario.</i> Note: The Safe Work Permit(s) for this task (See Attachment III) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.	Personnel Decontamination will consist of a soap/water wash and rinse for reusable outer protective equipment (boots, gloves, PVC splash suits, as applicable). The decon function will take place at an area adjacent to the site activities. This procedure will consist of: - Equipment drop - Soap/water wash and rinse of outer boots and gloves, as applicable - Soap/water wash and rinse of the outer splash suit, as applicable - Disposable PPE will be removed and bagged. Sampling soils, the following provisions will apply - Upon completion of the sampling dedicated trowels, hand augers, shovels, etc. will be bagged for transport back to the central decontamination area. - PPE (gloves) will be removed and also bagged for disposal. - Handi-Wipes or similar product will be used to clean hands prior to moving to the next location. Equipment Decontamination All equipment used in remote sampling locations will be brought back to the central decontamination area for decontamination and re-use or decontamination and gross removal of contamination prior to disposal. Dedicated sampling equipment will be disposed of as IDW. Note: Decontamination of equipment (sampling and hand tools) will proceed as indicated in the Sampling and Analysis Plan and/or Work Plan.
Decontamination of Sampling Equipment	Chemical hazards 1) Based on past analytical data, potential site contaminants include low levels of SVOCs (including constituents of petroleum), VOCs (including gasoline and BETX). Refer to Section 6.0 for a list of potential and representative site contaminants. See individual Safe Work Permits contained in Attachment IV for specific contaminants of concern associated with particular sites and site activities. 2) Decontamination fluids - Liquinox (detergent), acetone or isopropanol Physical hazards 3) Lifting (strain/muscle pulls) 7) Slips, trips, and falls Natural hazards 8) Ambient temperature extremes (heat stress) 9) Inclement weather	1) and 2) Use protective equipment to minimize contact with site contaminants and hazardous decontamination fluids. Obtain manufacturer's MSDS for any decontamination fluids used onsite. These must be used in well-ventilated areas, such as outdoors. Use appropriate PPE as identified on MSDS. All chemicals used must be listed on the Chemical Inventory for the site, and site activities must be consistent with the Hazard Communication section of the Health and Safety Guidance Manual (Section 5). 3) Use multiple persons where necessary for lifting and handling sampling equipment for decontamination purposes. 4) Wear hearing protection when operating pressure washer. 5) Use eye and face protective equipment when operating pressure washer. All other personnel must be restricted from the area. 6) Traffic and equipment considerations are to include the following: - Establish safe zones of approach. - All equipment shall be equipped with movement warning systems. - All activities are to be conducted consistent with the Base requirements. 7) Preview work locations for unstable/uneven terrain. 8) Personnel must be aware of the conditions of heat/cold stress and take appropriate preventive measures to prevent the illness. For example, drink caffeine-free liquids to replace body fluids lost in sweating if working under hot conditions, take rest breaks in appropriate areas (shaded if conditions are hot, and warm break areas if conditions are cold). See Section 4 of the TiNUS Health and Safety Guidance Manual for additional information on heat stress and cold stress. 9) Suspend or terminate operations until directed otherwise by SSO. -	Use visual observation, and real-time monitoring instrumentation to ensure all equipment has been properly cleaned of contamination and dried. After decon is completed, screen equipment with a PID/FID. If any elevated readings (i.e., above background) are observed, perform decon again and re-screen. Repeat until no elevated PID/FID readings are noted.	Note: Consult MSDS for PPE guidance. Otherwise, observe the following. Level D Minimum requirements - - Standard field attire (Long sleeve shirt; long pants) - Safety shoes (Steel toe/shank) - Nitrile outer gloves - Safety glasses Note: The Safe Work Permit(s) for this task (see Attachment III) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.	Personnel Decontamination will consist of a soap/water wash and rinse for reusable outer protective equipment (boots, gloves, PVC splash suits, as applicable). The decontamination function will take place at an area adjacent to the site activities. This procedure will consist of: - Equipment drop - Soap/water wash and rinse of outer boots and gloves, as applicable - Soap/water wash and rinse of the outer splash suit, as applicable - Disposable PPE will be removed and bagged. Sampling Equipment Decontamination will be decontaminated as per the requirements in the Sampling and Analysis Plan and/or Work Plan. MSDS for any decon solutions (Alconox, isopropanol, etc.) will be obtained and used to determine proper handling / disposal methods and protective measures (PPE, first-aid, etc.). All equipment used in the exclusion zone will require a complete decontamination between locations and prior to removal from the site.

6.0 HAZARD ASSESSMENT

The following section provides information regarding the chemical, physical, and natural hazards anticipated to be present during the activities to be conducted. Table 6-1 provides information related to chemical constituents that have been identified by analysis or are suspected to be present at the site based on historical data. Specifically, toxicological information, exposure limits, symptoms of exposure, physical properties, and air monitoring and sampling data are discussed in the table.

6.1 CHEMICAL HAZARDS

The potential health hazards associated with the Site 7 Groundwater Sampling at NWS Earle include inhalation, ingestion, and dermal contact of various contaminants that may be present in shallow and deep groundwater. However, given the nature of the tasks to be completed, significant chemical exposures are unlikely. Based on prior available analytical data, detectable airborne concentrations are unlikely to be present in worker breathing zones. The following have been identified as the primary classes of hazards for these contaminants:

- Volatile Organic Compounds (VOCs), from landfill leachate, specifically benzene derivatives and chlorinated aliphatics such as methane.
- Metals, from landfill leachate, specifically aluminum, iron, manganese, and thallium.

Table 6-1 provides information on the toxicological, chemical, and physical properties of these substances. It is anticipated that the greatest potential for exposure to site contaminants is during intrusive activities (drilling, soil sampling, etc.). Exposure to these compounds is most likely to occur through ingestion and inhalation of contaminated soil or water, or hand-to-mouth contact during soil disturbance activities. For this reason, PPE and basic hygiene practices (washing face and hands before leaving site) will be extremely important. Inhalation exposure will be avoided by using appropriate engineering controls, work practices, and/or PPE where necessary.

TABLE 6-1
CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA
 Page 1 of 3

Substance	CAS No	Air Monitoring/Sampling Information	Exposure Limits	Warning Property Rating	Physical Properties	Health Hazard Information
Benzene	71-43-2	PID: I.P 9.24 eV, 100% response with PID and 10.2 eV lamp. FID: 150% relative response ratio with FID.	Air sample using charcoal tube; carbon disulfide desorption; Sampling and analytical protocol in accordance with OSHA 07 or NIOSH Method #1500. OSHA: 1 ppm ACGIH: 10 ppm NIOSH: 0.1 ppm IDLH: 500 ppm	Inadequate - Odor threshold 34-199 ppm. OSHA accepts the use of air-purifying respirators with organic vapor cartridge up to 10 ppm despite the inadequate warning properties providing cartridges are changed at the beginning of each shift. Recommended gloves: Butyl/neoprene blend - >8.00 hrs; Silver shield as a liner - >8.00 hrs; Viton - >8.00 hrs	Boiling Pt: 176°F; 80°C Melting Pt: 42°F; 5.5°C Solubility: 0.07% Flash Pt: 12°F; -11°C LEL/LFL: 1.3% UEL/UFL: 7.9% Vapor Density: 2.77 Vapor Pressure: 75 mmHg Specific Gravity: 0.88 Incompatibilities: Strong oxidizers, fluorides, perchlorates, and acids Appearance and Odor: Colorless to a light yellow liquid with an aromatic odor	Overexposure may result in irritation to the eyes, nose, throat, and respiratory system. CNS effects include giddiness, lightheadedness, headaches, staggered gait, fatigue, and lassitude and depression. Additional effects may include nausea. Long duration exposures may result in respiratory collapse. Regulated as an OSHA carcinogen. May cause damage to the blood forming organs and may cause a form of cancer called leukemia.
Aluminum	7429-90-5	Particulate form - unable to be detected by PID/FID.	Air sample using a cellulose ester membrane filter (particulate filter); atomic absorption (Method #7013) or ICP (Method #7300). Sampling and analytical protocol shall proceed in accordance with NIOSH Methods #7013 and #7300 as applicable. OSHA: 15 mg/m3 Total dust, 5 mg/m3 Respirable fraction NIOSH: 10 mg/m3 Total dust, 5 mg/m3 Respirable fraction ACGIH: 10 mg/m3	Particulate form - No identifiable warning properties to indicate presence and thereby detection. Employ air purifying respiratory protection suitable for dust and fume. Organic vapor acid gases with HEPA filter. Recommended gloves: This is in the particulate form. Therefore any glove suitable to prevent skin contact (Nitrile has been the one most widely used for the other substances).	Boiling Pt: 4452°F; 2450°C Melting Pt: 1220°F; 660°C Solubility: Insoluble Flash Pt: Nonflammable LEL/LFL: Nonflammable UEL/UFL: Nonflammable It should be noted that finely divided powders or dust when airborne becomes moderately flammable/explosive when exposed to heat, flame, or powerful oxidizers Vapor Density: Not available Vapor Pressure: 1 mm @ 2343°F; 1284 °C Specific Gravity: 2.702 @ 77°F; 25°C Incompatibles: Acids, alkalis, oxidizers, halogens and halocarbons, alcohols Appearance and odor: silvery gray ductile, lustrous metal	Inhalation of finely divided powders or dusts may result in difficulty in breathing, coughing, and has been reported to cause pulmonary fibrosis. This malady known as "Shavers disease" is a form of benign pneumoconiosis.

Table 6-1
Chemical, Physical, and Toxicological Data
Page 2 f 3

Substance	CAS No	Air Monitoring/Sampling Information	Exposure Limits	Warning/Property Rating	Physical Properties	Health Hazard Information	
Manganese	7439-96-5 as Mn	Particulate form - This substance is unable to be detected by PID/FID.	Air sample using particulate filter; acid desorption, ICP detection. Sampling and analytical protocol shall proceed in accordance with NIOSH Method #7300.	OSHA: Ceiling 5 mg/m3 as a fume 1 mg/m3 NIOSH: 1 mg/m3 for dust and fume 3 mg/m3 as a STEL ACGIH: 5 mg/m3 for dust 1 mg/m3 for fume IDLH: 500 mg/m3	No identifiable warning properties to indicate presence and thereby detection. Recommended APR Cartridge: Suitable for dust and fume. Organic vapor acid gases with HEPA filter. Recommended gloves: This is in the particulate form. Therefore any glove suitable to prevent skin contact (Nitrile has been the one most widely used for the other substances).	Boiling Pt: 3452°F; 1900°C Melting Pt: 2300°F; 1260°C Solubility: Insoluble Flash Pt: Not available (Airborne dust may burn or explode when exposed to heat, flame, or incompatible chemicals. This substance is considered a combustible solid.) LEL/LFL: Not available UEL/UFL: Not available Vapor Density: Not available Vapor Pressure: 1 mmHg @ 2358°F; 1292°C Specific Gravity: 7.20 Incompatibilities: Strong oxidizers, halogens, and nitrates. Will react with water to produce hydrogen gas. Appearance and odor: Silvery solid or reddish-gray, odorless	Overexposure to this product may result in Central Nervous System and pulmonary effects by inhalation. Symptoms may include disturbances in gait and speech, sleepiness, mental confusion, stolid, mask like face, muscular twitching varying from tremors to coarse rhythmical movements of the extremities accompanied by cramps. Symptoms are described as post-encephalitic Parkinsonism. Additionally dry throat, tightness in the chest, dyspnea, rales, flu-like symptoms low back pain, and vomiting.
Thallium	007440-28-0	Particulate form - This substance is unable to be detected by PID/FID.	Air sample using particulate filter; acid desorption, ICP detection. Sampling and analytical protocol shall proceed in accordance with NIOSH Method #7300.	OSHA: 0.1 mg/m3 NIOSH: 0.1 mg/m3 ACGIH: 0.1 mg/m3 IDLH: 15 mg/m3	No identifiable warning properties to indicate presence and thereby detection. Recommended APR Cartridge: Suitable for dust and fume. Organic vapor acid gases with HEPA filter. Recommended gloves: This is in the particulate form. Therefore any glove suitable to prevent skin contact (Nitrile has been the one most widely used for the other substances).	Properties vary depending upon the specific soluble thallium compound. Appearance and odor vary depending upon the specific soluble thallium compound.	Thallium is rapidly and well absorbed through the gastrointestinal and respiratory tracts and is also taken up through the skin. Symptoms of thallium intoxication are often diffuse and initially include anorexia, nausea, vomiting, metallic taste, salivation, retrosternal and abdominal pain and occasionally gastrointestinal Hemorrhage (blood in feces). Later, constipation is commonly seen and may be resistant to treatment, thus interfering with antidotal treatment.

Table 6-1
 Chemical, Physical, and Toxicological Data
 Page 3 of 3

Substance	CAS No	Air Monitoring/Sampling Information	Exposure Limits	Warning Property Rating	Physical Properties	Health Hazard Information
Methane	74-82-8	<p>LEL/O2 meter</p> <p>PID: I.P. 12.51 eV, no response.</p> <p>FID: When calibrated to methane, the relative response ration is 100%. When calibrated to propane 55%.</p>	<p>Air sample using -- Color-Indicating Detector Tube Or Diffusion Tubes</p> <p>OSHA: none</p> <p>ACGIH: simple asphyxiant</p> <p>NIOSH: none</p> <p>IDLH: none</p>	<p>Inadequate - Wear a NIOSH-approved full-face positive pressure supplied-air respirator or a self-contained breathing apparatus (SCBA).</p>	<p>Boiling Pt: -259°F; -161.6°C</p> <p>Melting Pt: -296.5°F; -182.5°C</p> <p>Solubility: 3.5.1ml/100ml @ °F; 17°C (slight)</p> <p>Flash Pt: -213°F; -136.11°C</p> <p>LEL/LFL: 5%</p> <p>UEL/UFL: 15%</p> <p>Vapor Density: 0.55</p> <p>Vapor Pressure: 258574 mmHg @ 37.8 C</p> <p>Specific Gravity: 0.425</p> <p>Incompatibilities: Reacts violently with powerful oxidizers such as bromine pentafluoride, chlorine trifluoride, chlorine, fluorine, iodine heptafluoride, dioxygenyl tetrafluoroborate, dioxygen difluoride, trioxxygen difluoride and liquid oxygen. It also reacts violently with chlorine dioxide and nitrogen trifluoride. It is incompatible with halogens or inter-halogens. It reacts with bromine in light (explosively in direct sun-light).</p> <p>Appearance and Odor: Colorless, odorless, tasteless, extremely flammable gas.</p>	<p>A simple asphyxiant that can displace oxygen. Symptoms of exposure include asphyxiation. Other symptoms include systemic effects due to oxygen deficiency such as nausea, pressure on the forehead and eyes, and unconsciousness. Exposure may cause dizziness, difficult breathing. Inhalation may cause diarrhea, loss of appetite, disorientation, headache, excitation, rapid respiration, drowsiness, anesthesia, other central nervous system effects such as depression, and respiratory arrest.</p>

6.2 PHYSICAL HAZARDS

The physical hazards that may be present during the performance of site activities are summarized below:

- Slips, trips, and falls
- Lifting (strain/muscle pulls)
- Ambient temperature extremes (heat or cold stress)
- Eye and foot hazards
- Pinches and compressions
- Contact with sharp objects (glass, metal, etc.)
- Vehicular and foot traffic

These physical hazards are discussed in Table 5-1 as applicable to each site task. Furthermore, many of these hazards are discussed in detail in Section 4.0 of the Health and Safety Guidance Manual. Specific discussion on some of these hazards is presented below.

6.2.1 Ambient Temperature Extremes

Overexposure to high or low ambient temperatures (heat or cold stress) may exist during performance of this work depending on the project schedule. Work performed when ambient temperatures exceed 70°F may result in varying levels of heat stress (heat rash, heat cramps, heat exhaustion, and/or heat stroke) depending on variables such as wind speed, humidity, and percent sunshine, as well as physiological factors such as metabolic rate and skin moisture content. Additionally, work load and level of protective equipment will affect the degree of exposure. Site personnel will be encouraged to drink plenty of fluids to replace those lost through perspiration. Work performed when ambient temperatures are below 40°F may result in varying levels of cold stress (tremors, frostbite, wind burn, etc.) depending on variables such as wind speed, humidity, and percent sunshine, as well as physiological factors such as metabolic rate and skin moisture content. Additional information such as Work-Rest Regimens and personnel monitoring may be found in Section 4.0 of the Health and Safety Guidance Manual. The SSO will recommend additional heat or cold stress control measures as they are deemed necessary per American Conference of Governmental Industrial Hygienists (ACGIH) guidelines.

6.3 NATURAL HAZARDS

6.3.1 Insect/Animal Bites and Stings, Poisonous Plants, etc.

Contact with poisonous plants and bites or stings from poisonous insects are other natural hazards that must be considered. Site personnel who are allergic to stinging insects such as bees, wasps, and hornets must be particularly careful because severe illness and death may result from allergic reactions. As with a medical condition or allergy, information regarding the condition must be listed on the Medical Data Sheet and the FOL and SSO must be notified.

Tick

During warm months (spring through early fall), tick-borne Lyme disease may pose a potential health hazard. The longer a disease-carrying tick remains attached to the body, the greater the potential for contracting the disease. Wearing long sleeved shirts and long pants (tucked into boots) as well as performing frequent body checks will prevent long-term attachment. Site first aid kits should be equipped with medical forceps and rubbing alcohol to assist in tick removal. For information regarding tick removal procedures and symptoms of exposure consult Section 4.0 of the Health and Safety Guidance Manual.

West Nile Virus

West Nile Virus (WNV) can spread to people and animals through the bite of an infected mosquito. Mosquitoes acquire the virus from infected birds. Infected mosquitoes then transmit the West Nile virus to humans and animals when biting (or taking a blood-meal). West Nile encephalitis is NOT transmitted from person-to-person. There is no evidence that a person can get the virus from handling live or dead infected birds. However, avoid bare-handed contact when handling any dead animals, including dead birds. Ticks have not been implicated as vectors of West Nile-like virus.

Mild infections are common and include fever, headache, and body aches, often with skin rash and swollen lymph glands. More severe infection is marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, occasional convulsions, paralysis and, rarely, death (especially in the elderly and very young). The incubation period of West Nile encephalitis is usually 3 to 12 days. There is no specific therapy or vaccine against West Nile encephalitis. The vast majority of people who are bitten by an infected mosquito will develop only mild symptoms, if any.

Additional information can be obtained from the Monmouth County Mosquito Extermination Commission at (723) 542-3630.

Precautions

- Limit outdoor activities during peak mosquito times - at dusk and dawn.
- Avoid standing water
- Wear long-sleeved shirts and long pants whenever you are outdoors.
- Apply insect repellent to exposed skin according to manufacturer instruction. An effective repellent will contain 20% to 30% DEET (N,N-diethyl-meta-toluamide). Avoid products containing more than 30% DEET.
- Spray clothing with repellents containing permethrin or DEET, mosquitoes may bite through thin clothing.

6.3.2 Inclement Weather

Many of the project tasks will be performed outdoors. As a result, inclement weather may be encountered. If adverse weather (e.g., electrical storms, hurricanes, etc.) conditions arise, the FOL and/or SSO will temporarily suspend or terminate activities until hazardous conditions cease.

7.0 AIR MONITORING

Direct reading instruments will be used at the site to detect and evaluate the presence of site contaminants and other potentially hazardous conditions. As a result, specific air monitoring measures and requirements are established in Table 5-1 pertaining to the hazards and tasks of an identified operation. Additionally Section 1.0, the Health and Safety Guidance Manual contains detailed information regarding direct reading instrumentation, as well as general calibration procedures of various instruments.

7.1 INSTRUMENTS AND USE

Instruments will be used primarily to monitor source points and worker breathing zone areas while observing instrument action levels. Action levels are discussed in Table 5-1 as they may apply to a specific task or location.

7.1.1 Photoionization Detector and Flame Ionization Detector

To evaluate the presence of airborne concentrations of VOCs a Photoionization Detector (PID) using a lamp energy of 10.6 electron volts (eV) or higher will be used. This instrument will be used to monitor potential source areas and to screen the breathing zones of employees during site activities. The PID has been selected because it is capable of detecting the organic vapors of concern (Note: A Flame Ionization Detector [FID] may be used as an alternative to the PID). This instrument will only detect the presence of ionizing contaminants. This instrument will not detect the explosive compounds and metals.

Before starting field activities, the background levels of the site must be determined and noted. Daily background readings will be taken away from areas of potential contamination. These readings, influencing conditions (weather, temperature, humidity, etc.), and site location must be documented in the field operations logbook or other site documentation (e.g., sample log sheet).

7.1.2 Hazard Monitoring Frequency

Table 5-1 presents the frequencies in which hazard monitoring will be performed as well as the action levels that will initiate the use of elevated levels of protection. The SSO may decide to increase these frequencies based on instrument responses and site observations. The frequency in which monitoring is performed will not be reduced without the prior consent of the PHSO or HSM.

7.2 INSTRUMENT MAINTENANCE AND CALIBRATION

Hazard monitoring instruments will be maintained and pre-field calibrated by the TtNUS Equipment Manager. Operational checks and field calibration will be performed on instruments each day before use. Field calibration will be performed on instruments according to manufacturer's recommendations (for example, the PID must be field calibrated daily and an additional field calibration must be performed at the end of each day to determine significant instrument drift). These operational checks and calibration efforts will be performed in a manner that complies with the employees health and safety training, the manufacturer's recommendations, and with the applicable manufacturer SOP (copies of which can be found in the Health and Safety Guidance Manual that will be maintained onsite for reference). Calibration efforts must be documented. Figure 7-1 is provided for documenting these calibration efforts. This information may instead be recorded in a field operations logbook, provided that the information specified in Figure 7-1 is recorded. This required information includes the following:

- Date calibration was performed
- Individual calibrating the instrument
- Instrument name, model, and serial number
- Relevant instrument settings and resultant readings (before and after) calibration
- Identification of the calibration standard (lot no., source concentration, supplier)
- Relevant comments or remarks

8.0 TRAINING/MEDICAL SURVEILLANCE REQUIREMENTS

8.1 INTRODUCTORY/REFRESHER/SUPERVISORY TRAINING

This section is included to specify health and safety training and medical surveillance requirements for both TtNUS and subcontractor personnel participating in site activities.

8.1.1 Requirements for TtNUS Personnel

TtNUS personnel must complete 40 hours of introductory hazardous waste site training before working at the OB/OD Unit at NWS Earle. Additionally, TtNUS personnel who have had introductory training more than 12 months before site work must have completed 8 hours of refresher training within the past 12 months before being cleared for site work. In addition, 8-hour supervisory training in accordance with 29 CFR 1910.120(e)(4) will be required for site supervisory personnel.

Documentation of TtNUS introductory, supervisory, and refresher training as well as site-specific training will be maintained onsite. Copies of certificates or other official documentation will be used to fulfill this requirement.

TtNUS will conduct a pre-activities training session before initiating site work. Additionally, a brief meeting will be held daily to discuss operations planned for that day. At the end of the workday, a short meeting will be held to discuss the operations completed and problems encountered. This activity will be supported through the use of Safe Work Permits (See Section 10.10).

8.1.2 Requirements for Subcontractors

TtNUS subcontractor personnel must have completed introductory hazardous waste site training or equivalent work experience as defined in OSHA Standard 29 CFR 1910.120(e) and 8 hours of refresher training meeting the requirements of 29 CFR 1910.120(e)(8) before performing field work at NWS Earle. TtNUS subcontractors must certify that each employee has had such training by sending TtNUS a letter on company letterhead containing the information in the example letter provided in Figure 8-1 and by providing copies of certificates for subcontractor personnel participating in site activities.

FIGURE 8-1

Training Letter

The following statements must be typed on company letterhead, signed by an officer of the company, and accompanied by copies of personnel training certificates:

LOGO
XYZ CORPORATION
555 E. 5th Street
Nowheresville, Kansas 55555

Month, day, year

Mr. Russell E. Turner
Project Manager
Tetra Tech NUS, Inc.
600 Clark Avenue, Suite 3
King of Prussia, PA 19406-1433

Subject: HAZWOPER Training for NWS Earle, New Jersey

Dear Mr. Turner:

As an officer of XYZ Corporation, I hereby state that I am aware of the potential hazardous nature of the subject project. I also understand that it is our responsibility to comply with applicable occupational safety and health regulations, including those stipulated in Title 29 of the Code of Federal Regulations (CFR), Parts 1900 through 1910 and Part 1926.

I also understand that Title 29 CFR 1910.120, titled "Hazardous Waste Operations and Emergency Response," requires an appropriate level of training for certain employees engaged in hazardous waste operations. In this regard, I hereby state that the following employees have had 40 hours of introductory hazardous waste site training or equivalent work experience as requested by 29 CFR 1910.120(e) and have had 8 hours of refresher training as applicable and as required by 29 CFR 1910.120(e)(8) and that site supervisory personnel have had training in accordance with 29 CFR 1910.120(e)(4).

LIST FULL NAMES OF EMPLOYEES AND THEIR SOCIAL SECURITY NUMBERS HERE.

Should you have questions, please contact me at (555) 555-5555.

Sincerely,

(Name and Title of Company Officer)

8.2 SITE-SPECIFIC TRAINING

TtNUS will provide site-specific training to site personnel who will perform work on this project. Site-specific training will also be provided to other personnel [U.S. Department of Defense (DoD), Environmental Protection Agency (EPA), etc.] who may enter the site to perform functions that may or may not be directly related to site operations. Site-specific training will include:

- Names of designated personnel and alternates responsible for site safety and health
- Safety, health, and other hazards present onsite
- Use of PPE
- Work practices to minimize risks from hazards
- Safe use of engineering controls and equipment
- Medical surveillance requirements
- Signs and symptoms of overexposure
- Contents of the HASP
- Emergency response procedures (evacuation and assembly points)
- Spill response procedures
- Review of the contents of relevant MSDSs
- Review of Safe Work Permits

Site-specific documentation will be established through the use of Figure 8-2. Site personnel and visitors must sign this document upon receiving site-specific training.

8.3 MEDICAL SURVEILLANCE

8.3.1 Medical Surveillance Requirements for TtNUS Personnel

TtNUS personnel participating in project field activities will have had a physical examination meeting the requirements of the TtNUS medical surveillance program and will be medically qualified to perform hazardous waste site work using respiratory protection.

Documentation for medical clearances will be maintained in the TtNUS Pittsburgh office and made available, as necessary.

8.3.2 Medical Surveillance Requirements for Subcontractors

Subcontractors are required to obtain a certificate of their ability to perform hazardous waste site work and to wear respiratory protection. The "Subcontractor Medical Approval Form" provided in Figure 8-3 shall be used to satisfy this requirement, providing it is properly completed and signed by a licensed physician.

Subcontractors who have a company medical surveillance program meeting the requirements of paragraph (f) of OSHA 29 CFR 1910.120 can substitute "Subcontractor Medical Approval Form" with a letter on company letterhead containing the information in the example letter presented in Figure 8-4 of this HASP.

8.3.3 Additional Requirements for Field Personnel

Each field team member (including subcontractors) and visitors entering the exclusion zone(s) shall be required to complete and submit a copy of the Medical Data Sheet presented in Appendix II. This shall be provided to the SSO, before participating in site activities. The purpose of this document is to provide site personnel and emergency responders with additional information that may be necessary to administer medical attention.

8.4 SUBCONTRACTOR EXCEPTIONS

Subcontractors who will not enter the exclusion zone during operation and whose activities involve no potential for exposure to site contaminants will not be required to meet the requirements for training/medical surveillance other than site-specific training as stipulated in Section 8.2.

FIGURE 8-3

Subcontractor Medical Approval Form

For employees of _____
Company Name

Participant Name: _____ Date of Exam: _____

Part A

The above-named individual has:

- 1. Undergone a physical examination in accordance with OSHA Standard 29 CFR 1910.120, paragraph (f), and was found to be medically -
 - qualified to perform work at the NWS Earle work site
 - not qualified to perform work at the NWS Earle work site

and,
- 2. Undergone a physical examination in accordance with OSHA 29 CFR 1910.134(b)(10) and was found to be medically -
 - qualified to wear respiratory protection
 - not qualified to wear respiratory protection

My evaluation has been based on the following information, as provided to me by the employer.

- A copy of OSHA Standard 29 CFR 1910.120 and appendices.
- A description of the employee's duties as they relate to the employee's exposures.
- A list of known/suspected contaminants and their concentrations (if known).
- A description of any PPE used or to be used.
- Information from previous medical examinations of the employee that is not readily available to the examining physician.

Part B

I, _____, have examined _____
Physician's Name (print) Participant's Name (print)

and have determined the following information:

FIGURE 8-3

Subcontractor Medical Approval Form (continued)

1. Results of the medical examination and tests (excluding findings or diagnoses unrelated to occupational exposure):

2. Any detected medical conditions that would place the employee at increased risk of material impairment of the employee's health:

3. Recommended limitations on the employee's assigned work:

I have informed this participant of the results of this medical examination and any medical conditions that require further examination or treatment.

Based on the information provided to me, and in view of the activities and hazard potentials involved at the NWS Earle work site, this participant

- may
 may not

perform his/her assigned task.

Physician's Signature _____

Address _____

Phone Number _____

NOTE: Copies of test results are maintained and available at:

Address

FIGURE 8-4

Medical Surveillance Letter

The following statements must be typed on company letterhead and signed by an officer of the company:

LOGO
XYZ CORPORATION
555 E. 5th Street
Nowheresville, Kansas 55555

Month, day, year

Mr. Russell E. Turner
Project Manager
Tetra Tech NUS, Inc.
600 Clark Avenue, Suite 3
King of Prussia, PA 19406-1433

Subject: Medical Surveillance for NWS Earle, New Jersey

Dear Mr. Turner:

As an officer of XYZ Corporation, I hereby state that the persons listed below participated in a medical surveillance program meeting the requirements contained in paragraph (f) of Title 29 of the Code of Federal Regulations (CFR), Part 1910.120, titled "Hazardous Waste Operations and Emergency Response: Final Rule." I further state that the persons listed below have had physical examinations under this program within the past 12 months and that they have been cleared by a licensed physician to perform hazardous waste site work and to wear positive- and negative-pressure respiratory protection. I also state that, to my knowledge, no person listed below has any medical restriction that would preclude him/her from working at the NWS Earle, New Jersey site.

LIST FULL NAMES OF EMPLOYEES AND THEIR SOCIAL SECURITY NUMBERS HERE.

Should you have questions, please contact me at (555) 555-5555.

Sincerely,

(Name and Title of Company Officer)

9.0 SPILL CONTAINMENT PROGRAM

9.1 SCOPE AND APPLICATION

It is not anticipated that quantities of bulk potentially hazardous materials (greater than 55 gallons) will be handled during site activities conducted as part of the scope of work. Waste water (decontamination, purge, and development) generated as part of site activities will be returned back to the ground surface in the area of the monitoring well being sampled.

10.0 SITE CONTROL

This section outlines the means by which TtNUS will delineate work zones and use these work zones in conjunction with decontamination procedures to prevent the spread of contaminants into previously unaffected areas of the site. It is anticipated that a three-zone approach will be used during work at this site. This three-zone approach will use an exclusion zone, a contamination reduction zone, and a support zone. It is also anticipated that this control measure will be used to control access to site work areas. Use of such controls will restrict the general public, minimize the potential for the spread of contaminants, and protect individuals who are not cleared to enter work areas.

10.1 EXCLUSION ZONE

The exclusion zone will be considered those areas of the site of known or suspected contamination. It is not anticipated that significant amounts of surface contamination are present in the proposed work areas of this site. It is anticipated that this will remain so until/unless contaminants are brought to the surface by intrusive activities, such as soil boring or sampling operations. Furthermore, once intrusive activities have been completed and surface contamination has been removed, the potential for exposure is again diminished and the area can then be reclassified as part of the contamination reduction zone. Therefore, the exclusion zones for this project will be limited to those areas of the site where active work is being performed plus a designated area surrounding the point of operation. When possible, exclusion zones will be delineated using barrier tape, cones and/or drive poles, and postings to inform site personnel.

The exclusion zone will be considered those areas of active operations plus an established safety zone depending on the task. The following represent the exclusion zone boundaries for the following identified tasks:

- Groundwater sampling - 10 feet surrounding the well head.

Access to work areas will be controlled by TtNUS personnel. No personnel will be permitted to enter site exclusion zones without site-specific training. Site visitors will be provided site-specific training and will be escorted by TtNUS personnel (see section 10.4).

10.2 CONTAMINATION REDUCTION ZONE

The contamination reduction zone (CRZ) is a buffer area between the exclusion zone and areas of the site where contamination is not suspected. The personnel and equipment decontamination will not take place in this area, but will take place at a central location established for this project. This area instead will

serve as a focal point in supporting exclusion zone activities. When applicable, this area will be delineated using barrier tape, cones and/or drive poles, and postings to inform and direct facility personnel.

10.3 SUPPORT ZONE

The support zone for this project will include a staging area where site vehicles will be parked, equipment will be unloaded, and food and drink containers will be maintained. The support zones will be established at areas of the site where exposure to site contaminants would not be expected during normal working conditions or foreseeable emergencies.

10.4 SITE VISITORS

Site visitors for the purpose of this document are identified as representing the following groups of individuals:

- Personnel invited to observe or participate in operations by TtNUS
- Regulatory personnel (NJDEP, EPA, OSHA, etc.)
- NWS Earle personnel
- Other authorized visitors

Personnel working on this project are required to gain initial access to the site by coordinating with the TtNUS FOL or designee and following established site access procedures.

Upon gaining access to the site, site visitors wishing to observe operations in progress will be escorted by a TtNUS representative (arranged for by the FOL) and shall be required to meet the minimum requirements discussed below:

- Site visitors will be routed to the FOL, who will sign them into the field logbook. Information to be recorded in the logbook will include the individual's name (proper identification required), the entity which they represent, and the purpose of the visit.
- Site visitors will be required to produce the necessary information supporting clearance to the site. This shall include information attesting to applicable training (40 hours of HAZWOPER training) and medical surveillance as stipulated in Section 8.0 of this document. In addition, to enter the site operational zones during planned activities, visitors will be required to first go through site-specific training covering the topics stipulated in Section 8.2 of this HASP.

Once the site visitors have completed the above items, they will be permitted to enter the operational zone. Visitors are required to observe the protective equipment and site restrictions in effect at the site at the time of their visit. Visitors not meeting the requirements stipulated in this plan will not be permitted to enter the site operational zones during planned activities. Incidences of unauthorized site visitation will cause the termination of onsite activities until the unauthorized visitor is removed from the premises. Removal of unauthorized visitors will be accomplished with support from the FOL, SSO, or on-site security personnel.

10.5 SITE SECURITY

Site security will be accomplished using existing NWS Earle security resources and procedures, supplemented by TtNUS or subcontractor personnel, if necessary. TtNUS will retain control over active operational areas. The first line of security will take place at the base boundaries restricting the general public. The second line of security will take place at the work site referring interested parties to the FOL. The FOL will serve as a focal point for site personnel and will serve as the final line of security and the primary enforcement contact.

10.6 BUDDY SYSTEM

Personnel engaged in onsite activities will practice the "buddy system" to ensure the safety during this operation.

10.7 MATERIAL SAFETY DATA SHEET (MSDS) REQUIREMENTS

TtNUS and subcontractor personnel will provide MSDSs for chemicals brought onsite. The contents of these documents will be reviewed by the SSO with the user(s) of the chemical substances before an actual use or application of the substances onsite. A chemical inventory of chemicals used onsite will be developed using Section 5.0 of the Health and Safety Guidance Manual. The MSDSs will then be maintained in a central location and will be available for anyone to review on request.

10.8 COMMUNICATION

As TtNUS personnel may not be working in close proximity to each other at NWS Earle a combination of communication methods will be used. Two-way radios, cellular and conventional telephone, hand signals, voice commands, and line of site will provide be utilized when most appropriate. When project tasks are performed simultaneously on different sites, vehicle horns will be used to communicate emergency situations as described in Section 2.6 of this HASP. Radio frequency transmitting devices, including cell

phones and two way radios, must be approved by NWS Earle Radio Shop. Units cleared for Hazards of Electromagnetic Radiation to Ordnance (HERO) will be labeled as safe.

External communication will be accomplished by using provided telephones at the site. External communication will primarily be used for the purpose of resource and emergency resource communications.

10.9 SAFE WORK PERMITS

Exclusion zone work conducted in support of this project will be performed using Safe Work Permits to guide and direct field crews on a task-by-task basis. An example of the Safe Work Permit to be used is illustrated in Figure 10-1. The daily meetings conducted during their generation will further support these work permits. This effort will ensure site-specific considerations and changing conditions are incorporated into the planning effort.

Use of these permits will provide the communication line for reviewing protective measures and hazards associated with each operation. This HASP will be used as the primary reference for selecting levels of protection and control measures. The work permit will take precedence over the HASP when more conservative measures are required based on specific site conditions.

The FOL and/or the SSO will be responsible for completing the Safe Work Permit and issuing them to the appropriate parties. Site personnel at the end of each day will turn in the permit(s) used for that day to the SSO. Permits will be maintained as part of the permanent project files attesting to safety and health measures used for a given task at a given time and place. Problems encountered with the protective measures required should be documented on the permit and brought to the attention of the SSO.

10.10 HOT WORK PERMIT

Any activity performed at the NWS Earle Base that involves production of flame or spark requires a 'Hot Work Permit' issued by the Fire Department. If a gasoline-powered generator is to be used, a Hot Work Permit must be obtained from the NWS Earle Fire Department before the flame/spark producing operations begin.

**FIGURE 10-1
SAFE WORK PERMIT**

Permit No. _____ Date: _____ Time: From _____ to _____

I. Work limited to the following (description, area, equipment used): _____

II. Primary Hazards: Potential hazards associated with this task: _____

III. Field Crew: _____

IV. On-site Inspection conducted Yes No Initials of Inspector _____ TtNUS
Equipment Inspection required Yes No Initials of Inspector _____ TtNUS

V. Protective equipment required Respiratory equipment required
Level D Level B Yes Specify on the reverse
Level C Level A No

Modifications/Exceptions: _____

VI. Chemicals of Concern	Hazard Monitoring	Action Level(s)	Response Measures
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Primary Route(s) of Exposure/Hazard: _____

(Note to FOL and/or SSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)

VII. Additional Safety Equipment/Procedures

Hard-hat..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Hearing Protection (Plugs/Muffs)..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Glasses <input type="checkbox"/> Yes <input type="checkbox"/> No	Safety belt/harness..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Chemical/splash goggles <input type="checkbox"/> Yes <input type="checkbox"/> No	Radio/Cellular Phone <input type="checkbox"/> Yes <input type="checkbox"/> No
Splash Shield..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Barricades <input type="checkbox"/> Yes <input type="checkbox"/> No
Splash suits/coveralls..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Gloves (Type - Work) <input type="checkbox"/> Yes <input type="checkbox"/> No
Impermeable apron <input type="checkbox"/> Yes <input type="checkbox"/> No	Work/rest regimen..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Steel toe work shoes or boots ... <input type="checkbox"/> Yes <input type="checkbox"/> No	Chemical Resistant Boot Covers <input type="checkbox"/> Yes <input type="checkbox"/> No
High Visibility vest..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Tape up/use insect repellent <input type="checkbox"/> Yes <input type="checkbox"/> No
First Aid Kit <input type="checkbox"/> Yes <input type="checkbox"/> No	Fire Extinguisher..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Shower/Eyewash..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Other <input type="checkbox"/> Yes <input type="checkbox"/> No

Modifications/Exceptions: _____

VIII. Site Preparation

	Yes	No	NA
Utility Locating and Excavation Clearance completed.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Hazards Identified and Isolated (Splash and containment barriers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IX. Additional Permits required (Hot work, confined space entry, excavation etc.)..... Yes No
If yes, SSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090

X. Special instructions, precautions: _____

Permit Issued by: _____ Permit Accepted by: _____

11.0 CONFINED SPACE ENTRY

It is not anticipated, under the proposed scope of work, that confined space and permit-required confined space activities will be conducted. **Therefore, personnel under the provisions of this HASP are not allowed, under any circumstances, to enter confined spaces.** A confined space is defined as an area that has one or more of the following characteristics:

- Is large enough and so configured that an employee can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
- Is not designed for continuous employee occupancy.

A Permit-Required Confined Space is one that:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material that has the potential to engulf an entrant.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section.
- Contains other recognized serious safety or health hazard.

For further information on confined space, consult the Health and Safety Guidance Manual or call the PHSO. If confined space operations are to be performed as part of the scope of work, detailed procedures and training requirements will have to be addressed.

12.0 MATERIALS AND DOCUMENTATION

The TtNUS FOL shall ensure the following materials/documents are taken to the project site and used when required.

- A complete copy of this HASP
- Health and Safety Guidance Manual
- Incident Reports
- Medical Data Sheets
- MSDSs for chemicals brought onsite, including decon solutions, fuels, lime, sample preservatives, calibration gases, etc.
- A full-size OSHA Job Safety and Health Poster (posted in the site trailers)
- Training/Medical Surveillance Documentation Form (Blank)
- Emergency Reference Information (Section 2.0, extra copy for posting)

12.1 MATERIALS TO BE POSTED OR MAINTAINED AT THE SITE

The following documentation is to be posted or maintained at the site for quick reference purposes. In situations in which posting these documents is not feasible (such as no office trailer), these documents should be separated and immediately accessible.

Chemical Inventory Listing (posted) - This list represents chemicals brought onsite, including decontamination solutions, sample preservations, fuel, etc. This list should be posted in a central area.

Material Safety Data Sheets (MSDSs) (maintained) - The MSDSs should also be in a central area accessible to site personnel. These documents should match the listings on the chemical inventory list for substances used onsite. It is acceptable to have these documents within a central folder and the chemical inventory as the table of contents.

The OSHA Job Safety & Health Protection Poster (posted) - This poster, as directed by 29 CFR 1903.2 (a)(1), should be conspicuously posted in places where notices to employees are normally posted. Each FOL shall ensure that this poster is not defaced, altered, or covered by other material.

Site Clearance (maintained) - This list is found within the training section of the HASP (See Figure 8-2). This list identifies site personnel, dates of training (including site-specific training), and medical surveillance. The lists indicates not only clearance but also status. If personnel do not meet these requirements, they do not enter the site while site personnel are engaged in activities.

Emergency Phone Numbers and Directions to the Hospital(s) (posted) - This list of numbers and directions will be maintained at phone communications points and in each site vehicle.

Medical Data Sheets/Cards (maintained) - Medical Data Sheets will be completed by onsite personnel and filed in a central location. The Medical Data Sheet will accompany an injury or illness requiring medical attention to the medical facility. A copy of this sheet or a wallet card will be given to personnel to carry with them.

Hearing Conservation Standard (29 CFR 1910.95) (posted) - This standard will be posted when hearing protection or other noise abatement procedures are used.

Personnel Monitoring (maintained) - Results generated through personnel sampling (levels of airborne toxins, noise levels, etc.) will be posted to inform individuals of the results of that effort.

Placards and Labels (maintained) - Where chemical inventories have been separated because of quantities and incompatibilities, these areas will be conspicuously marked using Department of Transportation (DOT) placards and acceptable (Hazard Communication 29 CFR 1910.1200(f)) labels.

The purpose, as stated above, is to allow site personnel quick access to this information. Variations concerning location and methods of presentation are acceptable as long as the objection is accomplished.

13.0 GLOSSARY

ACGIH	American Conference of Governmental Industrial Hygienists
APR	Air Purifying Respirator
BGS	Below Ground Surface
C	Centigrade
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CNS	Central Nervous System
CRZ	Contamination Reduction Zone
CSP	Certified Safety Professional
dBA	Decibel
DoD	Department of Defense
DOT	Department of Transportation
DPT	Direct Push Technology
EPA	Environmental Protection Agency
eV	electron Volts
F	Fahrenheit
FID	Flame Ionization Detector
FOL	Field Operations Leader
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HEPA	High Efficiency Particulate Air
HERO	Hazards of Electromagnetic Radiation to Ordnance
HSM	Health and Safety Manager
IDW	Investigative Derived Waste
IP	Ionization Potential
LEL	Lower Explosive Limit
LFL	Lower Flammable Limit
mg/m ³	Milligrams per cubic meter
mmHg	millimeters mercury
MSDS	Material Safety Data Sheet
msl	mean sea level
NEW	Net Explosive Weight
NIOSH	National Institute of Occupational Safety and Health
NJDEP	New Jersey Department of Environmental Protection
NWS	Naval Weapons Station

13.0 GLOSSARY (Continued)

OB	Open Burning
OD	Open Detonation
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PHSO	Project Health and Safety Officer
PID	Photoionization Detector
PPE	Personal Protective Equipment
PPM	Parts per Million
Pt	Point
RCRA	Resource Conservation and Recovery Act
SAR	Supplied Air Respirator
SI	Site Investigation
SCBA	Self Contained Breathing Apparatus
SOP	Standard Operating Procedure
SSO	Site Safety Officer
STEL	Short Term Exposure Limit
TtNUS	Tetra Tech NUS, Inc.
UEL	Upper Explosive Limit
UFL	Upper Flammable Limit
VOC	Volatile Organic Compound

ATTACHMENT I

**INJURY/ILLNESS PROCEDURE
AND REPORT FORM**

TETRA TECH NUS, INC.

**INJURY/ILLNESS PROCEDURE
WORKER'S COMPENSATION PROGRAM**

**WHAT YOU SHOULD DO IF YOU ARE INJURED OR DEVELOP AN ILLNESS
AS A RESULT OF YOUR EMPLOYMENT:**

- Stop work as needed to ensure no further harm is done.
- If injury is minor, obtain appropriate first aid treatment.
- If injury or illness is severe or life threatening, obtain professional medical treatment at the nearest hospital emergency room. Check with your office location or project health and safety plan for specific instructions.
- If incident involves an injury, illness, or chemical exposure on a project work site, follow instructions in the Health & Safety Plan.
- Immediately report any injury or illness to your supervisor or office manager. In addition, you must contact your Human Resources representative, Marilyn Duffy at (412) 921-8475, and the Corporate Health and Safety Manager, Matt Soltis at (412) 921-8912 within 24 hours of the injury. You will be required to complete an Injury/Illness Report. You may also be required to participate in a more detailed investigation with the Health Sciences Department.
- In the event of a serious near-miss incident, a "Serious Near Miss Report" (Form AR-2, available online at <https://go2.tetratech.com> under "Departments", "Health and Safety", "Accident Reporting Procedures", hyperlink for "Serious Near Miss Report") must be completed and faxed to the Corporate Health and Safety Manager within 48 hours.
- If further medical treatment is needed, our insurance carrier, ACE, will provide information on the authorized providers customized to the location of the injured employee. You can find this information by accessing the website of ACE's claims handler, ESIS, at : www.esis.com. These providers are to be used for treatment of Worker's Compensation injuries subject to the laws of the state in which you work.

ADDITIONAL QUESTIONS REGARDING WORKER'S COMPENSATION:

Contact your local Human Resources representative (Marilyn Duffy), Corporate Health and Safety Manager (Matt Soltis), or Corporate Administration in Pasadena, California, at (626) 351-4664.

Worker's compensation is a state-mandated program that provides medical and disability benefits to employees who become disabled due to job related injury or illness. Tetra Tech, Inc. and its subsidiaries pay premiums on behalf of their employees. This program is based on a no-fault system, and benefits are provided for covered events as an exclusive remedy to the injured employee regardless of fault. The types of injuries or illnesses covered and the amount of

benefits paid are regulated by the state worker's compensation boards and vary from state to state. Corporate Administration in Pasadena is responsible for administering the Company's worker's compensation program. The following is a general explanation of worker's compensation provided in the event that you become injured or develop an illness as a result of your employment with Tetra Tech or any of its subsidiaries. Please be aware that the term used for worker's compensation varies from state to state.

WHO IS COVERED:

All employees of Tetra Tech, whether they are on a full-time, part-time or temporary status, working in an office or in the field, are entitled to worker's compensation benefits from the first day of work. All employees must follow the above injury/illness reporting procedures. If you are working out-of-state and away from your home office, you are still eligible for worker's compensation benefits.

Consultants, independent contractors, and employees of subcontractors and employees from temporary employment agencies are not covered by Tetra Tech's Worker's Compensation plan.

WHAT IS COVERED:

If you are injured or develop an illness caused by your employment, worker's compensation benefits are available to you subject to the laws of the state you work in. Injuries do not have to be serious; even injuries treated by first aid practices are covered and must be reported.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT

To: _____
Subsidiary Health and Safety Representative

Prepared by: _____

cc: _____
Workers Compensation Administrator

Position: _____

Project name: _____

Office: _____

Project number: _____

Telephone number: _____

Fax number: _____

Information Regarding Injured or Ill Employee

Name: _____

Office: _____

Home address: _____

Gender: M F No. of dependents: _____

Marital status: _____

Home telephone number: _____

Date of birth: _____

Occupation (regular job title): _____

Social security number: _____

Department: _____

Date of Accident: _____

Time of Accident: _____ a.m. p.m.

Time Employee Began Work: _____

Check if time cannot be determined

Location of Incident

Street address: _____

City, state, and zip code: _____

County: _____

Was place of accident or exposure on employer's premises? Yes No

Information About the Incident

What was the employee doing just before the incident occurred? Describe the activity as well as the tools, equipment, or material the employee was using. Be specific. Examples: "Climbing a ladder while carrying roofing materials"; "Spraying chlorine from hand sprayer"; "Daily computer key-entry"

What Happened? Describe how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time"

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT (Continued)

Information About the Incident (Continued)

What was the injury or illness? Describe the part(s) of the body affected and how it was affected. Be more specific than "hurt," "pain," or "sore." Examples "Strained back"; "Chemical burn, right hand"; "Carpal tunnel syndrome, left wrist"

Describe the Object or Substance that Directly Harmed the Employee: Examples: "Concrete floor"; "Chlorine"; "Radial arm saw." If this question does not apply to the incident, write "Not applicable."

Did the employee die? Yes [] No [] Date of death: _____

Was employee performing regular job duties? Yes [] No []

Was safety equipment provided? Yes [] No [] Was safety equipment used? Yes [] No []

Note: Attach any police reports or related diagrams to this report.

Witness (Attach additional sheets for other witnesses.)

Name: _____

Company: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Medical Treatment Required? [] Yes [] No [] First aid only

Name of physician or health care professional: _____

If treatment was provided away from the work site, provide the information below.

Facility name: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Was the employee treated in an emergency room? [] Yes [] No

Was the employee hospitalized over night as an in-patient? [] Yes [] No

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT (Continued)

Corrective Action(s) Taken by Unit Reporting the Accident:

Corrective Action Still to be Taken (by whom and when):

Name of Tetra Tech employee the injury or illness was first reported to: _____

Date of Report: _____ Time of Report: _____

I have reviewed this investigation report and agree, to the best of my recollection, with its contents.

Printed Name of Injured Employee

Telephone Number

Signature of Injured Employee

Date

The signatures provided below indicate that appropriate personnel have been notified of the incident.

Title	Printed Name	Signature	Telephone Number	Date
Office Manager				
Project Manager				
Site Safety Coordinator or Office Health and Safety Representative				

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT (Continued)

To Be Completed by the Subsidiary Health and Safety Representative

Classification of Incident:

Injury Illness

Result of Incident:

- First aid only
 Days away from work
 Remained at work but incident resulted in job transfer or work restriction
 Incident involved days away and job transfer or work restriction
 Medical treatment only

No. of days away from work
Date employee left work
Date employee returned to work
No. of days placed on restriction or job transfer:

OSHA Recordable Case Number

To Be Completed by Human Resources

Social security number:
Date of hire: Hire date for current job:
Wage information: \$ per Hour Day Week Month
Position at time of hire:
Current position: Shift hours:
State in which employee was hired:
Status: Full-time Part-time Hours per week: Days per week:
Temporary job end date:

To Be Completed during Report to Workers Compensation Carrier

Date reported: Reported by:
Confirmation number:
Name of contact:
Field office of claims adjuster:

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

ATTACHMENT II
MEDICAL DATA SHEET

MEDICAL DATA SHEET

This Medical Data Sheet must be completed by all on-site personnel and kept in a central location during the execution of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project _____

Name _____ Home Telephone _____

Address _____

Age _____ Height _____ Weight _____

Name of Next Kin _____

Drug or other Allergies _____

Particular Sensitivities _____

Do You Wear Contacts? _____

Provide a Checklist of Previous Illnesses or Exposure to Hazardous Chemicals _____

What medications are you presently using? _____

Do you have any medical restrictions? _____

Name, Address, and Phone Number of personal physician: _____

I am the individual described above. I have read and understand this HASP.

Signature

Date

ATTACHMENT III
SAFE WORK PERMITS

**SAFE WORK PERMIT
MOBILIZATION AND DEMOBILIZATION
NAVAL WEAPONS STATION EARLE – SITE 7
COLTS NECK, NEW JERSEY**

Permit No. _____ Date: _____ Time: From _____ to _____

I. Work limited to the following (description, area, equipment used): Mob/Demob at Site 7

II. Primary Hazards: Potential hazards associated with this task: lifting; pinches and compressions; slip, trip and falls; ambient temperature extremes; animal and insect bites or stings, poisonous plants; inclement weather

III. Field Crew: _____

IV. On-site inspection conducted Yes No Initials of Inspector _____ TtNUS
Equipment inspection required Yes No Initials of Inspector _____ TtNUS

V. Protective equipment required Level D Level B
Level C Level A
Respiratory equipment required Yes Specify on the reverse
No

Modifications/Exceptions: _____

VI. Chemicals of Concern	Hazard Monitoring	Action Level(s)	Response Measures
<u>None expected during this task</u>	_____	_____	_____
_____	_____	_____	_____

Primary Route(s) of Exposure/Hazard: NA

(Not to FOL and/or SHSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)

VII. Additional Safety Equipment/Procedures

Hard-hat.....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Hearing Protection (Plugs/Muffs).....	<input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Glasses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Safety belt/harness.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Chemical/splash goggles.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Radio/Cellular Phone.....	<input type="checkbox"/> Yes <input type="checkbox"/> No
Splash shield	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Barricades	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Splash suits/coveralls	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Gloves (Type – Work).....	<input type="checkbox"/> Yes <input type="checkbox"/> No
Impermeable apron.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Work/rest regimen	<input type="checkbox"/> Yes <input type="checkbox"/> No
Steel toe work shoes or boots.....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Chemical resistant boot covers.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
High visibility vest	<input type="checkbox"/> Yes <input type="checkbox"/> No	Tape up/use insect repellent	<input type="checkbox"/> Yes <input type="checkbox"/> No
First Aid Kit	<input type="checkbox"/> Yes <input type="checkbox"/> No	Fire extinguisher	<input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Shower/Eyewash.....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Other.....	<input type="checkbox"/> Yes <input type="checkbox"/> No

Modifications/Exceptions: _____

VIII. Site Preparation

	Yes	No	NA
Utility Locating and Excavation Clearance completed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Hazards Identified and Isolated (Splash and containment barriers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IX. Additional Permits required (Hot work, confined space entry, excavation etc.)..... Yes No
If yes, SHSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090

X. Special instructions, precautions: Use safe lifting/carrying techniques.

Permit Issued by: _____ Permit Accepted by: _____

**SAFE WORK PERMIT
GROUNDWATER SAMPLING
NAVAL WEAPONS STATION EARLE - SITE 7
COLTS NECK, NEW JERSEY**

Permit No. _____ Date: _____ Time: From _____ to _____

- I. **Work limited to the following (description, area, equipment used):** Groundwater sampling and water level gauging
- II. **Primary Hazards:** Potential hazards associated with this task: chemical; transfer of contamination; pinch/compression points, lifting; slip, trip and fall ambient temperature extremes, insect/animal bites, stings, poisonous plants and inclement weather
- III. **Field Crew:** _____
- IV. **On-site Inspection conducted** Yes No Initials of Inspector _____ TtNUS
Equipment Inspection required Yes No Initials of Inspector _____ TtNUS

- V. **Protective equipment required**
 Level D Level B
 Level C Level A
 Modifications/Exceptions: _____
- Respiratory equipment required**
 Yes Specify on the reverse
 No

VI. Chemicals of Concern	Hazard Monitoring	Action Level(s)	Response Measures
<u>VOCs - benzene</u>	<u>PID w/ 10.6 eV lamp</u>	<u>sustained readings(> 1 minute)</u>	<u>evacuate area until</u>
<u>Metals - Al, Mn and TI</u>	_____	<u>above background</u>	<u>readings return to</u>
_____	_____	_____	<u>background</u>

Primary Route(s) of Exposure/Hazard: absorption

(Note to FOL and/or SSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)

- VII. **Additional Safety Equipment/Procedures**
- | | | | |
|------------------------------------|---|---------------------------------------|---|
| Hard-hat..... | <input type="checkbox"/> Yes <input type="checkbox"/> No | Hearing Protection (Plugs/Muffs)..... | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Safety Glasses | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Safety Belt/Harness..... | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Chemical/Splash Goggles | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Radio/Cellular Phone..... | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Splash Shield..... | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Barricades | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Splash Suits/Coveralls..... | <input type="checkbox"/> Yes <input type="checkbox"/> No | Gloves (Type - Nitrile)..... | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Impermeable Apron | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Work/rest regimen | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Steel Toe Work Shoes or Boots..... | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Chemical Resistant Boot Covers | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| High Visibility Vest | <input type="checkbox"/> Yes <input type="checkbox"/> No | Tape/Insect Repellent | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| First Aid Kit | <input type="checkbox"/> Yes <input type="checkbox"/> No | Fire Extinguisher..... | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Safety Shower/Eyewash..... | <input type="checkbox"/> Yes <input type="checkbox"/> No | Other..... | <input type="checkbox"/> Yes <input type="checkbox"/> No |
- Modifications/Exceptions: _____

- VIII. **Sit Preparation**
- | | | | |
|---|------------------------------|-----------------------------|-----------------------------|
| Utility Locating and Excavation Clearance completed | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Physical Hazards Identified and Isolated (Splash and containment barriers) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc)..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- IX. **Additional Permits required** (Hot work, confined space entry, excavation etc.)..... Yes No
 If yes, SHSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090

X. **Special instructions, precautions:** _____

Permit Issued by: _____ Permit Accepted by: _____

**SAFE WORK PERMIT
DECONTAMINATION
NAVAL WEAPONS STATION EARLE - SITE 7
COLTS NECK, NEW JERSEY**

Permit No. _____ Date: _____ Time: From _____ to _____

I. Work limited to the following (description, area, equipment used): Decontamination of the sampling equipment

II. Primary Hazards: Potential hazards associated with this task: chemical exposure; lifting; noise; vehicle and foot traffic; ambient temperature extremes; slip, trip and fall; and inclement weather

III. Field Crew: _____

IV. On-site Inspection conducted Yes No Initials of Inspector _____ TtNUS

Equipment Inspection required Yes No Initials of Inspector _____ TtNUS

V. Protective equipment required

Level D Level B

Level C Level A

Modifications/Exceptions: _____

Respiratory equipment required

Yes Specify on the reverse

No

VI. Chemicals of Concern

VOCs – benzene _____

Metals - Al, Mn and TI _____

Hazard Monitoring

PID w/ 10.6 eV lamp _____

Action Level(s)

sustained readings(> 1 minute) _____

above background _____

Response Measures

evacuate area until _____

readings return to _____

background _____

Primary Route(s) of Exposure/Hazard: absorption

(Note to FOL and/or SSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)

VII. Additional Safety Equipment/Procedures

Hard-Hat Yes No

Safety Glasses Yes No

Chemical/Splash Goggles Yes No

Splash Shield..... Yes No

Splash Suits/Coveralls..... Yes No

Impermeable apron..... Yes No

Steel Toe Work Shoes or Boots..... Yes No

High Visibility Vest Yes No

First Aid Kit Yes No

Safety Shower/Eyewash..... Yes No

Modifications/Exceptions: _____

Hearing Protection (Plugs/Muffs)..... Yes No

Safety Belt/Harness..... Yes No

Radio/Cellular Phone..... Yes No

Barricades Yes No

Gloves (Type – Nitrile)..... Yes No

Work/rest Regimen Yes No

Chemical Resistant Boot Covers Yes No

Tape/Insect Repellent Yes No

Fire Extinguisher..... Yes No

Other..... Yes No

VIII. Site Preparation

Utility Locating and Excavation Clearance completed Yes No NA

Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place Yes No NA

Physical Hazards Identified and Isolated (Splash and containment barriers) Yes No NA

Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc)..... Yes No NA

IX. Additional Permits required (Hot work, confined space entry, excavation etc.)..... Yes No

If yes, SSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090

X. Special instructions, precautions: Review and follow the instructions on the MSDS for the decontamination fluids. Follow guidance in Table 5-1 for PPE for different decontamination tasks.

Permit Issued by: _____

Permit Accepted by: _____